INCH-POUND
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10 December 2003
SUPERSEDING
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3 January 1979

MILITARY SPECIFICATION

MICROCIRCUITS, ANALOG SWITCH WITH DRIVER, MONOLITHIC AND MULTI-CHIP SILICON

This specification is approved for use by all Departments and Agencies of the Department of Defense.

Reactivated for new design as of 10 December 2003. May be used for either new or existing design acquisition

1. SCOPE

- 1.1 <u>Scope.</u> This specification covers the detail requirements for silicon, break-before-make, monolithic and multichip analog switches with drivers. Two product assurance classes and a choice of case outlines and lead finishes are provided and are reflected in the complete part number. For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.3)
 - 1.2 Part number. The part number should be in accordance with MIL-PRF-38535, and as specified herein.
 - 1.2.1 <u>Device types</u>. The device types should be as follows:

Device type	<u>Circuit</u>
01	Dual channel, 30 Ω , SPST switches
02	Dual channel, 75 Ω , SPST switches
03	Dual channel, 30 Ω , DPST switches
04	Dual channel, 75 Ω , DPST switches
05	Single channel, 30 Ω , SPDT switch
06	Single channel, 75 Ω , SPDT switch
07	Dual channel, 30 Ω , SPDT switches
08	Dual channel, 75 Ω , SPDT switches

NOTE: A channel is defined as a driver with associated switches.

- 1.2.2 Device class. The device class should be the product assurance level as defined in MIL-PRF-38535.
- 1.2.3 Case outline. The case outline should be as designated in MIL-STD-1835 and as follows:

Outline letter	Descriptive designator	<u>Terminals</u>	Package style
A <u>1</u> /	GDFP5-F14 or CDFP6-F14	14	Flat pack
С	GDIP1-T14 or CDIP2-T14	14	Dual-in-line
D	GDFP1-F14 or CDFP2-F14	14	Flat pack
E	GDIP1-T16 or CDIP2-T16	16	Dual-in-line
I	MACY1-X10	10	Can
X	CDFP3-F14	14	Flat pack

^{1/} Inactive package case outline.

Comments, suggestions, or questions on this document should be addressed to: Commander, Defense Supply Center Columbus, ATTN: DSCC-VAS, 3990 East Broad St., Columbus, OH 43216-5000, or email bipolar@dscc.dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at www.dodssp.daps.mil.

AMSC N/A FSC 5962

1.3 Absolute maximum ratings.

Voltage, negative supply to positive supply [(+V _{CC}) – (-V _{CC})]	36 V dc
Voltage, drain to positive supply (+V _{CC} – V _D)	33 V dc
Voltage, negative supply to drain [V _D – (-V _{CC})]	33 V dc
Voltage, source to drain (V _D – V _S)	±22 V dc
Voltage, negative supply to logic supply [V _L – (-V _{CC})]	36 V dc
Voltage, input to logic supply (V _L – V _{IN})	8 V dc
Voltage, reference supply to logic supply (V _L – V _R)	8 V dc
Voltage, reference supply to input (V _{IN} – V _R)	8 V dc
Voltage, negative supply to reference supply [V _R –(-V _{CC})]	27 V dc
Voltage, input to reference supply (V _R – V _{IN})	2 V dc
Current, any terminal	30 mA
Lead temperature (soldering, 60 seconds)	+300°C
Junction temperature	
Storage temperature	

1.4 Recommended operating conditions.

Positive supply voltage (+V _{CC})	
Negative supply voltage (-V _{CC})	- 15 V dc
Reference supply voltage (V _R)	GND
Logic supply voltage (V _L)	
Ambient operating temperature range (T _A)	

1.5 Power and thermal characteristics.

Case outline	Maximum allowable power dissipation	$\underline{\text{Maximum}} \; \theta_{\text{JC}}$	$\underline{\text{Maximum}} \; \theta_{\text{JA}}$
C, E	400 mW @ T _A = 125°C	35°C/W	120°C/W
D, A	350 mW @ $T_A = 125^{\circ}C$	60°C/W	140°C/W
1	350 mW @ T _A = 125°C	40°C/W	140°C/W
Χ	300 mW @ $T_A = 125^{\circ}C$	30°C/W	166°C/W

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 <u>Specifications, standards, and handbooks</u>. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Departments of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-38535 - Integrated Circuits (Microcircuits) Manufacturing, General Specification for.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-883 - Test Method Standard for Microelectronics.

MIL-STD-1835 - Interface Standard Electronic Component Case Outlines.

(Copies of these documents are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

2.2 <u>Order of precedence</u>. In the event of a conflict between the text of this specification and the references cited herein the text of this document shall takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

- 3.1 <u>Qualification</u>. Microcircuits furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturers list before contract award (see 4.3 and 6.4).
- 3.2 <u>Item requirements</u>. The individual item requirements shall be in accordance with MIL-PRF-38535 and as specified herein or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not affect the form, fit, or function as described herein.
- 3.3 <u>Design, construction, and physical dimensions</u>. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38535 and herein.
- 3.3.1 <u>Terminal connections.</u> The terminal connections shall be as specified on figure 1. Switch positions shown are for a high level input logic.
- 3.3.2 <u>Schematic circuits</u>. The schematic circuits shall be maintained by the manufacturer and made available to the qualifying activity and the preparing activity (DSCC-VA) upon request.
 - 3.3.4 Case outlines. The case outlines shall be as specified in 1.2.3.
 - 3.4 Lead material and finish. The lead material and finish shall be in accordance with MIL-PRF-38535 (see 6.6).
- 3.5 <u>Electrical performance characteristics</u>. The electrical performance characteristics are as specified in table I, and apply over the full recommended ambient operating temperature range, unless otherwise specified.
- 3.5.1 <u>Switch operation</u>. The analog switches shall turn "on" with either a low input $(V_R \le V_{IL} \le 0.8 \text{ V})$ or a high input $(2 \text{ V} \le V_{IH} \le V_L)$ as follows:

Device type	V_{IN}	Switch ON	Switch OFF
01, 02	0.8 V dc	1,2	
	2.0 V dc		1,2
03, 04	0.8 V dc		1,2,3,4
	2.0 V dc	1,2,3,4	
05, 06	0.8 V dc	2	1
	2.0 V dc	1	2
07, 08	0.8 V dc	3,4	1,2
•	2.0 V dc	1,2	3,4

- 3.6 <u>Electrical test requirements</u>. Electrical test requirements for each device class shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table III.
 - 3.8 Marking. Marking shall be in accordance with MIL-PRF-38535.
- 3.9 <u>Microcircuit group assignment</u>. The devices covered by this specification shall be in microcircuit group number 94 (see MIL-PRF-38535, appendix A).

TABLE I. <u>Electrical performance characteristics</u>.

Characteristic	Symbol	Conditions <u>1</u> / (unless otherwise	Temperature range	Device type	Li	mits	Unit
		specified, $V_L = +5 \text{ V}$, $V_R = \text{GND}$ and $\pm V_{CC} = \pm 15 \text{ V}$	9	3,7	Min	Max	
Resistance drain-to- source (on)	R _{DS}	V_{IN} = (see 3.5.1), V_{D} = -7.5 V, I_{S} = -10 mA	-55°C ≤ T _A ≤ 125°C	01, 03, 05, 07		60	Ω
		$V_{IN} = (see 3.5.1),$ $V_D = -10 \text{ V}, I_S = -10 \text{ mA}$		02, 04, 06, 08		150	
Source leakage current (off)	I _{S(OFF)}	V_{IN} = (see 3.5.1), V_{D} = -10 V, V_{S} = 10 V, $+V_{CC}$ = 10 V, $-V_{CC}$ = -20 V	-55°C ≤ T _A ≤ 125°C	All	-100	100	nA
		V_{IN} = (see 3.5.1), V_D = -7.5 V, V_S = +7.5 V		01, 03, 05, 07	-100	100	
		V_{IN} = (see 3.5.1), V_{D} = -10 V, V_{S} = 10 V		02, 04, 06, 08	-100	100	
Drain leakage current (off)	I _{D(OFF)}	V_{IN} = (see 3.5.1), V_{D} = 10 V, V_{S} = -10 V, $+V_{CC}$ = 10 V, $-V_{CC}$ = -20 V	-55°C ≤ T _A ≤ 125°C	All	-100	100	nA
		V_{IN} = (see 3.5.1), V_D = 7.5 V, V_S = -7.5 V		01, 03, 05, 07	-100	100	
		V_{IN} = (see 3.5.1), V_{D} = 10 V, V_{S} = -10 V		02, 04, 06, 08	-100	100	
Channel leakage current (on)	I _{D(ON)+} I _{S(ON)}	V_{IN} = (see 3.5.1), V_{D} = V_{S} = -7.5 V	-55°C ≤ T _A ≤ 125°C	01, 03, 05, 07	-200	200	nA
		$V_{IN} = (see 3.5.1),$ $V_D = V_S = -10 \text{ V}$		02, 04, 06, 08	-200	200	
Low level input current	I _{IL}	V _{IN} = GND	-55°C ≤ T _A ≤ 125°C	All	-250	-0.1	μА
High level input current	I _{IH}	V _{IN} = 5 V	-55°C ≤ T _A ≤ 125°C	All	-2	20	μА
Time to turn on	t _{ON}	See figure 5	T _A = -55°C	01, 03, 05, 07		150	ns
			$T_A = 25^{\circ}C$ $T_A = 125^{\circ}C$			150 300	_
Time to turn on	t _{ON}	See figure 5	$T_A = -55^{\circ}C$ $T_A = 25^{\circ}C$	02, 04, 06, 08		250 250	ns
			$T_A = 25^{\circ}C$ $T_A = 125^{\circ}C$	-		350	-

TABLE I. <u>Electrical performance characteristics</u> – Continued.

Characteristic	Symbol	Conditions <u>1</u> / (unless otherwise	Temperature range	Device type	Li	mits	Unit
		specified, $V_L = +5 \text{ V}$, $V_R = \text{GND}$ and $\pm V_{CC} = \pm 15 \text{ V}$	i di igo	, ypc	Min	Max	
Time to turn off	t _{OFF}	See figure 5	T _A = -55°C	All		130	ns
			T _A = 25°C			130	
			T _A = 125°C			200	
Positive supply current	+lcc	V _{IN} = GND and 5 V	-55°C ≤ T _A ≤ 125°C	01, 02, 07, 08		2.5	mA
				05, 06		1.4	
		V _{IN} = GND		03, 04		5	
		V _{IN} = 5 V				1.7	_
Negative supply current	-lcc	V _{IN} = GND and 5 V	-55°C ≤ T _A ≤ 125°C	01, 02, 07, 08	-8		mA
				05, 06	-4.8		†
		V _{IN} = GND	1	03, 04	-8.8		-
		V _{IN} = 5 V			-6.4		
Logic supply current	I _L	V _{IN} = GND and 5 V	-55°C ≤ T _A ≤ 125°C	01, 02, 03, 04, 07, 08		7	mA
				05, 06		5	1
Reference supply current	I _R	V _{IN} = GND and 5 V	-55°C ≤ T _A ≤ 125°C	All	-2.2		mA
Charge transfer error	V _{СТЕ}	V _S = GND (See table III footnote <u>3</u> /)	T _A = 25°C	All		20	mV
Crosstalk between channels	V _{CT} <u>2</u> /	f = 10 MHz, V _{gen} = 1 V _{P-P}	T _A = 25°C	All	60		dB
Single channel isolation	V _{ISO}	f = 10 MHz, V _{gen} = 1 V _{P-P}	T _A = 25°C	All	50		dB
Break-before-make time delay	t _D	See figure 6	-55°C ≤ T _A ≤ 125°C	05, 06, 07, 08	5		ns

 $[\]underline{1}\!/$ Test conditions are specified in table III and figures 2, 3, 4, and 5. $\underline{2}\!/$ For monolithic devices only.

TABLE II. Electrical test requirements.

	Subgroups	(see table III)
MIL-PRF-38535	Class S	Class B
test requirements	devices	devices
Interim electrical parameters	1	1
Final electrical test parameters	1*, 2, 3, 9	1*, 2, 3, 9
Group A test requirements	1,2,3,(4,7)**,	1,2,3,(4,7)**,
	9,10,11,	9,10,11,
	(12)***	(12)***
Group B electrical test parameters when	1,2,3 and	
using the method 5005 QCI option	table IV delta limits	N/A
Group C end-point electrical	1,2,3 and	1 and
parameters	table IV delta limits	table IV delta limits
Additional electrical subgroups for group C periodic inspections	N/A	(4, 7)****
Group D end-point electrical parameters	1,2,3	1
Additional electrical subgroups for group D periodic inspections	(4,7)****	None

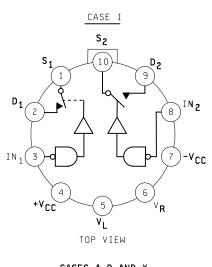
- * PDA applies to subgroup 1.
- ** See 4.4.1d
- *** See 4.4.1c
- **** See 4.4.3c
- ***** See 4.4.4

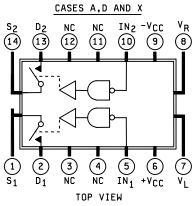
4. VERIFICATION.

- 4.1 <u>Sampling and inspection</u>. Sampling and inspection procedures shall be in accordance with MIL-PRF-38535 or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not effect the form, fit, or function as function as described herein.
- 4.2 <u>Screening</u>. Screening shall be in accordance with MIL-PRF-38535, and shall be conducted on all devices prior to qualification and quality conformance inspection. The following additional criteria shall apply:
 - a. The burn-in test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015 of MIL-STD-883.
 - b. Reverse bias burn-in (method 1015 of MIL-STD-883). This screen shall apply to class S only. However, regardless of device class, for device types 05, 06, 07, and 08, an additional burn-in will be performed following an interim electrical test (see table II, PDA applies). The additional burn-in will be performed with the logic level of the switch drivers opposite to that used in the first burn-in.

- c. Interim and final electrical test parameters shall be as specified in table II, except interim electrical parameters test prior to burn-in is optional at the discretion of the manufacturer.
- d. Additional screening for space level product shall be as specified in MIL-PRF-38535.
- e. Internal visual inspection (method 2010 and method 2017 multichip criteria of MIL-STD-883). For multichip devices, internal visual inspection shall be performed for each chip within the package.
- 4.3 Qualification inspection. Qualification inspection shall be in accordance with MIL-PRF-38535.
- 4.4 <u>Technology Conformance inspection (TCI)</u>. Technology conformance inspection shall be in accordance with MIL-PRF-38535 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4).
- 4.4.1 Group A inspection. Group A inspection shall be in accordance with table III of MIL-PRF-38535 and as follows:
 - Tests shall be as specified in table II herein.
 - b. Subgroups 5, 6, and 8 shall be omitted.
 - c. Subgroup 12 (device types 05, 06, 07, and 08) shall be added to group A inspection as specified in table III herein. The sample size series number shall be 7 for all classes (accept on 0).
 - d. Subgroups 4 and 7 shall be performed for initial qualification only using a sample of 5 devices for each device type submitted to group A inspection, with no failure allowed. If not more than 1 failure is found in the first sample of 5, a second sample of 5 is permitted with no further failures allowed.
 - 4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of MIL-PRF-38535.
- 4.4.3 Group C inspection. Group C inspection shall be in accordance with table IV of MIL-PRF-38535 and as follows:
 - a. End point electrical parameters shall be as specified in table II herein.
 - b. The steady-state life test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1005 of MIL-STD-883.
 - c. A special subgroup shall be added to group C inspection for class B devices only, and it shall consist of the group A subgroups 4 and 7 as specified in table III herein. This special subgroup shall be performed on each device type that is qualified from those listed in 1.2.1 herein. After initial qualification, the special subgroup shall be performed periodically on a single device type selected from those device types previously qualified. A sample of 5 devices (of the device type to be inspected) shall be chosen and submitted to test with no failures allowed. If not more than 1 failure is found in the first sample of 5, a second sample of 5 is permitted with no further failures allowed. When more than one device type is qualified, the single device type selected shall be different device type for each subsequent periodic inspection until all qualified device types have been inspected. The sequence of single device types shall be repeated to fulfill the periodic inspection requirement.

Device type 01 and 02





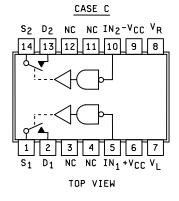
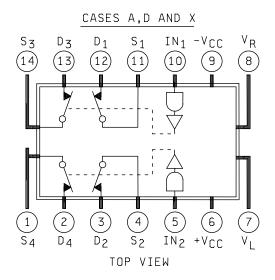
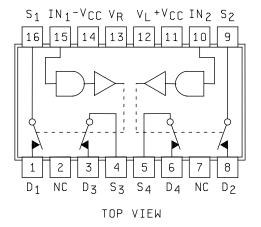


Figure 1. <u>Terminal connections</u>.

Device type 03 and 04



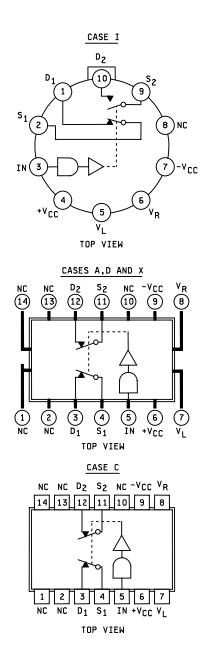
CASE E



- 1. Switch positions are shown for the high logic level input condition.
- 2. -V_{CC} may be connected to the base of metal packages (case I).

Figure 1. <u>Terminal connections</u> – Continued.

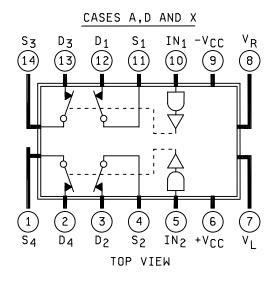
Device type 05 and 06



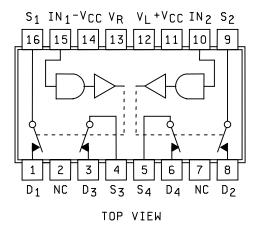
- Switch positions are shown for the high logic level input condition.
 -V_{CC} may be connected to the base of metal packages (case I).

Figure 1. <u>Terminal connections</u> – Continued.

Device type 07 and 08



CASE E



- 1. Switch positions are shown for the high logic level input condition.
- 2. -V_{CC} may be connected to the base of metal packages (case I).

Figure 1. <u>Terminal connections</u> – Continued.

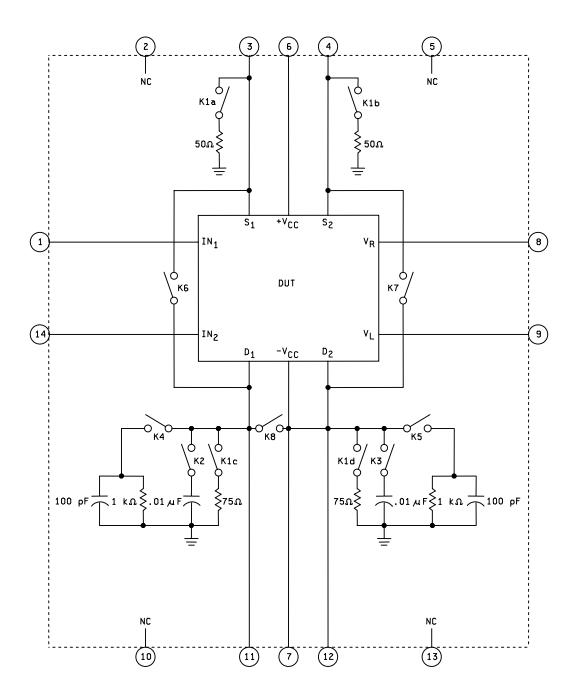


FIGURE 2. Test circuit (static and dynamic tests) for device types 01 and 02.

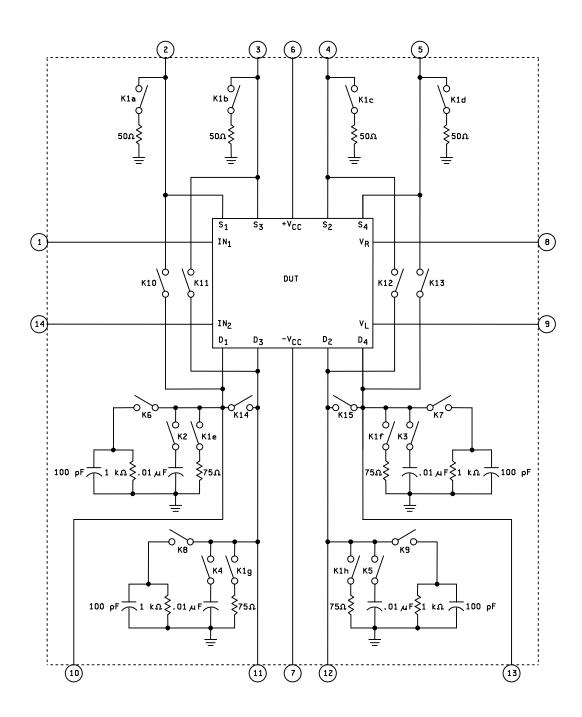


FIGURE 3. Test circuit (static and dynamic tests) for device types 03, 04, 07, and 08.

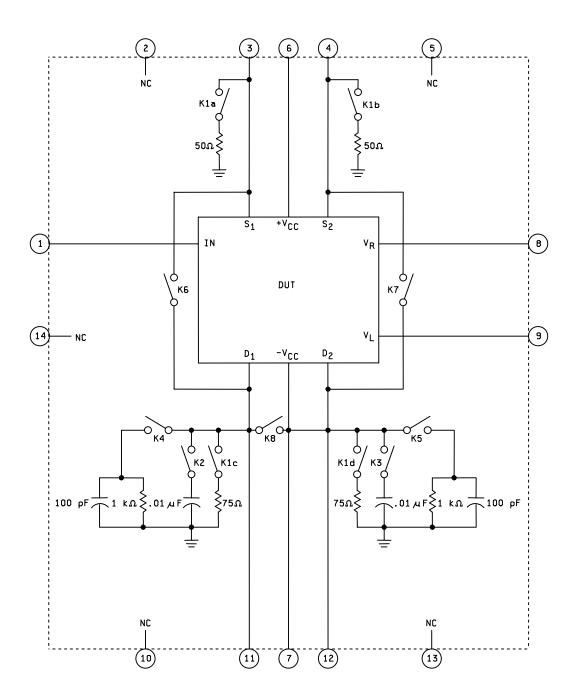
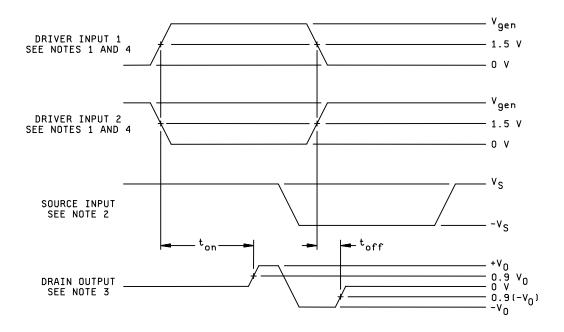


FIGURE 4. Test circuit (static and dynamic tests) for device types 05 and 06.



- 1. The driver pulse generator shall have the following characteristics:
 - a. $V_{gen} = 0 \text{ V to } 3.0 \text{ V}.$
 - b. Rise time (0.3 V to 2.7 V) \leq 10 ns
 - c. Fall time (2.7 V to 0.3 V) \leq 10 ns
- 2. The source pulse generator shall have the following characteristics:
 - a. $V_{gen} = -7.5 \text{ V}$ to +7.5 V square wave (device types 01, 03, 05, and 07).
 - b. $V_{gen} = -10 \text{ V}$ to +10 V square wave (device types 02, 04, 06, and 08).

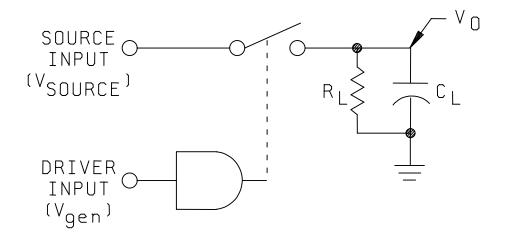
FIGURE 5. Input-output waveforms for time delay tests.

3. For device types 01, 03, 05, and 07:

a.
$$V_{source} = +7.5 \text{ V for T}_{on}$$
.
b. $V_{source} = -7.5 \text{ V for T}_{off}$.

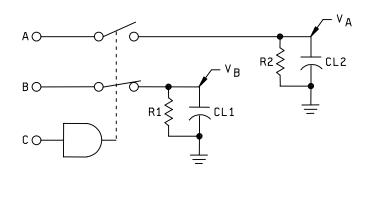
For device types 02, 04, 06, and 08:

- a. $V_{\text{source}} = +10.0 \text{ V for } T_{\text{on}}$.
- b. $V_{\text{source}} = -10.0 \text{ V for T}_{\text{off}}$.
- 4. Driver input 1 shall be used to test all switches for device types 03 and 04, switch 1 for device types 05 and 06 and switches 1 and 2 for device types 07 and 08. Driver input 2 shall be used to test all switches for device types 01 and 02, switch 2 for device types 05 and 06 and switches 3 and 4 for device types 07 and 08.



$$R_L = 1 k\Omega \pm 5\%$$
 $C_L = 95-200 pf \pm 5\%$
(C_ INCLUDES ASSOCIATED TEST SYSTEM CAPACITANCE)

FIGURE 5. Input-output waveforms for time delay tests – Continued.



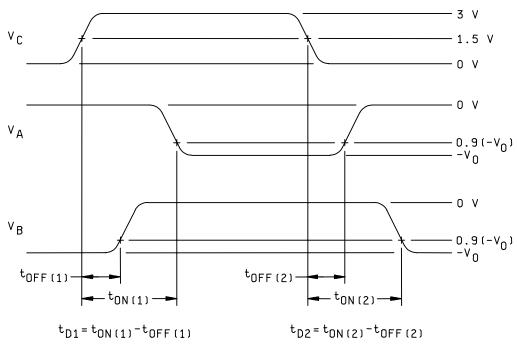


FIGURE 6. Break-before-make test.

NOTES:

- 1. R1 = R2 = 1 k Ω ± 5%. C_{L1} = C_{L2} = (95-200) pF ± 5%, to include test and fixture capacitance.
- 2. Both TD1 and TD2 shall be measured. These measurements shall apply only to device types 05, 06, 07, and 08. See 3.5.1 for switch conditions.
- 3. $V_{\text{source}} = -7.5 \text{ V}$ (for T_{on} and T_{off} Device types 05 and 07). $V_{\text{source}} = -10.0 \text{ V}$ (for T_{on} and T_{off} Device types 06 and 08).
- 4. $V_O = -7.2 \text{ V}$ (device types 05 and 07). $V_O = -9.2 \text{ V}$ (device types 06 and 08).
- 5. The driver pulse generator shall have the following characteristics:
 - a. $V_{gen} = 0 \text{ V to } 3.0 \text{ V}.$
 - b. Rise time $(0.3 \text{ V to } 2.7 \text{ V}) \le 10 \text{ ns.}$
 - c. Fall time (2.7 V to 0.3 V) \leq 10 ns.
- 6. Break-before-make performance: The device types 05, 06, 07 and 08 all operate in the break-before-make mode at room temperature ($25^{\circ} \pm 3^{\circ}C$) and higher (to $125^{\circ} \pm 3^{\circ}C$). Break-before-make performance is defined as a difference between T_{on} and T_{off} of ≥ 5 ns when two switches driven by a common driver are switching a common analog signal. T_{on} and T_{off} are measured as shown in figure 6. Below room temperature, it is possible that under negative analog voltage conditions, break-before-make action may not occur.

FIGURE 6. Break-before-make test - Continued.

TABLE III. Group A inspection for device type 01.

								Ad	dapter pin	number <u>′</u>	<u>l</u> /						Relays energized	Measured pin no.	Lim	iits	
Subgroup	Symbol	Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1		Min	Max	1
			IN ₁	NC	S ₁	S_2	NC	+V _{CC}	-V _{CC}	V_R	V_L	NC	D_1	D_2	NC	IN_2					Unit
1	R_{DS}	1	0.8 V		-10 mA			15 V	-15 V	GND	5.0 V		-7.5 V				None	3	-7.8		V <u>2</u> / V <u>2</u> /
$T_A = +25^{\circ}C$	R _{DS}	2				-10 mA		15 V	-15 V	"	66			-7.5 V		0.8 V	44	4	-7.8		
	I _{S(OFF)}	3	2.0 V		10 V			10 V	-20 V	"	"		-10 V				"	3	-1	1	nA
	"	4	0.01/		7.5.1	10 V		10 V	-20 V	"	"		7.5.7	-10 V		2.0 V		4	-1	1	nA
	"	5 6	2.0 V		7.5 V	7.5 V		15 V	-15 V	"	"		-7.5 V	-7.5 V		2.0 V		3	-1	1	nA
	I	6 7	2.0 V		-10 V	7.5 V		15 V 10 V	-15 V -20 V	"	"		10 V	-7.5 V		2.0 V	"	4	-1 -1	1	nA nA
	I _{D(OFF)}	8	2.0 V		-10 V	-10 V		10 V	-20 V	"	66		10 V	10 V		2.0 V	"	12	-1 -1	1	nA
•	"	9	2.0 V		-7.5 V	10 V		15 V	-15 V	"	"		7.5 V	10 V		2.0 V	"	11	-1	1	nA
	"	10	2.0 .			-7.5 V		15 V	-15 V	"	66			7.5 V		2.0 V	44	12	-i	1	nA
	$I_{D(ON)}$	11	0.8 V		-7.5 V			15 V	-15 V	"	"		7.5 V				K6	3	-2	2	nA
	+I _{S(ON)}	12				-7.5 V		"	"	"	"			-7.5 V		0.8 V	K7	4	-2	2	nA
	I_{IL}	13	GND					"	"	"	66						None	1	-250	-0.1	μΑ
	$I_{\rm IL}$	14						"	"	"	66					GND	"	14	-250	-0.1	μΑ
	I _{IH}	15	5.0 V					"	"	"	66						"	1	-1	10	μΑ
	I _{IH}	16						tt	"	íí	££					5.0 V	"	14	-1	10	μΑ
	+l _{cc}	17	GND					"	"	"	66					GND	"	6		1.5	mA
	+l _{cc}	18	5.0 V					"	"	"	"					5.0 V	"	6	_	1.5	"
	-l _{cc}	19 20	GND 5.0 V					"		"						GND 5.0 V		/	-5 -5		
-	-l _{cc}	21	GND					££	"	66	"					GND	"	9	-5	4.5	"
	ıL L	22	5.0 V					"	"	"	66					5.0 V	"	9		4.5	"
	I _R	23	GND					"	"	"	66					GND	"	8	-2.2	7.0	"
	I _R	24	5.0 V					"	"	"	66					5.0 V	"	8	-2.2		"
2	R _{DS}	25	0.8 V		-10 mA			"	"	"	"		-7.5 V				"	3	-8.1		V <u>2</u> /
T _A =+125°C	R _{DS}	26				-10 mA		"	"	"	66			-7.5 V		0.8 V	"	4	-8.1		V <u>2</u> / V <u>2</u> /

TABLE III. Group A inspection for device type 01 – Continued.

								A	dapter pin	number 1	1/						Relays	Measured	Lim	nits	
								7.0	auptor piiri	_	<u> </u>						energized	pin no.			ĺ
Subgroup	Symbol	Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	•	Min	Max	1
			IN ₁	NC	S ₁	S_2	NC	+V _{CC}	-V _{CC}	V_R	V_L	NC	D_1	D_2	NC	IN ₂					Unit
2	I _{S(OFF)}	27	2.0 V		10 V			10 V	-20 V	GND	5.0 V		-10 V				None	3	-100	100	nA
$T_A = +125^{\circ}C$		28				10 V		10 V	-20 V	"	"			-10 V		2.0 V	"	4	"	"	"
		29	2.0 V		7.5 V			15 V	-15 V	"	"		7.5 V				"	3	"	"	66
		30				7.5 V		15 V	-15 V	ii .	"			7.5 V		2.0 V	"	4	"	"	"
	$I_{D(OFF)}$	31	2.0 V		-10 V			10 V	-20 V	"	"		10 V				"	11	"	"	"
		32	0.01/		7.5.4	-10 V		10 V	-20 V	"	"		7.5.7	10 V		2.0 V		12	"	"	
		33	2.0 V		-7.5 V	7.5.7		15 V	-15 V	"	"		7.5 V	7.5.7		001/		11	"	"	
-		34 35	0.8 V		-7.5 V	-7.5 V		15 V 15 V	-15 V -15 V	"	"		7.5 V	7.5 V		2.0 V	K6	12 3	-200	200	
	I _{D(ON)}	35 36	0.8 V		-7.5 V	-7.5 V		15 V	-15 V	"	"		7.5 V	-7.5 V		0.8 V	K7	3 4	-200 -200	200	"
	+I _{S(ON)}	37	GND			-7.5 V		"	44	"	**			-7.5 V		0.6 V	None	1	-250	-0.1	
	'IL I	38	OND					"	"	"	**					GND	"	14	-250	-0.1	μA
-	' L	39	5.0 V					íí	"	"	"					OND	"	14	-230	20	μΑ
	IH	40	3.0 V					"	"	"	"					5.0 V	44	14	-2 -2	20	μΑ
	Iн	40	GND					"	**	"	"					GND	44	6	-2	1.5	μA mA
	+lcc +lcc	42	5.0 V					"	"	"	**					5.0 V	"	6		1.5	mA
	-lcc	43	GND					"	"	"	"					GND	"	7	-5	1.0	mA
	-lcc	44	5.0 V					"	"	"	**					5.0 V	"	7	-5		mA
	lı	45	GND					"	"	"	"					GND	"	9	ŭ	4.5	mA
	اَّر	46	5.0 V					"	"	"	"					5.0 V	"	9		4.5	mA
	I _R	47	GND					"	"	"	"					GND	"	8	-2.2		mA
	I_R	48	5.0 V					"	"	"	"					5.0 V	"	8	-2.2		mA
3	R _{DS}	49	0.8 V		-10 mA			15 V	-15 V	"	"		-7.5 V				"	3	-7.8		V <u>2</u> /
T _A =-55°C	R _{DS}	50				-10 mA		15 V	-15 V	"	"			-7.5 V		0.8 V	"	4	-7.8		V <u>2</u> /
	I _{S(OFF)}	51	2.0 V		10 V	-		10 V	-20 V	"	"		-10 V				"	3	-100	100	nA
	"	52				10 V		10 V	-20 V	"	"			-10 V		2.0 V	"	4	"	"	"
	"	53	2.0 V		7.5 V			15 V	-15 V	"	"		-7.5 V				"	3	"	"	"
		54				7.5 V		15 V	-15 V					-7.5 V		2.0 V	"	4	1.6		

Subgroup

3

T_A =-55°C

Symbol

 $I_{D(OFF)}$

Test no.

55 56

2 NC

 IN_1

2.0 V

3 S₁

-10 V

-10 V

NC

10 NC 13 NC -V_{CC} -20 V -20 V +V_{CC} 10 V 10 V GND 5.0 V 10 V -100 100 None " 11 nA " 10 V 2.0 V 12 -100 100 15 V -15 V 7.5 V 11 -100 100

 IN_2

 D_1

 D_2

Relays Measured energized pin no.

Limits

Max

Unit

MIL-M-38510/111A

Min

TABLE III. Group A inspection for device type 01 – Continued.

Adapter pin number 1/

I _A =-55°C		96				-10 V		10 V	-20 V				10 V	2.0 V		12	-100	100	
		57	2.0 V		-7.5 V			15 V	-15 V	"	"	7.5 V			"	11	-100	100	"
		58				-7.5 V		15 V	-15 V	"	**		7.5 V	2.0 V	44	12	-100	100	**
	$I_{D(ON)}$	59	0.8 V		-7.5 V			15 V	-15 V	u	"	7.5 V			K6	3	-200	200	"
	+I _{S(ON)}	60				-7.5 V		15 V	-15 V	"	"		-7.5 V	0.8 V	K7	4	-200	200	"
	I _{IL}	61	GND					15 V	-15 V	"	**				None	1	-250	-0.1	μΑ
	I _{IL}	62						"	"	"	44			GND	"	14	-250	-0.1	μΑ
	I _{IH}	63	5.0 V	ĺ				"	"	"	"				"	1	-1	10	μA
	I _{IH}	64						"	"	"	"			5.0 V	"	14	-1	10	μA
	+l _{cc}	65	GND	ĺ				"	"	"	"			GND	"	6		2.5	mA
	+lcc	66	5.0 V					"	"	"	44			5.0 V	"	6		2.5	44
	-I _{cc}	67	GND	ĺ				"	íí.	ii.	"			GND	"	7	-8		"
	-I _{CC}	68	5.0 V					"	"	"	"			5.0 V	"	7	-8		"
	I∟	69	GND					"	"	"	"			GND	"	9		7	"
	ΙL	70	5.0 V					"	"	"	"			5.0 V	"	9		7	"
	I _R	71	GND					"	"	"	"			GND	"	8	-2		"
	I _R	72	5.0 V						"	"	"			5.0 V		8	-2		-
4	V _{CTE}	73	IN <u>3</u> /		GND	OND		"			"			11.10/	K2	11		20	mV _{p-p}
$T_A = 25^{\circ}C$	V _{CTE}	74				GND								IN <u>3</u> /	K3	12		20	mV _{p-p}
7	V _{CT} <u>7</u> /	75	0.8		IN <u>4</u> /		I , [15 V	-15 V	GND	5.0 V			2.0 V	K1	12		1.0	mV _{p-p}
$T_A = 25^{\circ}C$						$B_{CT} = -20 \text{ lo}$	og (V _{OUT} /\										60		dB
	V _{ISO}	76	2.0 V		IN <u>4</u> /	15.1.47		15 V	-15 V	GND	5.0 V			0.01/	K1	11		3.16	mV _{p-p}
	V_{ISO}	77			-10	IN <u>4</u> /		15 V	-15 V	GND	5.0 V			2.0 V	K1	12	50	3.16	mV _{p-p} dB
9		78	IN	 	IN UB	_{ISO} = -20 l	og (v _{out} /	15 V	-15 V	GND	5.0 V	OUT			K4	1 to11	50	150	
T _A = 25°C	t _{ON} t _{ON}	76 79	IIN		IIN	IN		15 V	-15 V	GIND "	3.0 V	001	OUT	IN	K5	14 to 12		150	ns ns
1A = 25 C		80	IN	+	IN	1111		"	"	"	"	OUT	001	IIN	K4	1 to 11		130	ns
	t _{OFF} t _{OFF}	81	114		IIN	IN		"	"	"	44	001	OUT	IN	K5	14 to 12		130	ns
10	t _{ON}	82	IN	t t	IN	11.4		"	ű	"	"	OUT	001	113	K4	1 to 12		300	ns
T _A = +125°C	t _{ON}	83	""			IN		"	"	"	"	001	OUT	IN	K5	14 to 12		300	"
1A = 1120 O	t _{OFF}	84	IN	t t	IN			"	ű	"	"	OUT			K4	1 to 11		200	"
	t _{OFF}	85				IN		"	"	"	44	001	OUT	IN	K5	14 to 12		200	**
11	t _{ON}	86	IN	†	IN			tt.	íí	"	tt.	OUT			K4	1 to11		150	66
T _A = -55°C	t _{ON}	87	"			IN		"	"	44	"		OUT	IN	K5	14 to12		150	"
., 55 5	t _{OFF}	88	IN		IN			íí.	tt.	"	££	OUT			K4	1 to 11		130	tt.
	t _{OFF}	89	""			IN		"	"	"	"		OUT	IN	K5	14 to 12		130	"

TABLE III. Group A inspection for device type 02.

								Ad	dapter pin	number	1/						Relays energized	Measured pin no.	Lim	nits	
Subgroup	Symbol	Test no.	1	2 NC	3	4	5	6	7	8	9	10 NC	11	12	13 NC	14			Min	Max	Unit
4		1	IN ₁	NC	S ₁	S ₂	NC	+V _{CC}	-V _{CC}	V _R	V _L	NC	D ₁	D ₂	NC	IN ₂			40.75		
7	R _{DS}	2	0.8 V		-10 mA	-10 mA		15 V 15 V	-15 V -15 V	GND "	5.0 V		-10 V	-10 V		0.8 V	None "	3 4	-10.75 -10.75		V <u>2</u> / V <u>2</u> /
T _A =+25°C	R _{DS}		0.01/		10 V	-10 IIIA			_	"	"		40.17	-10 V		U.0 V	"				
	I _{S(OFF)}	3 4	2.0 V		10 V	10 V		10 V 10 V	-20 V -20 V	"	"		-10 V	-10 V		2.0 V	44	3	-1 -1	1	nA "
	"	5	2.0 V		10 V	10 V		15 V	-20 V -15 V	"	"		-10 V	-10 V		2.0 V	"	3	-1 -1	1	"
	"	6	2.0 V		10 V	10 V		15 V	-15 V	"	"		-10 V	-10 V		2.0 V	44	4	-1 -1	1	"
	I _{D(OFF)}	7	2.0 V		-10 V	10 1		10 V	-20 V	"	"		10 V	10 1		2.0 1	11	11	-1	1	"
	*D(OFF)	8	2.0 1		10 1	-10 V		10 V	-20 V	"	"		10 1	10 V		2.0 V	"	12	-1	1	"
	44	9	2.0 V		-10 V			15 V	-15 V	"	"		10 V				44	11	-1	1	"
	"	10				-10 V		15 V	-15 V	"	"		-	10 V		2.0 V	"	12	-1	1	"
	I _{D(ON)+}	11	0.8 V		-10 V			15 V	-15 V	"	"		-10 V				K6	3	-2	2	"
	I _{S(ON)}	12				-10 V		"	"	"	"			-10 V		0.8 V	K7	4	-2	2	"
	I _{IL}	13	GND					"	"	"	"						None	1	-250	-0.1	μΑ
	I _{IL}	14						"	"	"	"					GND	44	14	-250	-0.1	μA
	l _{IH}	15	5.0 V					"	"	"	"						"	1	-1	10	μA
	I _{IH}	16						"	"	"	"					5.0 V	"	14	-1	10	μA
	+lcc	17	GND					"	"	"	"					GND	"	6		1.5	mA
	+l _{cc}	18	5.0 V					"	"	"	"					5.0 V	44	6		1.5	"
	-l _{cc}	19	GND					"	"	"	"					GND	44	7	-5		er.
	-l _{cc}	20	5.0 V					"	íí.	"	"					5.0 V	"	7	-5		"
	ΙL	21	GND					"	"	"	"					GND	"	9		4.5	66
	lL	22	5.0 V					"	"	"	"					5.0 V	"	9		4.5	"
	I _R	23	GND					"	"	"	"					GND	"	8	-2.2		"
	I _R	24	5.0 V													5.0 V		8	-2.2		
2	R _{DS}	25	0.8 V		-10 mA	40 4		15 V	-15 V	"	"		-10 V	40.17		0.01	"	3	-11.50		V <u>2</u> /
T _A =+125°C	R _{DS}	26			ļ	-10 mA		15 V	-15 V					-10 V		0.8 V		4	-11.50		V <u>2</u> /
	I _{S(OFF)}	27	2.0 V		10 V	40.14		10 V	-20 V	GND "	5.0 V		-10 V	40.17			None	3	-100	100	nA
		28	0.01/		40.17	10 V		10 V	-20 V		"		40.17	-10 V		2.0 V		4	-100	100	nA
		29	2.0 V		10 V			15 V	-15 V				-10 V					3	-100	100	nA

TABLE III. Group A inspection for device type 02 – Continued.

								A	dapter pin				_				Relays energized	Measured pin no.		nits	
Subgroup	Symbol	Test no.	1 IN₁	2 NC	3 S₁	4 S ₂	5 NC	6 +V _{CC}	7 -V _{CC}	8 V _R	9 V ₁	10 NC	11 D₁	12 D ₂	13 NC	14 IN ₂			Min	Max	Unit
2	I _{S(OFF)}	30				10 V		15 V	-15 V	GND	5.0 V			-10 V		2.0 V	None	4	-100	100	nA
T _A =+125°C																					
1	I _{D(OFF)}	31	2.0 V		-10 V			10 V	-20 V	66	"		10 V				"	11	44	"	"
	,	32				-10 V		10 V	-20 V	"	"			10 V		2.0 V	"	12	"	"	"
		33	2.0 V		-10 V			15 V	-15 V	"	"		10 V				"	11	"	"	"
		34				-10 V		15 V	-15 V	"	"			10 V		2.0 V	"	12	"	66	íí
	$I_{D(ON)+}$	35	0.8 V		-10 V			15 V	-15 V	"	"		-10 V				K6	3	-200	200	"
	I _{S(ON)}	36				-10 V		"	"	"	"			-10 V		0.8 V	K7	4	-200	200	
	I₁∟	37	GND					"			"						None	1	-250	-0.1	μΑ
	I _{IL}	38														GND		14	-250	-0.1	μΑ
	I _{IH}	39	5.0 V					"	"	"	"						"	1	-2	20	μΑ
	I _{IH}	40						"	"	"	66					5.0 V	"	14	-2	20	μΑ
	+l _{cc}	41	GND					"	"	"	"					GND	"	6		1.5	mA
	+l _{cc}	42	5.0 V					"	"	"	"					5.0 V	"	6		1.5	mA
	-lcc	43	GND					"	"	"	"					GND	"	7	-5		mA
	-l _{cc}	44	5.0 V					-	"		"					5.0 V		7	-5		mA
	l _L	45	GND					"	"	"	"					GND	"	9		4.5	mA
	l _L	46	5.0 V					"	"	"	"					5.0 V	"	9		4.5	mA
	I _R	47	GND					"			"					GND	"	8	-2.2		mA
	I _R	48	5.0 V		-10 mA			15 V	45.1/	"	"		-10 V			5.0 V	"	8	-2.2 -10.75		mA
3	R_{DS} R_{DS}	49 50	0.8 V		-10 MA	-10 mA		15 V 15 V	-15 V -15 V	"	"		-10 V	-10 V		0.8 V	"	3 4	-10.75		V <u>2</u> / V <u>2</u> /
T _A =-55°C			2.0 V		10 V	-10 IIIA			-13 V	"	"		-10 V	-10 V		U.0 V	"			400	
	I _{S(OFF)}	51 52	2.0 V		10 V	10 V		10 V 10 V	-20 V -20 V	"	"		-10 V	-10 V		2.0 V	"	3 4	-100	100	nA "
	"	52	2.0 V		10 V	10 0		10 V	-20 V -15 V	"	66		-10 V	-10 V		2.0 V	"	3	44	"	"
	"	54	2.0 V		10 0	10 V		15 V	-15 V	"	"		-10 V	-10 V		2.0 V	"	4	44	**	"
	I _{D(OFF)}	55	2.0 V		-10 V	10 V		10 V	-20 V	GND	5.0 V		10 V	10 V		2.0 V	"	11	"	"	"
	ID(OFF)	56	2.0 v		10 0	-10 V		10 V	-20 V	"	3.0 V		10 4	10 V		2.0 V	44	12	44	"	"
		57	2.0 V		-10 V			15 V	-15 V	"	"		10 V	.5 *			"	11	"	"	"
		58				-10 V		15 V	-15 V	"	"			10 V		2.0 V	"	12	44	"	"

TABLE III. Group A inspection for device type 02 – Continued.

								A	dapter pin	number	1/						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 NC	3 S ₁	4 S ₂	5 NC	6 +V _{CC}	7 -V _{CC}	8 V _R	9 Vı	10 NC	11 D ₁	12 D ₂	13 NC	14 IN ₂			Min	Max	Unit
3	I _{D(ON)+}	59	0.8 V		-10 V			15 V	-15 V	GND	5.0 V		-10 V				K6	3	-200	200	nA
T _A =-55°C	I _{D(ON)+}	60				-10 V		15 V	-15 V	"	"			-10 V		0.8 V	K7	4	-200	200	nA
	I _{IL}	61	GND					"	"	"	"						None	1	-250	-0.1	μΑ
	I _{IL}	62						"	"	"	"					GND	"	14	-250	-0.1	μA
	I _{IH}	63	5.0 V					tt.	"	tt.	tt						"	1	-1	10	μΑ
	I _{IH}	64						"	"	"	"					5.0 V	"	14	-1	10	μA
	+l _{cc}	65	GND					tt.	ii.	tt.	tt					GND	"	6		2.5	mA
	+l _{cc}	66	5.0 V					"	"	"	"					5.0 V	"	6		2.5	"
	-I _{cc}	67	GND					"	"	"	"					GND	"	7	-8		"
	-l _{cc}	68	5.0 V					"	"	"	"					5.0 V	"	7	-8		"
	IL.	69 70	GND								"					GND 5.0 V	"	9		7	"
	<u> </u>	70	5.0 V GND					"	"	"	"			1		GND	"	8	-2	- /	"
	I _R	72	5.0 V					"	44	"	**					5.0 V	"	8	-2 -2		44
4	V _{CTE}	73	IN <u>3</u> /		GND			"	"	"	"					3.0 V	K2	11	-2	20	mV _{p-p}
T _A = 25°C	V _{CTE}	74			0.15	GND		"	"	"	66					IN 3/	K3	12		20	mV _{p-p}
7	V _{CT} <u>7</u> /	75	0.8		IN 4/			"	"	"	"					2.0 V	K1	12		1.0	m _{Vp-p}
$T_A = 25^{\circ}C$					dE	$B_{CT} = -20 \text{ kg}$	og (V _{OUT} /	,											60		dB
	V_{ISO}	76	2.0 V		IN <u>4</u> /			15 V	-15 V	GND	5.0 V						K1	11		3.16	mV_{p-p}
	V_{ISO}	77			dE	IN <u>4</u> / 3 _{ISO} = -20 I	 og (V _{оит} /	15 V /V _{IN})	-15 V	GND	5.0 V					2.0 V	K1	12	50	3.16	mV _{p-p} dB
9	t _{ON}	78	IN		IN			15 V	-15 V	GND	5.0 V		OUT				K4	1 to11		250	ns
$T_A = 25^{\circ}C$	t _{ON}	79				IN		"	"	"	"			OUT		IN	K5	14 to12		250	"
	t _{OFF}	80	IN		IN			"	"	"	"		OUT				K4	1 to 11		130	"
	t _{OFF}	81				IN		"	"	"	"			OUT		IN	K5	14 to 12		130	"
10	ton	82	IN		IN			"	"	"	"		OUT			l	K4	1 to11		350	"
$\Gamma_A = +125^{\circ}C$	t _{ON}	83				IN		-		-	-			OUT		IN	K5	14 to12		350	
	t _{OFF}	84 85	IN		IN	IN		"	"	"	"		OUT	OUT		IN	K4 K5	1 to 11 14 to 12		200 200	"
11	t _{ON}	86	IN		IN	IIN		"	"	"	íí.		OUT	001		IIN	K4	1 to 12		250	"
T _A = -55°C	t _{ON}	87	"*		"	IN		"	"	"	"			OUT		IN	K5	14 to12		250	"
	t _{OFF}	88	IN		IN			"	"	"	"		OUT				K4	1 to 11		130	"
	t _{OFF}	89				IN		"	"	"	"			OUT		IN	K5	14 to 12		130	"

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TABLE III. Group A inspection for device type 03.

								Ad	dapter pin	number <u>′</u>	_/						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S₃	4 S ₂	5 S ₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 V _L	10 D ₁	11 D₃	12 D ₂	13 D ₄	14 IN ₂			Min	Max	Unit
1	R _{DS}	1	2.0 V	-10 mA				15 V	-15 V	GND	5.0 V	-7.5 V					None	2	-7.8		V <u>2</u> / V <u>2</u> /
T _A =+25°C		2	2.0 V		-10 mA			"	"	"	"		-7.5 V				66	3	-7.8		V <u>2</u> /
		3				-10 mA		"	"	"	"			-7.5 V		2.0 V	66	4	-7.8		V <u>2</u> /
		4					-10 mA	"	"	"	66				-7.5 V	2.0 V	"	5	-7.8		V <u>2</u> /
	I _{S(OFF)}	5	0.8 V	10 V				10 V	-20 V	"	66	-10 V					"	2	-1	1	nA
		6	0.8 V		10 V			"	"	"	"		-10 V				"	3	**	"	"
		7				10 V				"				-10 V		0.8 V	"	4		"	"
		8	0.01/	7.5.7			10 V	45.1		"	"	7.5.7			-10 V	0.8 V	"	5	"	"	"
		9	0.8 V	7.5 V	751			15 V	-15 V	"	"	-7.5 V	7.5.7						"	"	"
		10 11	0.8 V		7.5 V	7.5 V		"	"	"	"		-7.5 V	-7.5 V		0.8 V	"	3	44	44	"
		12				7.5 V	7.5 V	"	"	"	"			-7.5 V	-7.5 V	0.8 V 0.8 V	66	5	"	"	"
-	I	13	0.8 V	-10 V			7.5 V	10 V	-20 V	"	"	10 V			-7.5 V	0.6 V	"	10	**	"	"
	I _{D(OFF)}	14	0.8 V	10 V	-10 V			"	20 V	"	"	10 0	10 V				44	11	**	**	"
		15	0.0 1			-10 V		"	"	"	66		10 1	10 V		0.8 V	66	12	66	66	"
		16					-10 V	"	"	"	"				10 V	0.8 V	"	13	"	"	"
		17	0.8 V	-7.5 V				15 V	-15 V	"	"	7.5 V					66	10	**	66	"
		18	0.8 V		-7.5 V			"	"	"	"		7.5 V				"	11	"	"	"
		19				-7.5 V		"	"	"	"			7.5 V		0.8 V	"	12	"	"	44
		20					-7.5 V	"	"	"	"				7.5 V	0.8 V	££	13	"	"	"
	I _{D(ON)+}	21	2.0 V	-7.5 V				"	"	"	"	-7.5 V					K10	2	-2	2	"
	I _{S(ON)}	22	2.0 V		-7.5 V			"	"	"	"		-7.5 V				K11	3	-2	2	"
	"	23				-7.5 V		"	"	"	"			-7.5 V		2.0 V	K12	4	-2	2	"
		24					-7.5 V	-	"	"					-7.5 V	2.0 V	K13	5	-2	2	-
	I _{IL}	25	GND					"		-	"						None	1	-250	-0.1	μΑ
	I _{IL}	26						"	"	"	"					GND	íí.	14	-250	-0.1	μΑ

TABLE III. Group A inspection for device type 03 – Continued.

									dapter pin	number <u>r</u>							Relays energized	Measured pin no.		nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S₃	4 S ₂	5 S₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 V _L	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂			Min	Max	Unit
1	I _{IH}	27	5.0 V					15 V	-15 V	GND	5.0 V						None	1	-1	10	μΑ
T _A =+25°C	I _{IH}	28						"	"	"	"					5.0 V	"	14	-1	10	μA
	+l _{cc}	29	GND					"	"	"	"					GND	"	6		3	mΑ
	+lcc	30	5.0 V					"	44	"	66					5.0 V	"	6		0.1	"
	-I _{cc}	31	GND					"	"	ii.	"					GND	"	7	-5.5		"
	-I _{cc}	32	5.0 V					"	"	"	"					5.0 V	44	7	-4		"
	L	33	GND					"	"	"	"					GND	"	9		4.5	"
	ΙL	34	5.0 V					"	"	"	"					5.0 V	"	9		4.5	"
	I _R	35	GND					"	"	"	66					GND	"	8	-2.2		"
	I _R	36	5.0 V					"	"	"	"					5.0 V	"	8	-2.2		"
2	R_{DS}	37	2.0 V	-10 mA				"	"	"	"	-7.5 V					"	2	-8.1		V <u>2/</u> V <u>2/</u> V <u>2/</u> V <u>2/</u>
T _A =+125°C		38	2.0 V		-10 mA								-7.5 V					3	-8.1		V <u>2</u> /
		39				-10 mA		"	"	"	"			-7.5 V		2.0 V	"	4	-8.1		V <u>2</u> /
		40	2.21/	10.17			-10 mA		-		"	40.14			-7.5 V	2.0 V		5	-8.1	400	
	I _{S(OFF)}	41	0.8 V	10 V	10 V			10 V	-20 V		"	-10 V	-10 V				"	2	-100	100	nA "
		42 43	0.8 V		10 V	10 V		66	"	"	66		-10 V	-10 V		0.8 V	"	3	"	"	"
		43				10 V	10 V	"	"	"	"			-10 V	-10 V	0.8 V 0.8 V	44	5	"	"	"
		45	0.8 V	7.5 V			10 V	15 V	-15 V	"	66	-7.5 V			-10 V	0.6 V	"	2	66	66	"
		46	0.8 V	7.5 V	7.5 V			15 V	" "	"	**	7.5 V	-7.5 V				"	3	66	44	"
		47	0.0 .			7.5 V		"	"	"	"			-7.5 V		0.8 V	"	4	"	"	"
		48				-	7.5 V	"	"	"	"			-	-7.5 V	0.8 V	44	5	"	"	"
	I _{D(OFF)}	49	0.8 V	-10 V				10 V	-20 V	"	"	10 V					"	10	tt	66	"
	_(0.1)	50	0.8 V		-10 V			"	44	"	66		10 V				"	11	44	"	"
		51				-10 V		"	"	"	66			10 V		0.8 V	"	12	**	"	"
		52					-10 V	"	"	"	"				10 V	0.8 V	44	13	"	"	"
		53	0.8 V	-7.5 V				15 V	-15 V	"	66	7.5 V					"	10	66	44	"
		54	0.8 V		-7.5 V			"	"	"	"		7.5 V				"	11	"	"	"
		55				-7.5 V		"	"	"	"			7.5 V		0.8 V	"	12	"	66	"
		56					-7.5 V								7.5 V	0.8 V		13	••		

TABLE III. Group A inspection for device type 03 – Continued.

								Ad	dapter pin	number <u>´</u>	<u> </u>						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1 IN₁	2 S ₁	3 S₃	4 S ₂	5 S₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 Vı	10 D₁	11 D ₃	12 D ₂	13 D₄	14 IN ₂			Min	Max	Unit
2	I _{D(ON)+}	57	2.0 V	-7.5 V	- 3	02	04	15 V	-15 V	GND	5.0 V	-7.5 V		D ₂	D ₄	1112	K10	2	-200	200	nA
T _A =+125°C	I _{S(ON)}	58	2. 0 V		-7.5 V			"	"	"	"		-7.5 V				K11	3	-200	200	nA
		59				-7.5 V		"	"	"	"			-7.5 V		2.0 V	K12	4	-200	200	nA
		60					-7.5 V	"	"	"	"				-7.5 V	2.0 V	K13	5	-200	200	nA
	I _{IL}	61	GND					"	"	"	66						None	1	-250	-0.1	μΑ
	I₁∟	62						"	"	"	"					GND	"	14	-250	-0.1	μΑ
	I _{IH}	63	5.0 V					ű	"	íí	"						"	1	-2	20	μА
	I _{IH}	64						"	"	"	"					5.0 V	"	14	-2	20	μA
	+lcc	65	GND					tt	"	íí.	"					GND	"	6		3	mΑ
	+lcc	66	5.0 V					"	"	"	"					5.0 V	"	6		0.1	mA
	-I _{CC}	67	GND					"	"	"	"					GND	"	7	-5.5		mA
	-I _{CC}	68	5.0 V					"	44	"	"					5.0 V	"	7	-4		mA
	ΙL	69	GND					ii.	tt.	"	"					GND	"	9		4.5	mA
	l∟	70	5.0 V					"	"	"	"					5.0 V	"	9		4.5	mA
	I _R	71	GND					tt	"	"	66					GND	44	8	-2.2		mΑ
	I_R	72	5.0 V					"	"	"	"					5.0 V	"	8	-2.2		mA
3	R_{DS}	73	2.0 V	-10 mA				15 V	-15 V	GND	5.0 V	-7.5 V					"	2	-7.8		V <u>2</u> / V <u>2</u> /
$T_A = -55^{\circ}C$		74	2.0 V		-10 mA			"	"	"	"		-7.5 V				"	3	-7.8		V <u>2</u> /
		75				-10 mA		"	"	"	"			-7.5 V		2.0 V	"	4	-7.8		V <u>2</u> /
		76					-10 mA	"	"	"	"				-7.5 V	2.0 V	"	5	-7.8		V <u>2</u> /
	I _{S(OFF)}	77	0.8 V	10 V				10 V	-20 V	"	"	-10 V					"	2	-100	100	nA
		78	0.8 V		10 V			"	"	"	"		-10 V				"	3	"	"	"
		79				10 V		"	"	"	"			-10 V		0.8 V	"	4	"	"	"
		80	001/	751/			10 V			"	"	7.51			-10 V	0.8 V	"	5	"	"	"
		81	0.8 V	7.5 V	7.5.7			15 V	-15 V	"	"	-7.5 V	7.5.7				"	2	"	"	"
		82	0.8 V		7.5 V	7.5.7				"			-7.5 V	751/		0.01/		3		"	
		83 84				7.5 V	7.5 V	"	"	"	"			-7.5 V	751/	0.8 V 0.8 V	"	4 5	"	"	"
		64		ļ	L		7.5 V						ļ	L	-7.5 V	U.8 V	ļ	5			

TABLE III. Group A inspection for device type 03 – Continued.

								Ad	dapter pin	number <u></u>	1/						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S₃	4 S ₂	5 S ₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 V _L	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂			Min	Max	Unit
3 T _A = -55°C	I _{D(OFF)}	85 86	0.8 V 0.8 V	-10 V	-10 V			10 V	-20 V	GND "	5.0 V	10 V	10 V				None "	10 11	-100 "	100	nA "
., 55 5		87 88				-10 V	-10 V	"	"	"	"			10 V	10 V	0.8 V 0.8 V	"	12 13	"	"	"
		89	0.8 V 0.8 V	-7.5 V	-7.5 V		-10 V	15 V	-15 V	"	"	7.5 V	7.5 V		10 V	0.0 V	"	10 11	"	"	"
		90 91	0.8 V		-7.5 V	-7.5 V		"	"	"	"		7.5 V	7.5 V		0.8 V	"	12	"	"	"
		92 93	2.0 V	-7.5 V			-7.5 V	"	"	"	"	-7.5 V			7.5 V	0.8 V	K10	13 2	-200	200	"
	I _{D(ON)+} I _{S(ON)}	93 94	2.0 V 2.0 V	-7.5 V	-7.5 V			"	"	"	"	-7.5 V	-7.5 V				K10	3	-200	200	"
	"	95				-7.5 V		"	"	"	"			-7.5 V		2.0 V	K12	4	"	"	"
	"	96					-7.5 V	"	"	"	"				-7.5 V	2.0 V	K13	5	"	"	"
	l <u>լ∟</u> L.	97 98	GND					"	"	"	"					GND	None "	1 14	-250 -250	-0.1 -0.1	μΑ
	IIL I	99	5.0 V					"	"	"	"					GIND	66	14	-230	10	μΑ
	ин Ин	100	3.0 V					"	44	44	44					5.0 V	"	14	-1 -1	10	μA μA
	+l _{CC}	101	GND					"	"	"	"					GND	ű	6		5	mA
	+l _{cc}	102	5.0 V					"	"	"	"					5.0 V	"	6		1.7	mA
	-l _{cc} -l _{cc}	103 104	GND 5.0 V					"	"	"	"					GND 5.0 V	"	7	-8.8 -6.4		mA mA
	I _I	105	GND					"	"	"	"					GND	tt	9	-0.4	7	mA
	الّ	106	5.0 V					"	"	"	"					5.0 V	66	9		7	mA
	I _R	107 108	GND 5.0 V					"	"	"	"					GND 5.0 V	"	8 8	-2 -2		mA mA
4	V _{CTE}	108		GND			-	"	"	"	"			-		5.0 V	K2	10	-2	20	mV _{p-p}
T _A =+25°C	V CTE	110	IN <u>3</u> / IN <u>3</u> /	GIVD	GND			"	"	"	"						K4	11		20	""
1 200		111	_			GND		"	"	"	"					IN <u>3</u> /	K5	12		20	"
		112					GND	ű	"	íí	"					IN <u>3</u> /	K3	13		20	"

TABLE III. Group A inspection for device type 03 – Continued.

								Ad	dapter pin	number	<u>1</u> /						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14			Min	Max	1
			IN ₁	S ₁	S ₃	S ₂	S ₄	+V _{CC}	-V _{CC}	V_R	V_L	D_1	D ₃	D_2	D_4	IN ₂					Unit
7	V _{CT} <u>7</u> / V _{CT} <u>7</u> /	113	2.0 V	<u>5</u> /	<u>5</u> /			15 V	-15 V	GND	5.0 V						K1	12 or 13		1.0	mV_{p-p}
T _A =+25°C	V _{CT} <u>7</u> /	114				<u>6</u> /	<u>6</u> /	15 V	-15 V	GND	5.0 V					2.0 V	K1	10 or 11		1.0	mV_{p-p}
							dB _{CT} =	-20 log (\											60		dB
	V_{ISO}	115	0.8 V	IN <u>4</u> /				15 V	-15 V	GND	5.0 V						K1	10		3.16	mV_{p-p}
		116	0.8 V		IN <u>4</u> /			"	"	"	**						K1	11		3.16	"
		117				IN <u>4</u> /		"		"	"					0.8 V	K1	12		3.16	"
		118					IN <u>4</u> /									0.8 V	K1	13		3.16	
							dB _{ISO} =	= -20 log (\											50		dB
9	t_{ON}	119	IN	IN				15 V	-15 V	GND	5.0 V	OUT	O				K6	2 to 10		150	ns "
T _A =+25°C		120	IN		IN			"					OUT				K8	3 to 11		150	
		121				IN		"						OUT		IN	K9	4 to 12		150	"
		122					IN	"	"		"				OUT	IN	K7	5 to 13		150	
	t _{OFF}	123	IN	IN				"				OUT					K6	2 to 10		130	ns "
		124	IN		IN			"					OUT	OUT			K8	3 to 11		130	
		125				IN	INI	"	"		"			OUT	OUT	IN	K9	4 to 12		130	"
40		126 127	INI	INI	-		IN	"	"	"	"	OUT			OUT	IN	K7	5 to 13		130	"
10	t_{ON}	127	IN IN	IN	IN			"	"	"	"	001	OUT				K6 K8	2 to 10 3 to 11		300 300	44
T _A =+125°C			IIN		IIN	INI		"	"	"			001	OUT		INI					"
		129				IN	INI	"	"	"	"			OUT	OUT	IN IN	K9	4 to 12		300	"
	4	130 131	INI	INI	-		IN	"	"	"	"	OUT			OUT	IIN	K7 K6	5 to 13		300 200	"
	t_{OFF}	132	IN IN	IN	IN			"	"	"	"	001	OUT				K8	2 to 10 3 to 11		200	"
		132	IIN		IIN	IN		"	"	"	"		001	OUT		IN	K9	4 to 12		200	"
		134				IIN	IN	"	"	"	"			001	OUT	IN	K7	5 to 13		200	"
11	+	135	IN	IN	IN		IIN	"	"	"	"	OUT			001	IIN	K6	2 to 10		150	"
T _A =-55°C	t_{ON}	136	IN	IIN	IN			"	"	"	66	001	OUT				K8	3 to 11		150	"
1 A =-33 C		137	""		" "	IN		"	"	"	"		001	OUT		IN	K9	4 to 12		150	"
		138				IIN	IN	"	"	"	66			001	OUT	IN	K7	5 to 13		150	"
	t _{OFF}	139	IN	IN	 		IIN	tt.	íí.	tt.	"	OUT			001	IIN	K6	2 to 10		130	"
	OFF	140	IN	II V	IN			"	"	"	66	001	OUT				K8	3 to 11		130	**
		141			"*	IN		"	"	"	"		001	OUT		IN	K9	4 to 12		130	"
		142					IN	"	"	"	66			001	OUT	İN	K7	5 to 13		130	"

TABLE III. Group A inspection for device type 04

								Ad	dapter pin	number <u></u>	<u> </u> /						Relays energized	Measured pin no.	Lim	nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S ₃	4 S ₂	5 S₄	6 +V _{CC}	7 -V _{CC}	8 V _R	5 6	10 D₁	11 D ₃	12 D ₂	13 D₄	14 IN ₂			Min	Max	Unit
1 T _A =+25°C	R _{DS}	1 2	2.0 V 2.0 V	-10 mA	-10 mA		04	15 V	-15 V	GND "	5.0 V	-10 V	-10 V	52	- 54	11 12	None "	2 3	-10.75 -10.75		V <u>2</u> / V <u>2</u> /
1 A = +25 C		3	2.0 V		-1011114	-10 mA	40 4	"	"	"	"		-10 V	-10 V	40.1/	2.0 V	"	4	-10.75		V <u>2</u> /
	I _{S(OFF)}	<u>4</u> 5	0.8 V	10 V			-10 mA	10 V	-20 V	"	"	-10 V			-10 V	2.0 V	ű	5 2	-10.75 -1	1	V <u>2</u> / nA
	IS(OFF)	6	0.8 V	10 V	10 V	40.17		" "	-20 V	"	"	-10 V	-10 V	40.17		0.01/	"	3	"	"	"
		8				10 V	10 V	"	"	"	"			-10 V	-10 V	0.8 V 0.8 V	"	5	"	"	"
		9	0.8 V	10 V			10 V	15 V	-15 V	"	66	-10 V			-10 V	0.6 V	"	2	66	"	"
		10	0.8 V		10 V			"	"	"	"	-	-10 V				"	3	"	"	"
		11				10 V	40.17	"	"	"	"			-10 V	40.17	0.8 V	"	4	"	"	"
		12 13	0.8 V	-10 V			10 V	10 V	-20 V	"	"	10 V			-10 V	0.8 V	"	5	"	"	
	I _{D(OFF)}	14	0.8 V 0.8 V	-10 V	-10 V			10 V	-20 V	"	66	10 V	10 V				"	10 11	66	"	"
		15	0.0 1		10 1	-10 V		"	"	"	"		10 1	10 V		0.8 V	"	12	**	"	44
		16					-10 V	"	"	"	66				10 V	0.8 V	44	13	66	"	"
		17	0.8 V	-10 V	40.1/			15 V	-15 V	"	"	10 V	40.17				"	10	"	"	"
		18 19	0.8 V		-10 V	-10 V		"	"	"	"		10 V	10 V		0.8 V	"	11 12	"	"	"
		20				-10 V	-10 V	"	"	"	"			10 0	10 V	0.8 V	"	13	"	"	"
	I _{D(ON)+}	21	2.0 V	-10 V				"	"	"	"	-10 V					K10	2	-2	2	"
	I _{S(ON)}	22	2.0 V		-10 V	40.14		"	"	"	"		-10 V	40.14			K11	3	-2	2	"
	"	23 24				-10 V	-10 V	"	"	"	"			-10 V	-10 V	2.0 V 2.0 V	K12 K13	4 5	-2 -2	2	"
	III	25	GND				-10 V	"	"	"	"				-10 V	2.0 V	None	1	-250	-0.1	μΑ
	I _{IL}	26						"	"	"	"					GND	"	14	-250	-0.1	μΑ
	I _{IH}	27	5.0 V					tt	"	"	££						"	1	-1	10	μΑ
	I _{IH}	28						ű	"	"	"					5.0 V	"	14	-1	10	μA

TABLE III. Group A inspection for device type 04 – Continued.

								Ad	dapter pin	number <u>1</u>	<u>l</u> /						Relays energized	Measured pin no.	Lim		
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S₃	4 S ₂	5 S₄	6 +V _{cc}	7 -V _{CC}	8 V _R	9 V _L	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂			Min	Max	Unit
1 T _A =+25°C	+l _{CC} +l _{CC}	29 30	GND 5.0 V					15 V	-15 V	GND "	5.0 V					GND 5.0 V	None "	6 6		3 0.1	mA "
1.4 .20 0	-l _{cc}	31 32	GND 5.0 V					"	"	"	££					GND 5.0 V	"	7	-5.5 -4	-	"
	I _L	33 34	GND 5.0 V					"	"	"	66					GND 5.0 V	"	9	-	4.5 4.5	"
	I _R	35 36	GND 5.0 V					"	"	"	££					GND 5.0 V	"	8	-2.2 -2.2		"
2 T _A =+125°C	R _{DS}	37 38 39	2.0 V 2.0 V	-10 mA	-10 mA	-10 mA		"	"	"	ee ee	-10 V	-10 V	-10 V		2.0 V	"	2 3 4	-11.50 -11.50 -11.50		V 2/ V 2/ V 2/ V 2/
	I _{S(OFF)}	40 41	0.8 V	10 V			-10 mA	10 V	-20 V	u	"	-10 V			-10 V	2.0 V	"	5 2	-11.50 -100	100	nA
		42 43 44	0.8 V		10 V	10 V	10 V	"	"	"	"		-10 V	-10 V	-10 V	0.8 V 0.8 V	"	3 4 5	"	"	"
		45 46	0.8 V 0.8 V	10 V	10 V		10 V	15 V "	-15 V "	"	££	-10 V	-10 V		-10 V	0.0 V	"	2	"	"	"
		47 48				10 V	10 V	"	"	"	"			-10 V	-10 V	0.8 V 0.8 V	"	4 5	"	"	"
	$I_{D(OFF)}$	49 50	0.8 V 0.8 V	-10 V	-10 V			10 V "	-20 V	"	"	10 V	10 V				"	10 11	"	"	"
		51 52				-10 V	-10 V	"	"	"	66			10 V	10 V	0.8 V 0.8 V	"	12 13	"	"	"
		53 54	0.8 V 0.8 V	-10 V	-10 V	40.17		15 V "	-15 V	"	66 66	10 V	10 V	40.1/		0.01	"	10 11	"	"	"
		55 56				-10 V	-10 V	"	"	"	"			10 V	10 V	0.8 V 0.8 V	"	12 13	"	"	"

TABLE III. Group A inspection for device type 04 – Continued.

								Ad	dapter pin	number <u>r</u>	<u>1</u> /						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14			Min	Max	1
			IN ₁	S ₁	S ₃	S ₂	S ₄	+V _{CC}	-V _{CC}	V_R	V_L	D ₁	D_3	D_2	D_4	IN ₂					Unit
2	I _{D(ON)+}	57	2.0 V	-10 V	40.14			15 V	-15 V	GND	5.0 V	-10 V	40.14				K10	2	-200	200	nA
T _A =+125°C	I _{S(ON)}	58	2. 0 V		-10 V	40.14							-10 V	40.14			K11	3	-200	200	nA
		59				-10 V	40.17	"						-10 V	40.17	2.0 V	K12	4	-200	200	nA
		60	ONID				-10 V								-10 V	2.0 V	K13	5	-200	200	nA
	IIL.	61	GND					"	"	"	"					0110	None "	1	-250	-0.1	μΑ
	IIL	62														GND		14	-250	-0.1	μΑ
	I _{IH}	63	5.0 V					"		"	"						"	1	-2	20	μΑ
	I _{IH}	64						"	íí	"	**					5.0 V	"	14	-2	20	μΑ
	+l _{cc}	65	GND					"	"	"	"					GND	"	6		3	mA
	+l _{cc}	66	5.0 V					"	"	"	**					5.0 V	££	6		0.1	mA
	-l _{cc}	67	GND					"	"	"	"					GND	"	7	-5.5		mA
	-l _{cc}	68	5.0 V						"							5.0 V		7	-4		mA
	ļ∟	69	GND					"	"	"	"					GND	"	9		4.5	mA
	<u>lL</u>	70	5.0 V							"						5.0 V	"	9		4.5	mA
	I _R	71	GND					"								GND	"	8	-2.2		mA
2	I _R	72	5.0 V	-10 mA				45.17	45.1/	GND		-10 V		1		5.0 V	"	8	-2.2		mA
3	R_{DS}	73 74	2.0 V 2.0 V	-10 MA	-10 mA			15 V "	-15 V	GND "	5.0 V	-10 V	-10 V				44	2 3	-10.75 -10.75		V <u>2</u> / V <u>2</u> /
$T_A = -55^{\circ}C$		74 75	2.0 V		- 10 IIIA	-10 mA		"	"	"			-10 V	-10 V		2.0 V	"	-	-10.75		V <u>2</u> /
		75 76				-10 MA	-10 mA	"	"	44	**			-10 V	-10 V	2.0 V 2.0 V	66	4 5	-10.75		V <u>2</u> / V 2/
	I _{S(OFF)}	77	0.8 V	10 V			-101117	10 V	-20 V	"	66	-10 V			-10 V	2.0 V	"	2	-10.73	100	nA
	IS(OFF)	78	0.8 V	10 V	10 V			"	-20 V	"	**	-10 V	-10 V				"	3	-100	"	"
		79	0.0 V		10 4	10 V		"	"	"	**		10 V	-10 V		0.8 V	44	4	"	"	"
		80					10 V	"	"	"	"			10 0	-10 V	0.8 V	"	5	"	"	"
		81	0.8 V	10 V				15 V	-15 V	44	**	-10 V					"	2	"	"	"
		82	0.8 V		10 V			"	"	"	66	-	-10 V				44	3	"	"	"
		83				10 V		"	"	"	"			-10 V		0.8 V	66	4	"	"	"
		84					10 V	ű	"	"	"				-10 V	0.8 V	"	5	"	44	"

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TABLE III. Group A inspection for device type 04 – Continued.

								A	dapter pin	number <u>r</u>	<u>I</u> /						Relays energized	Measured pin no.	Lim	nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S₃	4 S ₂	5 S ₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 V _L	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂			Min	Max	Unit
3	I _{D(OFF)}	85	0.8 V	-10 V	40.14			10 V	-20 V	GND "	5.0 V	10 V	40.14				None	10	-100	100	nA "
$T_A = -55^{\circ}C$		86	0.8 V		-10 V								10 V					11	"		
		87				-10 V	40.14	"	"	"	"			10 V	40.14	0.8 V	"	12	"	"	"
		88	0.01/	40.17			-10 V					40.17			10 V	0.8 V		13	"	"	
		89 90	0.8 V 0.8 V	-10 V	-10 V			15 V	-15 V	"	"	10 V	10 V				"	10 11	"	"	"
		91	0.0 V		-10 V	-10 V		"	"	"	"		10 V	10 V		0.8 V	"	12	"	"	"
		92				10 0	-10 V	"	"	"	"			10 0	10 V	0.8 V	"	13	"	44	"
	I _{D(ON)+}	93	2.0 V	-10 V				"	"	"	"	-10 V				0.0 .	K10	2	-200	200	"
	I _{S(ON)}	94	2.0 V		-10 V			"	44	"	"		-10 V				K11	3	"	"	"
	"	95				-10 V		"	"	"	"			-10 V		2.0 V	K12	4	"	"	"
	"	96					-10 V	"	"	"	"				-10 V	2.0 V	K13	5	"	44	"
	I _{IL}	97	GND					"	"	"	"						None	1	-250	-0.1	μΑ
	I _{IL}	98						"	"	"	"					GND	44	14	-250	-0.1	μA
	I _{IH}	99	5.0 V					ii.	"	ii.	"						"	1	-1	10	μA
	I_{IH}	100						"	66	"	"					5.0 V	"	14	-1	10	μA
	+l _{cc}	101	GND					"	"	"	"					GND	"	6		5	mA
	+l _{cc}	102	5.0 V					"	"	"	"					5.0 V	"	6		1.7	mA
	-I _{CC}	103	GND					"	"	"	"					GND	"	7	-8.8		mA
	-I _{CC}	104	5.0 V					"	"	"	"					5.0 V	"	7	-6.4		mA
	اِد	105	GND					"	"	"	"					GND	"	9		7	mA
	<u> </u>	106	5.0 V					"	"	"						5.0 V		9		7	mA
	I _R	107	GND					"	"	"	"					GND	"	8	-2		mA
	I _R	108	5.0 V													5.0 V		8	-2		mA

TABLE III. Group A inspection for device type 04 – Continued.

	Symbol			Adapter pin number 1/													Relays Measure energized pin no.		d Limits		
Subgroup		Test no.	1 IN ₁	2 S ₁	3 S ₃	4 S ₂	5 S₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 V _I	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂		٠	Min	Max	Unit
4 T _A = +25°C	V _{CTE} "	109 110 111 112	IN <u>3</u> / IN <u>3</u> /	GND	GND	GND	GND	15 V "	-15 V	GND "	5.0 V	·	-	_		IN <u>3</u> / IN <u>3</u> /	K2 K4 K5 K3	10 11 12 13		20 20 20 20	mV _{p-p}
7 T _A =+25°C	V _{ст} <u>7</u> / V _{ст} <u>7</u> /	113 114	2.0 V	<u>5</u> /	<u>5</u> /	<u>6</u> /	<u>6</u> / dB _{CT} =	" = -20 log (\ 	" V _{OUT} /V _{IN})	"	"					2.0 V	K1 K1	12 or 13 10 or 11	60	1.0 1.0	mV _{p-p} mV _{p-p} dB
	V _{ISO}	115 116 117 118	0.8 V 0.8 V	IN <u>4</u> /	IN <u>4</u> /	IN <u>4</u> /	IN <u>4</u> /	15 V " " = -20 log (\	-15 V " "	GND "	5.0 V "					0.8 V 0.8 V	K1 K1 K1 K1	10 11 12 13	50	3.16 3.16 3.16 3.16	mV _{p-p} " dB
9 T _A =+25°C	t _{ON}	119 120 121 122	IN IN	IN	IN	IN	IN	15 V	-15 V	GND "	5.0 V "	OUT	OUT	OUT	OUT	IN IN	K6 K8 K9 K7	2 to 10 3 to 11 4 to 12 5 to 13		250 250 250 250	ns "
	t _{OFF}	123 124 125 126	IN IN	IN	IN	IN	IN	"	"	"	"	OUT	OUT	OUT	OUT	IN IN	K6 K8 K9 K7	2 to 10 3 to 11 4 to 12 5 to 13		130 130 130 130	"
10 T _A =+125°C	t _{ON}	127 128 129 130	IN IN	IN	IN	IN	IN	" "	"	"	"	OUT	OUT	OUT	OUT	IN IN	K6 K8 K9 K7	2 to 10 3 to 11 4 to 12 5 to 13		350	"
	t _{OFF}	131 132 133 134	IN IN	IN	IN	IN	IN	"	"	"	cc cc	OUT	OUT	OUT	OUT	IN IN	K6 K8 K9 K7	2 to 10 3 to 11 4 to 12 5 to 13		200	"
11 T _A =-55°C	t _{ON}	135 136 137 138	IN IN	IN	IN IN	IN	IN	" "	ee ee	"	ee ee	OUT	OUT	OUT	OUT	IN IN	K6 K8 K9 K7	2 to 10 3 to 11 4 to 12 5 to 13		250 "	ee ee
	t _{OFF}	139 140 141 142	IN IN	IN	IN	IN	IN	" "	ee ee	"	ee ee	OUT	OUT	OUT	OUT	IN IN	K6 K8 K9 K7	2 to 10 3 to 11 4 to 12 5 to 13		130	11 11

TABLE III. Group A inspection for device type 05.

				Adapter pin number <u>1</u> /														Measured pin no.	Limits		
Subgroup	Symbol	Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14			Min	Max	
			IN		S ₁	S ₂		+V _{CC}	-V _{CC}	V_R	V_L		D ₁	D ₂			1				Unit
1	R _{DS}	1	0.8 V			-10 mA		15 V	-15 V	GND "	5.0 V			-7.5 V			None "	4	-7.8		V <u>2</u> / V <u>2</u> /
T _A =+25°C	R _{DS}	2	2.0 V		-10 mA			15 V	-15 V				-7.5 V					3	-7.8		
	I _{S(OFF)}	3	0.8 V		10 V			10 V	-20 V	"	"		-10 V				"	3	-1	1	nA "
	"	4	2.0 V			10 V		10 V	-20 V	"				-10 V			"	4	"		"
		5	0.8 V		7.5 V			15 V	-15 V	"	"		-7.5 V				"	3	"	"	"
		6	2.0 V			7.5 V		15 V	-15 V	"	"			-7.5 V			"	4	"	"	"
	I _{D(OFF)}	7	0.8 V		-10 V	40.14		10 V	-20 V	"	"		10 V	40.14			"	11	"		
		8	2.0 V		7.5.1	-10 V		10 V	-20 V	"			751/	10 V				12		"	
	"	9	0.8 V		-7.5 V	7.5.7		15 V	-15 V	"	"		7.5 V	751/			"	11	"	"	"
		10	2.0 V		-	-7.5 V		15 V	-15 V	"	"			7.5 V			1/7	12		-	"
	I _{D(ON)+}	11 12	0.8 V 2.0 V		-7.5 V	-7.5 V		15 V	-15 V	"	"		-7.5 V	-7.5 V			K7 K6	3	-2 -2	2	"
	I _{S(ON)}	13	GND		-7.5 V			"	"	"	"		-7.5 V					3	-250	-0.1	
	IIL '	_	_					"	"	"	"						None "			-	μΑ
	l _{IH}	14	5.0 V					"		"	"						"	1	-1	10	μA
	+lcc	15	GND					"	"	"	"							6		0.8	mA "
	+lcc	16	5.0 V					"	"	"	"						"	6	_	0.8	"
	-lcc	17 18	GND 5.0 V					"	"	"	"						"	7	-3 -3		"
	-l _{cc}		GND					"	"	"	"						"	7	-3	2.2	"
	IL I	19 20	5.0 V					"	"	"	"						44	9		3.2 3.2	"
	<u>"L</u>	21	GND					"	ű	íí	"						"	8	-2.2	3.2	"
	I _R	22	5.0 V					"	"	"	**						"	8	-2.2 -2.2		"
2	R _{DS}	23	0.8 V			-10 mA		15 V	-15 V	íí	"			-7.5 V			"	4	-8.1		V/ 2/
T _A =+125°C	R _{DS}	24	2.0 V		-10 mA	IUIIIA		15 V	-15 V	"	"		-7.5 V	7.5 V			"	3	-8.1		V <u>2</u> / V <u>2</u> /
1A -+123 C		25	0.8 V		10 III/			10 V	-20 V	"	"		-10 V				"	3	-100	100	nA
	I _{S(OFF)}	26	2.0 V		10 0	10 V		10 V	-20 V	"	"		-10 V	-10 V			"	4	-100	100	nA
	44	27	0.8 V		7.5 V	10 0		15 V	-15 V	"	"		-7.5 V	10 0			44	3	-100	100	nA
	"	28	2.0 V		7.5 V	7.5 V		15 V	-15 V	"	"		7.5 7	-7.5 V			"	4	-100	100	nA

TABLE III. Group A inspection for device type 05 – Continued.

			Adapter pin number <u>1</u> /														Relays energized	Measured pin no.	Limits		
Subgroup	Symbol	Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1		Min	Max	
			IN		S ₁	S_2		+V _{CC}	-V _{CC}	V_R	V_L		D_1	D_2							Unit
2	$I_{D(OFF)}$	29	0.8 V		-10 V			10 V	-20 V	GND	5.0 V		10 V				None	11	-100	100	nA
T _A =+125°C		30	2.0 V			-10 V		10 V	-20 V	"				10 V			"	12	**	"	"
	"	31	0.8 V		-7.5 V			15 V	-15 V	"	**		7.5 V				"	11	"	"	"
	íí	32	2.0 V			-7.5 V		15 V	-15 V	íí.	"			7.5 V			"	12	"	"	íí
	$I_{D(ON)+}$	33	0.8 V			-7.5 V		"	"	"	**			-7.5 V			K7	4	-200	200	"
	I _{S(ON)}	34	2.0 V		-7.5 V			"	"	"	"		-7.5 V				K6	3	-200	200	"
	I₁∟	35	GND					"	"	"	**						None	1	-250	-0.1	μΑ
	I _{IH}	36	5.0 V					"	"	"	"						"	1	-2	20	μΑ
	+l _{cc}	37	GND					"	"	"	"						et.	6		0.8	mA
	+lcc	38	5.0 V					"	"	"	"						"	6		0.8	mA
	-I _{CC}	39	GND					"	"	"	"						et.	7	-3		mΑ
	-lcc	40	5.0 V					"	"	"	"						"	7	-3		mA
	I _L	41	GND					"	"	"	"						et.	9		3.2	mA
	ΙĹ	42	5.0 V					"	"	"	"						"	9		3.2	mA
	I _R	43	GND					"	"	"	"						"	8	-2.2		mA
	I _R	44	5.0 V					"	"	"	**						"	8	-2.2		mA
3	R _{DS}	45	0.8 V			-10 mA		"	"	"	"			-7.5 V			"	4	-7.8		V 2/
T _A =-55°C	R _{DS}	46	2.0 V		-10 mA			"	"	"	**		-7.5 V				"	3	-7.8		V <u>2</u> / V <u>2</u> /
	I _{S(OFF)}	47	0.8 V		10 V			10 V	-20 V	tt.	"		-10 V				"	3	-100	100	nA
	""	48	2.0 V			10 V		10 V	-20 V	"	"			-10 V			66	4	"	"	"
	"	49	0.8 V		7.5 V			15 V	-15 V	"	"		-7.5 V				"	3	"	"	"
	"	50	2.0 V			7.5 V		15 V	-15 V	"	"			-7.5 V			"	4	44	"	"
	I _{D(OFF)}	51	0.8 V		-10 V			10 V	-20 V	"	í í		10 V				66	11	"	"	"
	""	52	2.0 V			-10 V		10 V	-20 V	"	"			10 V			66	12	"	"	"
	"	53	0.8 V		-7.5 V			15 V	-15 V	"	"		7.5 V				"	11	"	"	"
	"	54	2.0 V			-7.5 V		15 V	-15 V	"	"			7.5 V			"	12	"	"	"
	I _{D(ON)+}	55	0.8 V			-7.5 V		15 V	-15 V	"	"			-7.5 V			K7	4	-200	200	"
	I _{S(ON)}	56	2.0 V		-7.5 V			15 V	-15 V	"	"		-7.5 V				K6	3	-200	200	"

TABLE III. Group A inspection for device type 05 – Continued.

								Ad	dapter pin	number	1/						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1 IN	2	3 S ₁	4 S ₂	5	6 +V _{CC}	7 -V _{CC}	8 V _R	9 Vı	10	11 D ₁	12 D ₂	13	14			Min	Max	Unit
3	I _{IL}	57	GND			- 02		15 V	-15 V	GND	5.0 V						None	1	-250	-0.1	μА
T _A =-55°C	I _{IH}	58	5.0 V					"	"	"	"						"	1	-1	10	μA
	+l _{cc}	59	GND					"	"	"	"						"	6		1.4	mA
	+lcc	60	5.0 V					"	66	"	"						"	6		1.4	"
	-I _{CC}	61	GND					"	"	"	"						íí	7	-4.8		"
	-l _{cc}	62	5.0 V					"	66	"	"						44	7	-4.8		"
	L	63	GND					"	"	"	"						"	9		5	"
	lL	64	5.0 V					"	"	"	"						"	9		5	"
	I _R	65	GND					"	"	"	"						"	8	-2		"
	I _R	66	5.0 V		OND			"										8	-2		
4 T .0500	V _{CTE}	67 68	IN <u>3</u> / IN <u>3</u> /		GND	GND		"	"	"	"						K2 K3	11 12		20 20	mV _{p-p}
$T_A = +25^{\circ}C$	V _{CTE}	69	2.0 V		INI 4/	GIND		15 V	-15 V	GND	E 0 1/						K1	12		1.0	mV _{p-p}
T _A =+25°C	V _{CT} <u>7</u> /	69	2.0 V		IN <u>4</u> /		dB _{CT} =	15 V = -20 log (\ 		I GND	5.0 V "						NI NI	12	60	1.0	mV _{p-p} dB
	V_{ISO}	70	2.0 V			IN <u>4</u> /		15 V	-15 V	GND	5.0 V						K1	12		3.16	mV_{p-p}
	V _{ISO}	71	0.8 V		IN <u>4</u> /	"'' <u>"</u>		15 V	-15 V	GND	5.0 V						K1	11		3.16	mV _{p-p}
	.00				_		dB _{ISO} =	= -20 log (\			"								50		dB
9	ton	72	IN		IN			15 V	-15 V	GND	5.0 V		OUT				K4	11		150	ns
$T_A = +25^{\circ}C$	t _{ON}	73	"			IN		"	"	"	"			OUT			K5	12		150	"
	t _{OFF}	74	"		IN			"	"	"	"		OUT				K4	11		130	"
	t _{OFF}	75	"			IN		"	"	"	"			OUT			K5	12		130	"
10	t _{ON}	76	"		IN			"	"	"	"		OUT				K4	11		300	"
T _A =+125°C	t _{ON}	77				IN								OUT			K5	12		300	
	toff	78	"		IN			"	"	"	"		OUT				K4	11		200	"
- 44	t _{OFF}	79	"		15.1	IN		"			"		OUT	OUT			K5	12		200	"
11	t _{ON}	80 81	"		IN	IN		"					OUT	OUT			K4 K5	11 12		150	
T _A =-55°C	ton		"		INI	IIN		"	"	"	"		OUT	001						150	"
	t _{OFF}	82	"		IN	INI		"	"	"	"		OUT	OUT			K4 K5	11 12		130 130	"
12	t _{OFF}	83 84	"		IN	IN IN		"	tt	"	"			001			K4, K8	11	5	130	"
T _A =25°C	t _{D1} t _{D2}	85	44		IN	IN		44	"	44	"						K4, K8	12	5 5		44

TABLE III. Group A inspection for device type 06.

								Ad	dapter pin	number <u>′</u>	<u>l</u> /						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1 IN	2	3 S ₁	4 S ₂	5	6 +V _{CC}	7 -V _{CC}	8 V _R	9 Vı	10	11 D ₁	12 D ₂	13	14			Min	Max	Unit
1	R _{DS}	1	0.8 V			-10 mA		15 V	-15 V	GND	5.0 V		·	-10 V			None	4	-10.75		V 2/
T _A = 25°C	R _{DS}	2	2.0 V		-10 mA			15 V	-15 V	"	"		-10 V				"	3	-10.75		V <u>2</u> / V <u>2</u> /
	I _{S(OFF)}	3	0.8 V		10 V			10 V	-20 V	"	"		-10 V				"	3	-1	1	nA
	""	4	2.0 V			10 V		10 V	-20 V	"	"			-10 V			"	4	"	66	"
	44	5	0.8 V		10 V			15 V	-15 V	"	"		-10 V				"	3	"	"	"
	"	6	2.0 V			10 V		15 V	-15 V	"	"			-10 V			"	4	"	"	"
	$I_{D(OFF)}$	7	0.8 V		-10 V			10 V	-20 V	"	"		10 V				"	11	"	"	"
	"	8	2.0 V			-10 V		10 V	-20 V	"	"			10 V			"	12	"	**	"
	"	9	0.8 V		-10 V			15 V	-15 V	"	"		10 V				"	11	"	"	"
		10	2.0 V			-10 V		15 V	-15 V	-				10 V				12			
	I _{D(ON)+}	11	0.8 V		40.14	-10 V		15 V	-15 V	"	"		40.14	-10 V			K7	4	-2	2	"
	I _{S(ON)}	12	2.0 V		-10 V						"		-10 V				K6	3	-2	2	
	lıL	13	GND							"	"						None "	1	-250	-0.1	μΑ
	I _{IH}	14	5.0 V					-	"									1	-1	10	μΑ
	+l _{cc}	15	GND					"	"	"	"						"	6		8.0	mA
	+lcc	16	5.0 V						"	-								6		0.8	"
	-lcc	17	GND					"	"	"	"						"	7	-3		"
	-l _{cc}	18	5.0 V					-		"							"	7	-3		"
	ļL	19	GND					"		"	"						"	9		3.2	"
	<u> </u>	20	5.0 V					"		"	"							9		3.2	"
	I _R	21	GND					"		"	"						"	8	-2.2		"
	I _R	22	5.0 V			40 4				"	"			40.17			"	8	-2.2		
2	R _{DS}	23	0.8 V		10 ^	-10 mA		15 V	-15 V	"	"		40.17	-10 V			"	4	-11.50		V <u>2</u> /
T _A =125°C	R _{DS}	24	2.0 V		-10 mA			15 V	-15 V		"		-10 V				"	3	-11.50	400	V <u>2</u> /
	S(OFF)	25	0.8 V		10 V	40.1/		10 V	-20 V	"	"		-10 V	40.1/			"	3	-100	100	nA
	I _{S(OFF)}	26	2.0 V			10 V		10 V	-20 V					-10 V				4	-100	100	nA

TABLE III. Group A inspection for device type 06 – Continued.

Adapter pin number 1/

								Ac	lapter pin i	number <u>r</u>	1/						Relays energized	Measured pin no.	Lim	nits	
Subgroup	Symbol	Test no.	1 IN	2	3 S ₁	4 S ₂	5	6 +V _{CC}	7 -V _{CC}	8 V _R	9 Vı	10	11 D ₁	12 D ₂	13	14]		Min	Max	Unit
2	I _{S(OFF)}	27	0.8 V		10 V	32		15 V	-v _{cc}	GND	5.0 V		-10 V	D ₂			None	3	-100	100	nA
T _A =+125°C	I _{S(OFF)}	28	2.0 V		10 V	10 V		15 V	-15 V	"	3.0 V		-10 V	-10 V			"	4	-100	"	"
1 X 1 1 2 0	I _{D(OFF)}	29	0.8 V		-10 V			10 V	-20 V	"	"		10 V				"	11	"	"	"
	B(011)	30	2.0 V		-	-10 V		10 V	-20 V	"	"		-	10 V			"	12	"	"	"
	"	31	0.8 V		-10 V			15 V	-15 V	"	66		10 V				"	11	44	66	"
	££	32	2.0 V			-10 V		15 V	-15 V	"	"			10 V			"	12	"	"	"
	$I_{D(ON)+}$	33	0.8 V			-10 V		"	"	"	66			-10 V			K7	4	-200	200	"
	I _{S(ON)}	34	2.0 V		-10 V			"	"	ű	"		-10 V				K6	3	-200	200	"
	I₁∟	35	GND					**	"	"	££						None	1	-250	-0.1	μΑ
	I _{IH}	36	5.0 V					"	-		"						"	1	-2	20	μΑ
	+lcc	37	GND					"	"	"	66						"	6		0.8	mA
	+l _{cc}	38	5.0 V					"	"	"	"						ű	6		0.8	"
	-l _{cc}	39	GND					"	"	"	"						"	7	-3		"
	-l _{cc}	40	5.0 V							"	"							/	-3	0.0	"
	IL I	41 42	GND 5.0 V					"	"	"	"						"	9		3.2 3.2	"
1		43	GND					"	"	"	"						"	8	-2.2	3.2	"
	I _R I _R	44	5.0 V					"	"	"	66						"	8	-2.2		"
3	R _{DS}	45	0.8 V			-10 mA		"	"	"	"						"	4	-10.75		V <u>2</u> /
T _A =-55°C	R _{DS}	46	2.0 V		-10 mA			"	"	"	66						44	3	-10.75		V <u>2</u> / V <u>2</u> /
	I _{S(OFF)}	47	0.8 V		10 V			10 V	-20 V	"	66		-10 V				"	3	-100	100	nA
	"	48	2.0 V			10 V		10 V	-20 V	"	"			-10 V			"	4	"	"	"
	"	49	0.8 V		10 V			15 V	-15 V	"	"		-10 V				"	3	44	**	"
	"	50	2.0 V			10 V		15 V	-15 V	"	"			-10 V			"	4	"	"	"
	I _{D(OFF)}	51	0.8 V		-10 V			10 V	-20 V	"	"		10 V				"	11	"	"	"
		52	2.0 V		40.14	-10 V		10 V	-20 V	"	"		40.14	10 V			, ,	12	"	"	"
	"	53	0.8 V		-10 V	10.1/		15 V	-15 V	"	"		10 V	10.1/				11	"	"	
	-	54	2.0 V			-10 V		15 V	-15 V				1	10 V				12			

TABLE III. Group A inspection for device type 06 – Continued.

								A	dapter pin	number	<u>1</u> /						Relays energized	Measured pin no.	Lim	nits	
Subgroup	Symbol	Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	onorgizod	piii iio.	Min	Max	1
J 3. 1 4	-,		IN	_	3 S ₁	S ₂		+V _{CC}	-V _{CC}	V _R	V _L	10	D ₁	D ₂					14	WICK	Unit
3	I _{D(ON)+}	55	0.8 V			-10 V		15 V	-15 V	GND	5.0 V		·	-10 V			K7	4	-200	200	nA
T _A =-55°C	I _{S(ON)}	56	2.0 V		-10 V			"	"	"	**		-10 V				K6	3	-200	200	nA
	İ	57	GND					"	"	"	"						None	1	-250	-0.1	μΑ
	I_{IH}	58	5.0 V					"	44	44	"						"	1	-1	10	μA
	+l _{cc}	59	GND					"	"	"	"						"	6		1.4	mA
	+l _{CC}	60	5.0 V					"	"	"	"						"	6		1.4	"
	-I _{CC}	61	GND					"	"	"	"						"	7	-4.8		"
	-l _{cc}	62	5.0 V					"	"	"	"						u	7	-4.8		"
	ļ∟	63	GND					"	"	"	"						"	9		5	"
	<u> </u>	64	5.0 V					"	"	"	"						"	9	_	5	"
	I _R	65 66	GND 5.0 V					"	"	"	"						"	8 8	-2 -2		"
4	I _R V _{CTE}	67			GND			"	"	"							K2	11	-2	20	m\/
T _A = +25°C	V _{CTE}	68	IN <u>3</u> / IN <u>3</u> /		GIND	GND		"	"	"	**						K3	12		20	mV_{p-p} mV_{p-p}
7	V _{CT} <u>7</u> /	69	2.0 V		IN <u>4</u> /	OND		"	ű	"	"						K1	12		1.0	mV _{p-p}
T _A =+25°C	·CI <u></u>		2.0 1				dB _{CT} =	-20 log (\	/ _{OUT} /V _{IN})	i İ	66								60		dВ
	V_{ISO}	70	2.0 V			IN <u>4</u> /		15 V	-15 V	GND	5.0 V						K1	12		3.16	mV _{p-p}
	V _{ISO}	71	0.8 V		IN <u>4</u> /			15 V	-15 V	GND	5.0 V						K1	11		3.16	mV _{p-p}
					_		dB _{ISO} =	= -20 log ('	V _{OUT} /V _{IN})		"								50		dB
9	ton	72	IN		IN			15 V	-15 V	GND	5.0 V		OUT				K4	11		250	ns
T _A =+25°C	t _{ON}	73	"			IN		"	"	"	"			OUT			K5	12		250	"
	t_{OFF}	74	"		IN			"	"	"	"		OUT				K4	11		130	"
	t _{OFF}	75	"			IN		"	"	"				OUT			K5	12		130	"
10	t _{ON}	76	"		IN			"	"	"	"		OUT	OUT			K4	11		350	"
T _A =+125°C	ton	77	"			IN		"		"	"		01.17	OUT			K5	12		350	"
	t _{OFF}	78 79	"		IN	IN		"	"	"	"		OUT	OUT			K4 K5	11 12		200 200	"
11	t _{OFF}	80	"		IN	IIN		"	tt	"			OUT	001			K4	11		250	"
T _A =-55°C	t _{ON} t _{ON}	81	44		IIN	IN		"	66	"	66		001	OUT			K5	12		250 250	"
1 A =-33 C	t _{OFF}	82	"		IN			ıı	"	"	"		OUT	001			K4	11		130	"
	t _{OFF}	83	"		"1	IN		"	"	44	"			OUT			K5	12		130	"
12	t _{D1}	84	"		IN	IN		"	"	"	"						K4, K8	11	5	. 30	"
T _A =25°C	t _{D2}	85	44		IN	IN		"	"	"	66						K4, K8	12	5		"

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TABLE III. Group A inspection for device type 07.

								A	dapter pin	number	<u>1</u> /						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1 IN₁	2 S ₁	3 S ₃	4 S ₂	5 S₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 Vı	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂	Ī -		Min	Max	Unit
4	n	4	2.0 V	-10 mA	J 3	32	- 54	15 V	-15 V	GND	5.0 V	-7.5 V	D ₃	D ₂	D4	11112	None	2	-7.8		
T 0500	R _{DS}	2	2.0 V 0.8 V	-10 MA	-10 mA			15 V	-15 V	GND "	5.0 V	-7.5 V	-7.5 V				None "	2 3	-7.8 -7.8		V <u>2</u> / V <u>2</u> /
$T_A = 25^{\circ}C$	"		0.0 V		-10 IIIA			"		"	"		-7.5 V	751/		001/	"	3			V <u>Z</u> /
	"	3 4				-10 mA	40 4	"	"	"	"			-7.5 V	751	2.0 V	"	4	-7.8		V <u>2</u> / V 2/
			0.01/	40.17			-10 mA	40.17	00.17	"	"	40.17			-7.5 V	0.8 V	"	5	-7.8		
	I _{S(OFF)}	5	0.8 V	10 V	40.17			10 V	-20 V			-10 V	40.17					2	-1	1 "	nA "
		6	2.0 V		10 V	40.17		"					-10 V	40.17		001/		3			
	"	/				10 V	40.17	"	"					-10 V	40.17	0.8 V		4	"	"	"
	"	8	0.01/	7.5.7			10 V	45.17	45.17	"	"	7.5.7			-10 V	2.0 V	"	5	"	"	"
	"	9	0.8 V	7.5 V	751			15 V	-15 V	"	"	-7.5 V	7.5.1				"		"	"	"
	"	10	2.0 V		7.5 V	751/		"		"	"		-7.5 V	751/		001/	"	3	"	"	"
	"	11				7.5 V	751/	"	"	"	"			-7.5 V	751/	0.8 V 2.0 V	"	5	"	"	"
		12	0.01/	40.1/			7.5 V	40.17	00.17	"	"	40.17			-7.5 V	2.0 V	"		"	"	
	I _{D(OFF)}	13	0.8 V	-10 V	-10 V			10 V	-20 V	"	"	10 V	40.17				"	10	"	"	"
	"	14	2.0 V		-10 V	40.17		"		"	"		10 V	40.17		001/	"	11	"	"	"
	"	15 16				-10 V	-10 V	"	"	"	66			10 V	10 V	0.8 V 2.0 V	"	12 13	"	"	"
	"	17	0.01/	751/			-10 V	4E \/	45.1/	"	"	751/			10 V	2.0 V	"	-	44	66	"
	"	18	0.8 V 2.0 V	-7.5 V	-7.5 V			15 V	-15 V	"	"	7.5 V	7.5 V				"	10 11	"	"	"
	"	19	2.0 V		-7.5 V	-7.5 V		"	44	"	"		7.5 V	7.5 V		0.8 V	"	12	"	"	"
	"	20				-7.5 V	-7.5 V	"	"	"	"			7.5 V	7.5 V	2.0 V	"	13	44	"	"
	I=	21	2.0 V	-7.5 V			-1.5 V	"	"	"	"	-7.5 V			7.5 V	2.0 V	K10	2	-2	2	"
	I _{D(ON)+}	22	0.8 V	-7.5 V	-7.5 V			"	"	"	**	-7.5 V	-7.5 V				K10	3	-2 -2	2	"
	I _{S(ON)}	23	0.0 V		-1.5 V	-7.5 V		"	"	"	**		-1.5 V	-7.5 V		2.0 V	K12	1	-2 -2	2	"
	"	24				-7.5 V	-7.5 V	"	"	"	"			-7.5 V	-7.5 V	0.8 V	K12	5	-2 -2	2	"
	- In	25	GND				7.5 V	"	"	"	"				7.5 V	0.0 V	None	1	-250	-0.1	μΑ
	IIL I	26	0.10					"	"	"	"					GND	"	14	-250	-0.1	μΑ
	IJL	26			<u> </u>				<u> </u>							GND		14	-250	-0.1	μ

TABLE III. Group A inspection for device type 07 –Continued.

								A	dapter pin	number	<u>1</u> /						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S₃	4 S ₂	5 S ₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 V _L	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂			Min	Max	Unit
1	I _{IH}	27	5.0 V					15 V	-15 V	GND	5.0 V						None	1	-1	10	μΑ
T _A =+25°C	I _{IH}	28						"	"	"	"					5.0 V	"	14	-1	10	μA
"	+l _{CC}	29	GND					íí.	íí	íí	"					GND	"	6		1.5	mΑ
	+lcc	30	5.0 V					"	"	"	"					5.0 V	"	6		1.5	"
	-I _{cc}	31	GND					"	"	"	"					GND	"	7	-5		"
	-l _{cc}	32	5.0 V					"	"	"	"					5.0 V	44	7	-5		"
	Iι	33	GND					"	"	"	"					GND	"	9		4.5	"
	IL	34	5.0 V					"	"	"	"					5.0 V	44	9		4.5	"
	I _R	35	GND					"	"	"	"					GND	"	8	-2.2		"
	I _R	36	5.0 V					"	"	"	"					5.0 V	"	8	-2.2		"
2	R _{DS}	37	2.0 V	-10 mA				"	"	"	"	-7.5 V					"	2	-8.1		V <u>2</u> / V <u>2</u> /
$T_A = 125^{\circ}C$	"	38	0.8 V		-10 mA								-7.5 V				"	3	-8.1		V <u>2</u> /
	"	39				-10 mA		"	"	"	"			-7.5 V		2.0 V	"	4	-8.1		V <u>2</u> /
		40					-10 mA			"	"				-7.5 V	0.8 V	"	5	-8.1		V <u>2</u> /
	I _{S(OFF)}	41	0.8 V	10 V	40.17			10 V	-20 V		"	-10 V	40.17				"	2	-100	100	nA "
	"	42	2.0 V		10 V	40.17		"			"		-10 V	40.17		001/	"	3	"	"	"
	44	43 44				10 V	10 V	"	"	"	"			-10 V	-10 V	0.8 V 2.0 V	44	5	"	"	"
	"	45	0.8 V	7.5 V			10 V	15 V	-15 V	"	66	-7.5 V			-10 V	2.0 V	"	2	44	44	"
	"	46	2.0 V	7.5 V	7.5 V			13 V	-13 V	"	"	-7.5 V	-7.5 V				"	3	"	"	"
	"	47	2.0 V		7.5 V	7.5 V		"	"	"	"		7.5 V	-7.5 V		0.8 V	44	4	**	"	"
	"	48				7.0 1	7.5 V	"	"	"	"			7.0 1	-7.5 V	2.0 V	"	5	"	"	"
	I _{D(OFF)}	49	0.8 V	-10 V				10 V	-20 V	"	"	10 V					"	10	"	"	"
	*B(OFF)	50	2.0 V		-10 V			"	"	"	**		10 V				"	11	44	44	"
	"	51				-10 V		"	"	"	"			10 V		0.8 V	44	12	"	"	"
	"	52					-10 V	"	"	"	"				10 V	2.0 V	"	13	66	"	"
	"	53	0.8 V	-7.5 V				15 V	-15 V	"	"	7.5 V					"	10	66	"	"
	"	54	2.0 V		-7.5 V			"	"	"	"		7.5 V				44	11	**	"	"
	"	55				-7.5 V		"	"	"	66			7.5 V		0.8 V	"	12	**	44	"
	"	56					-7.5 V	"	"	"	"				7.5 V	2.0 V	"	13	"	"	íí.

TABLE III. Group A inspection for device type 07 –Continued.

								Ad	dapter pin	number <u>′</u>	<u>l</u> /						Relays energized	Measured pin no.		nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S₃	4 S ₂	5 S ₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 V _L	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂			Min	Max	Unit
2	I _{D(ON)+}	57	2.0 V	-7.5 V		_		15 V	-15 V	GND	5.0 V	-7.5 V					K10	2	-200	200	nA
T _A = 125°C	I _{S(ON)}	58	0.8 V		-7.5 V			"	44	"	66		-7.5 V				K11	3	"	44	"
	"	59				-7.5 V		"	"	"	**			-7.5 V		2.0 V	K12	4	"	"	"
	"	60					-7.5 V	"	"	"	"				-7.5 V	0.8 V	K13	5	"	"	"
	I₁∟	61	GND					"	"	"	"						None	1	-250	-0.1	μΑ
	I _{IL}	62						"	"	"	**					GND	44	14	-250	-0.1	μA
	I _{IH}	63	5.0 V					"	"	"	"						"	1	-2	20	μA
	I _{IH}	64						"	"	"	"					5.0 V	"	14	-2	20	μA
	+l _{CC}	65	GND					íí	íí .	íí	"					GND	"	6		1.5	mA
	+l _{CC}	66	5.0 V					"	"	"	"					5.0 V	"	6		1.5	"
	-I _{CC}	67	GND					"	"	"	"					GND	ee .	7	-5		"
	-lcc	68	5.0 V					"	44	"	66					5.0 V	"	7	-5		"
	IL	69	GND					"	"	"	66					GND	44	9		4.5	"
	lι	70	5.0 V					"	"	"	"					5.0 V	££	9		4.5	"
	I_R	71	GND					"	"	"	"					GND	"	8	-2.2		"
	I _R	72	5.0 V					"	"	"	"					5.0 V	££	8	-2.2		44
3	R_{DS}	73	2.0 V	-10 mA				"	"	"	"	-7.5 V					"	2	-7.8		V <u>2</u> /
$T_A = -55^{\circ}C$	44	74	0.8 V		-10 mA			"	"	"	"		-7.5 V				66	3	"		V <u>2</u> /
	"	75				-10 mA		"	"	"	"			-7.5 V		2.0 V	"	4	"		V <u>2</u> /
		76					-10 mA		-	-					-7.5 V	0.8 V		5	-		V <u>2</u> /
	I _{S(OFF)}	77	0.8 V	10 V	40.14			10 V	-20 V	"	"	-10 V	40.14				"	2	-100	100	nA "
	"	78	2.0 V		10 V	40.17		"		"			-10 V	40.17		0.01/	"	3	"	"	
	"	79				10 V	10 V	"	"	"	"			-10 V	40.1/	0.8 V 2.0 V	"	4 5	"	"	"
	44	80 81	0.8 V	7.5 V			10 V	15 V	-15 V	"	"	-7.5 V			-10 V	2.0 V	44	5	"	"	"
	"	82	2.0 V	7.5 V	7.5 V			15 V	-15 V	"	"	-1.5 V	-7.5 V				"	3	44	44	44
	"	83	2.0 V		7.5 V	7.5 V		"	"	"	"		-7.5 V	-7.5 V		0.8 V	"	4	"	"	"
	"	84				7.5 V	7.5 V	"	"	"	66			7.5 V	-7.5 V	2.0 V	"	5	"	"	"

TABLE III. Group A inspection for device type 07 –Continued.

								Ac	lapter pin i	number <u>′</u>	<u>I</u> /						Relays energized	Measured pin no.	Lim	nits	
Subgroup	Symbol	Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14			Min	Max	
			IN ₁	S ₁	S ₃	S ₂	S ₄	+V _{CC}	-V _{CC}	V_R	V_L	D_1	D ₃	D_2	D_4	IN ₂					Unit
3	I _{D(OFF)}	85	0.8 V	-10 V				10 V	-20 V	GND "	5.0 V	10 V					None	10	-100	100	nA "
$T_A = -55^{\circ}C$		86	2.0 V		-10 V				-	-			10 V				"	11		"	
	"	87				-10 V		"	"	"	"			10 V		0.8 V	"	12	"	"	"
	"	88					-10 V			"	"				10 V	2.0 V	"	13	"	"	"
		89	0.8 V	-7.5 V				15 V	-15 V	"	"	7.5 V						10	"	"	"
		90	2.0 V		-7.5 V	,		"	"		"		7.5 V					11			"
		91				-7.5 V	7.5.4		"	"	"			7.5 V	7.5.7	0.8 V		12	"		"
		92	0.01/				-7.5 V	-	-						7.5 V	2.0 V		13		-	"
	I _{D(ON)+}	93	2.0 V	-7.5 V	7.5.4			15 V	-15 V	GND "	5.0 V	-7.5 V	7.5.7				K10	2	-200	200	"
	I _{S(ON)}	94	0.8 V		-7.5 V	7.5.7		"		"	"		-7.5 V	751/		0.01/	K11	3	"	"	"
	"	95 96				-7.5 V	751/	"	"	"	"			-7.5 V	751/	2.0 V	K12 K13	4 5	"	"	"
		96	GND				-7.5 V	"	"	"	"				-7.5 V	0.8 V		3	250	0.1	
	I _{IL}		GND					"	"	"	"					OND	None "	1	-250	-0.1	μΑ
	lıL.	98	= 0 \ /					"	"	"	"					GND	"	14	-250	-0.1	μΑ
	ļн	99	5.0 V					"	"	"	"						"	1	-1	10	μΑ
	I _{IH}	100														5.0 V		14	-1	10	μΑ
	+l _{cc}	101	GND					"	"	"	**					GND	"	6		2.5	mA
	+lcc	102	5.0 V					"	"	"	"					5.0 V	"	6		2.5	"
	-I _{CC}	103	GND					"	"	"	66					GND	"	7	-8		"
	-I _{CC}	104	5.0 V					"	"	"	"					5.0 V	"	7	-8		"
	IL	105	GND					"	"	"	66					GND	"	9		7	"
	I _L	106	5.0 V					"	"	"	"					5.0 V	"	9		7	"
	I _R	107	GND					"	"	"	66					GND	"	8	-2		"
	I _R	108	5.0 V					"	"	"	"					5.0 V	"	8	-2		"
4	V_{CTE}	109	IN <u>3</u> /	GND				"	"	"	66						K2	10		20	mV_{p-p}
T _A = +25°C	"	110	IN <u>3</u> /		GND			"	"	"	"						K4	11		20	"
	"	111				GND		"	"	"	"					IN <u>3</u> / IN <u>3</u> /	K5	12		20	"
	"	112					GND	"	"	"	"					IN <u>3</u> /	K3	13		20	"

TABLE III. Group A inspection for device type 07 –Continued.

								Ad	dapter pin	number	1/						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S ₃	4 S ₂	5 S ₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 V _L	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂			Min	Max	Unit
7 T _A =+25°C	V _{CT} <u>7</u> /	113 114 115 116	2.0 V 0.8 V	IN <u>4</u> /	IN <u>4</u> /	IN <u>4</u> /	INL 4/	15 V "	-15 V "	GND "	5.0 V					2.0 V 0.8 V	K1 K1 K1 K1	11 10 13 12		1.0	mV _{p-p}
		116					IN <u>4</u> / d		I log (V _{out} /\	/ _{IN})						0.6 V	N1	12	60		dB
	V _{ISO}	117 118 119 120	0.8 V 2.0 V	IN <u>4</u> /	IN <u>4</u> /	IN <u>4</u> /	IN <u>4</u> /	15 V " " = -20 log (\	-15 V "	GND "	5.0 V "					0.8 V 2.0 V	K1 K1 K1 K1	10 11 12 13	50	3.16 3.16 3.16 3.16	mV _{p-p} " " dB
9	t _{ON}	121	IN	IN			ubiso =	15 V	-15 V	GND	5.0 V	OUT					K6	2 to 10	50	150	ns
T _A =+25°C		122 123 124	IN		IN	IN	IN	"	"	"	"		OUT	OUT	OUT	IN IN	K8 K9 K7	3 to 11 4 to 12 5 to 13		"	"
	t _{OFF}	125 126 127 128	IN IN	IN	IN	IN	IN	"	"	"	"	OUT	OUT	OUT	OUT	V	K6 K8 K9 K7	2 to 10 3 to 11 4 to 12 5 to 13		130	"
10 T _A =+125°C	t _{ON}	129 130 131	IN IN	IN	IN	IN	IIN	££	"	"	"	OUT	OUT	OUT		IN	K6 K8 K9	2 to 10 3 to 11 4 to 12		300	"
	t _{OFF}	132 133	IN	IN			IN	"	"	"	"	OUT			OUT	IN	K7 K6	5 to 13 2 to 10		200	"
		134 135 136	IN		IN	IN	IN	"	"	"	"		OUT	OUT	OUT	IN IN	K8 K9 K7	3 to 11 4 to 12 5 to 13		"	"
11 T _A =-55°C	t _{ON}	137 138 139	IN IN	IN	IN	IN		"	"	"	"	OUT	OUT	OUT	OUT	IN	K6 K8 K9	2 to 10 3 to 11 4 to 12		150	"
	t _{OFF}	140 141 142	IN IN	IN	IN		IN	"	"	"	"	OUT	OUT		OUT	IN	K7 K6 K8	5 to 13 2 to 10 3 to 11		130	"
		143 144				IN	IN	"	"	"	"			OUT	OUT	IN IN	K9 K7	4 to 12 5 to 13		"	"
12 T _A =25°C	t _{D1} t _{D2}	145 146 147	IN IN	IN IN	IN IN	IN	IN	"	"	"	"					IN	K6, K14 K6, K14 K7, K15	11 11 12	5 5 5		"
	t _{D1} t _{D2}	147				IN	IN	ű	"	ű	66					IN	K7, K15 K7, K15	12	5 5		ű

TABLE III. Group A inspection for device type 08.

								Ad	apter pin n	umber 1	/						Relays energized	Measured pin no.	Lim	nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S₃	4 S ₂	5 S₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 Vı	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂			Min	Max	Unit
1	R _{DS}	1	2.0 V	-10 mA	- 0			15 V	-15 V	GND	5.0 V	-10 V	Ů			-	None	2	-10.75		V 2/
T _A = 25°C	53	2	0.8 V		-10 mA			"	"	"	"		-10 V				"	3	"		V 2/
	"	3				-10 mA		"	"	"	"			-10 V		2.0 V	"	4	"		V 2/
	44	4					-10 mA	"	"	"	"				-10 V	0.8 V	"	5	"		V 2/ V 2/ V 2/ V 2/
	I _{S(OFF)}	5	0.8 V	10 V				10 V	-20 V	"	"	-10 V					"	2	-1	1	nA
	"	6	2.0 V		10 V			"	"	66	66	-	-10 V				44	3	**	"	"
	"	7			_	10 V		"	"	66	66			-10 V		0.8 V	66	4	"	**	"
	"	8					10 V	"	"	"	"				-10 V	2.0 V	66	5	"	"	"
	"	9	0.8 V	10 V				15 V	-15 V	"	"	-10 V					"	2	"	"	"
	"	10	2.0 V		10 V			"	"	"	**		-10 V				"	3	"	"	"
	**	11				10 V		66	"	66	66			-10 V		0.8 V	"	4	**	**	"
	66	12					10 V	"	66		66				-10 V	2.0 V	"	5	"	"	"
	I _{D(OFF)}	13	0.8 V	-10 V				10 V	-20 V	"	"	10 V					"	10	tt	££	66
	"	14	2.0 V		-10 V			"	"	"	"		10 V				44	11	"	"	66
	"	15				-10 V		"	"	"	"			10 V		0.8 V	44	12	"	"	66
	"	16					-10 V	"	"	"	"				10 V	2.0 V	"	13	"	"	66
	"	17	0.8 V	-10 V				15 V	-15 V	"	"	10 V					66	10	"	"	66
	"	18	2.0 V		-10 V			"	66	"	"		10 V				"	11	"	"	66
	"	19				-10 V		"	66	"	"			10 V		0.8 V	"	12	44	"	66
	"	20					-10 V	"	66	66	66				10 V	2.0 V	"	13	"	"	"
	$I_{D(ON)+}$	21	2.0 V	-10 V				"	"	"	"	-10 V					K10	2	-2	2	"
	I _{S(ON)}	22	0.8 V		-10 V			"	66	"	66		-10 V				K11	3	"	"	"
	"	23				-10 V		"	"	"	"			-10 V		2.0 V	K12	4	"	"	"
	"	24					-10 V	"	"	"	"				-10 V	0.8 V	K13	5	"	"	"
	I₁∟	25	GND					"	"	"	"						None	1	-250	-0.1	μΑ
	I₁∟	26						"	66	66	66					GND	"	14	-250	-0.1	μΑ

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TABLE III. Group A inspection for device type 08 –Continued.

								Ad	apter pin r	umber <u>1</u>	/						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1 IN₁	2 S ₁	3 S₃	4 S ₂	5 S ₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 V _L	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂			Min	Max	Unit
1	I _{IH}	27	5.0 V					15 V	-15 V	GND	5.0 V						None	1	-1	10	μΑ
$T_A = 25^{\circ}C$	I _{IH}	28						"	"	"	"					5.0 V	"	14	-1	10	μA
1	+l _{cc}	29	GND					tt	tt	"	"					GND	"	6		1.5	mA
	+l _{cc}	30	5.0 V					"	"	"	"					5.0 V	"	6		1.5	"
	-I _{cc}	31	GND					"	"	"	"					GND	"	7	-5		"
	-l _{cc}	32	5.0 V					"	"	"	**					5.0 V	"	7	-5		"
	IL.	33	GND					"	ű	ii.	"					GND	"	9		4.5	"
	ال	34	5.0 V					"	"	"	**					5.0 V	"	9		4.5	66
	I_R	35	GND					"	tt	"	**					GND	"	8	-2.2		**
	I_R	36	5.0 V					"	"	"	"					5.0 V	"	8	-2.2		66
2	R _{DS}	37	2.0 V	-10 mA				15 V	-15 V	GND	5.0 V	-10 V					"	2	-11.50		V <u>2</u> /
T _A =125°C	"	38	0.8 V		-10 mA			"	44	"	**		-10 V				"	3	**		
	"	39				-10 mA		"	"	"	66			-10 V		2.0 V	"	4	66		66
	"	40					-10 mA	"	íí	"	"				-10 V	0.8 V	"	5	**		"
	I _{S(OFF)}	41	0.8 V	10 V				10 V	-20 V	"	"	-10 V					"	2	-100	100	nA
	"	42	2.0 V		10 V			"	"	"	**		-10 V				"	3	"	"	"
	"	43				10 V		"	"	"	"			-10 V		0.8 V	"	4	"	"	"
	"	44	0.01/	40.14			10 V			"		40.17			-10 V	2.0 V		5	"		"
	"	45	0.8 V	10 V	40.17			15 V	-15 V	"		-10 V	40.1/					2	"		"
	"	46 47	2.0 V		10 V	10 V		"	"	"			-10 V	-10 V		001/	"	3	66	"	"
	"	47 48				10 V	10 V	"	"		"			-10 V	-10 V	0.8 V 2.0 V	"	4 5	"	"	66
ነ	I	49	0.8 V	-10 V			10 V	10 V	-20 V	"	"	10 V			-10 V	2.0 V	"	10	"	66	"
	I _{D(OFF)}	50	2.0 V	10 4	-10 V			10 V	-20 V	"	"	10 0	10 V				"	11	"	"	44
	"	51	2.0 V		100	-10 V		"	"	"	"		10 0	10 V		0.8 V	"	12	"	"	44
	"	52				.5 v	-10 V	66	"	"	"			15 V	10 V	2.0 V	44	13	**	66	"
	"	53	0.8 V	-10 V				15 V	-15 V	"	"	10 V				2.0	"	10	"	"	"

TABLE III. Group A inspection for device type 08 –Continued.

								Ada	apter pin n	umber <u>1</u>	/						Relays energized	Measured pin no.	Lim	nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S ₃	4 Տշ	5 S4	6 +V _{CC}	7 -V _{cc}	8 V _R	9 Vı	10 D₁	11 D₃	12 D ₂	13 D₄	14 IN ₂			Min	Max	Unit
2	l	54	2.0 V	J1	-10 V	O 2	04	15 V	-15 V	GND	5.0 V	D ₁	10 V	D ₂	D4	11112	"	11	-100	100	nA
T _A =125°C	I _{D(OFF)}	55	2.0 V		-10 V	-10 V		13 V	-13 V	"	3.0 V		10 V	10 V		0.8 V	"	12	-100	100	"
1 A = 123 C	I _{D(OFF)}	56				10 V	-10 V	"	"	"	**			10 0	10 V	2.0 V	44	13	-100	100	44
1	I _{D(ON)+}	57	2.0 V	-10 V			10 1	"	"	"	"	-10 V			10 1	2.0 1	K10	2	-200	200	"
	I _{S(ON)}	58	0.8 V	10 1	-10 V			"	"	66	"	10 1	-10 V				K11	3	-200	200	"
	"S(ON)	59	0.0 1		10 1	-10 V		"	"	66	"			-10 V		2.0 V	K12	4	-200	200	"
	"	60					-10 V	"	"	"	"				-10 V	0.8 V	K13	5	-200	200	"
	I _{IL}	61	GND					"	"	u	"						None	1	-250	-0.1	μА
	I _{IL}	62	•					"	"	"	"					GND	"	14	-250	-0.1	μΑ
i	I _{IH}	63	5.0 V					"	"	"	66						"	1	-2	20	μΑ
	I _{IH}	64						"	"	"	66					5.0 V	"	14	-2	20	μΑ
ŀ	+l _{cc}	65	GND					"	ű	"	66					GND	"	6		1.5	mΑ
	+lcc	66	5.0 V					"	"	"	66					5.0 V	"	6		1.5	"
	-I _{CC}	67	GND					ii.	u	££	"					GND	"	7	-5		66
	-I _{CC}	68	5.0 V					"	"	"	66					5.0 V	44	7	-5		"
	I _L	69	GND					"	u	"	"					GND	"	9		4.5	"
	ارً	70	5.0 V					"	"	"	66					5.0 V	"	9		4.5	66
	I_R	71	GND					"	"	"	"					GND	"	8	-2.2		66
	I _R	72	5.0 V					"	"	"	66					5.0 V	"	8	-2.2		66
3	R_{DS}	73	2.0 V	-10 mA				"	ii.	tt.	66	-10 V					"	2	-10.75		V <u>2</u> /
$T_A = -55^{\circ}C$	"	74	0.8 V		-10 mA			"	"	"	66		-10 V				44	3	"		66
	66	75				-10 mA		"	"	"	66			-10 V		2.0 V	"	4	"		66
	"	76					-10 mA	"	íí.	íí.	66				-10 V	0.8 V	"	5	"		66
	I _{S(OFF)}	77	0.8 V	10 V				10 V	-20 V	"	66	-10 V					"	2	-100	100	nA
	66	78	2.0 V		10 V			"	"	"	66		-10 V				"	3	"	"	66
	"	79				10 V		"	u	íí	66			-10 V		0.8 V	"	4	"	"	"

TABLE III. Group A inspection for device type 08 –Continued.

Subgroup	Symbol	Test no.		Adapter pin number <u>1</u> /											Relays energized	Measured pin no.	Lim	nits			
3.2.4			1	2	3	4	5	6	7	. 8	9	10	11	12	13	14			Min	Max	Unit
			IN ₁	S ₁	S ₃	S ₂	S ₄	+V _{CC}	-V _{cc}	V_R	V _L	D ₁	D ₃	D_2	D_4	IN ₂					
3	I _{S(OFF)}	80					10 V	10 V	-20 V	GND	5.0 V				-10 V	2.0 V	None	5	-100	100	nA "
T _A =-55°C		81	0.8 V	10 V				15 V	-15 V		-	-10 V						2			
	"	82	2.0 V		10 V			"	66	"	"		-10 V				44	3	"	"	"
	"	83				10 V		"	"	"	"			-10 V		0.8 V		4	"	"	
	"	84					10 V	"	66		"				-10 V	2.0 V	"	5	"	"	"
	$I_{D(OFF)}$	85	0.8 V	-10 V				10 V	-20 V	"	"	10 V					44	10	"	"	"
		86	2.0 V		-10 V			"	"	"	"		10 V					11	"	"	"
		87				-10 V		"	"	"	-			10 V		0.8 V	"	12	"	"	"
	"	88					-10 V			"	"				10 V	2.0 V		13	"	"	"
1	"	89	0.8 V	-10 V				15 V	-15 V	"	66	10 V						10	"		"
	"	90	2.0 V		-10 V	40.14		"	"	"	"		10 V	40.14		001/		11	"	"	"
		91				-10 V	40.14		"					10 V	40.14	0.8 V		12	"	"	"
		92	0.01/	40.17			-10 V	"				40.17			10 V	2.0 V		13			"
	I _{D(ON)+}	93	2.0 V	-10 V	40.17			"	"	"		-10 V	40.17				K10	2	-200	200	"
	I _{S(ON)}	94	0.8 V		-10 V	40.17		"		"			-10 V	40.17		0.01/	K11	3	"	"	"
	"	95				-10 V	40.1/	44	"	"	"			-10 V	40.1/	2.0 V	K12	4	"	"	"
		96	OND				-10 V	"	"	"	"				-10 V	0.8 V	K13	5	050	0.4	
	ļL	97	GND					"	"	"						0115	None "	1	-250	-0.1	μΑ
↓ .	I _{IL}	98								-						GND		14	-250	-0.1	μΑ
	I _{IH}	99	5.0 V					"	"	"	"						44	1	-1	10	μΑ
	I _{IH}	100						"	66	"	"					5.0 V	44	14	-1	10	μΑ
	+l _{cc}	101	GND					"	"	66	"					GND	"	6		2.5	mA
	+l _{cc}	102	5.0 V					"	66	66	66					5.0 V	"	6		2.5	66
	-I _{cc}	103	GND					"	££	"	66					GND	"	7	-8		66
	-I _{cc}	104	5.0 V					"	"	"	"					5.0 V	66	7	-8		66
	ΙL	105	GND					"	££	"	66					GND	"	9		7	66
	ال	106	5.0 V					"	66	66	66					5.0 V	"	9		7	66
	I _R	107	GND					"	££	"	66					GND	"	8	-2		66
	I_R	108	5.0 V					"	66	66	66					5.0 V	"	8	-2		66

TABLE III. Group A inspection for device type 08 –Continued.

								Ad	apter pin r	number <u>1</u>	/						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1 IN ₁	2 S ₁	3 S ₃	4 S ₂	5 S₄	6 +V _{CC}	7 -V _{CC}	8 V _R	9 Vı	10 D ₁	11 D ₃	12 D ₂	13 D ₄	14 IN ₂			Min	Max	Unit
4	V _{CTE}	109		GND	03	02	- 04	15 V	-15 V	GND	5.0 V	D ₁	D3	D ₂	D4	11112	K2	10		20	mV _{p-p}
T _A =+25°C	V CTE	110	IN <u>3</u> / IN <u>3</u> /	OND	GND			13 V	-13 V	"	3.0 V						K4	11		20	"P-P
1 A =+25 C	"	111	<u>o</u>		OND	GND		"	"	"	"					IN <u>3</u> /	K5	12		20	"
	"	112				OND	GND	**	"	"	"					IN 3/	K3	13		20	66
7	V _{CT} <u>7</u> /	113	2.0 V	IN <u>4</u> /			OND	"	"	"	"					<u>o</u> /	K1	11		1.0	"
T _A =+25°C	• 61 2	114	0.8 V		IN <u>4</u> /			"	"	"	"						K1	10		"	"
14-120-0		115				IN <u>4</u> /		66	"	"	"					2.0 V	K1	13		"	"
		116					IN <u>4</u> /	**	"	"	44					0.8 V	K1	12		"	44
		-					$dB_{CT} = -1$	20 log (\	V_{OUT}/V_{IN}	<u>ı</u>									60		dB
	V_{ISO}	117	0.8 V	IN <u>4</u> /				15 V	-15 V	GND	5.0 V						K1	10	0	3.16	mV_{p-p}
		118	2.0 V	_	IN <u>4</u> /			**	"	44	44						K1	11	0	3.16	""
		119				IN <u>4</u> /		**	"	"	"					0.8 V	K1	12	0	3.16	44
		120					IN <u>4</u> /	"	66	"	"					2.0 V	K1	13	0	3.16	"
							$dB_{ISO} = -$				"								50		dB
9	t_{ON}	121	IN	IN				15 V	-15 V	GND	5.0 V	OUT					K6	2 to 10		250	ns
T _A =+25°C		122	IN		IN			**	66	**	44		OUT				K8	3 to 11		"	"
		123				IN		66	"	"	"			OUT		IN	K9	4 to 12		"	"
		124					IN	"	"	"	"				OUT	IN	K7	5 to 13		"	"
	toff	125	IN	IN				"	66	"	"	OUT					K6	2 to 10		130	"
		126	IN		IN			"		"	"		OUT				K8	3 to 11		"	"
		127				IN	l	"	"	"	"			OUT			K9	4 to 12		"	"
		128					IN	"	"	"	"				OUT		K7	5 to 13			"
10	t _{ON}	129	IN	IN				"	"	"	"	OUT	OUT				K6	2 to 10		350	"
T _A =+125°C		130	IN		IN								OUT	01.17		l	K8	3 to 11			
		131				IN		"	"	"	"			OUT	OUT	IN	K9	4 to 12		"	"
		132					IN								OUT	IN	K7	5 to 13			

TABLE III. Group A inspection for device type 08 -Continued.

								Ada	apter pin n	umber 1	/						Relays energized	Measured pin no.	Lin	nits	
Subgroup	Symbol	Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	-	Min	Max	
			IN ₁	S ₁	S ₃	S_2	S_4	+V _{CC}	-V _{CC}	V_R	V_L	D_1	D_3	D_2	D_4	IN_2					Unit
10	t _{OFF}	133	IN	IN				15 V	-15 V	GND	5.0 V	OUT					K6	2 to 10		200	ns
T _A =+125°C		134	IN		IN			"	"	"	"		OUT				K8	3 to 11		"	"
		135				IN		"	**	"	"			OUT		IN	K9	4 to 12		"	"
		136					IN	"	"	66	44				OUT	IN	K7	5 to 13		**	44
11	t _{ON}	137	IN	IN				"	u	"	"	OUT					K6	2 to 10		250	"
T _A =-55°C		138	IN		IN			"	"	**	"		OUT				K8	3 to 11		**	44
		139				IN		"	"	"	"			OUT		IN	K9	4 to 12		"	"
		140					IN	"	"	**	"				OUT	IN	K7	5 to 13		**	44
	toff	141	IN	IN				"	"	"	"	OUT					K6	2 to 10		130	"
		142	IN		IN			"	"	**	"		OUT				K8	3 to 11		**	44
		143				IN		"	"	**	"			OUT		IN	K9	4 to 12		**	44
		144					IN	"	"	"	"				OUT	IN	K7	5 to 13		"	"
12	t _{D1}	145	IN	IN	IN			"	er.	tt.	"						K6, K14	11	5		"
T _A =25°C	t _{D2}	146	IN	IN	IN			"	"	"	"						K6, K14	11	5		44
	t _{D1}	147				IN	IN	"	"	"	"					IN	K7, K15	12	5		"
	t _{D2}	148				IN	IN	66	"	66	44					IN	K7, K15	12	5		44

NOTES:

- 1/ The test circuits used with table III are shown in figures 2, 3, and 4. The waveforms on figure 5 apply to all device types as specified within table III (see tests for t_{ON} and t_{OFF}). The waveforms in figure 6 apply to device types 05, 06, 07, and 08 as specified within table III.
- $\underline{2}'$ R_{DS} (in Ω) = -100 (measured value +7.5) for device types 01, 03, 05, and 07. R_{DS} (in Ω) = -100 (measured value +10) for device types 02, 04, 06, and 08. R_{DS} may be measured differentially with respect to V_A. In case of differentially measured voltages, the table III limits representing voltage drop across the tested switch must be maintained.
- $\underline{3}$ / The input pulse generator shall have the following characteristics: (a) $V_{gen} = 3.0 \text{ V}$ (b) Rise time $\leq 10 \text{ ns}$ (c) Fall time $\leq 10 \text{ ns}$ and (d) PRR = 100 kHz at 50% duty cycle.
- $\underline{4}$ / The input generator shall have the following characteristics: $V_{gen} = 1 V_{P-P}$ at 10 MHz. V_{CT} is measured on monolithic devices only.
- 5/ Input (IN 3/) shall be applied to either S_1 or S_3 .
- $\underline{6}$ / Input (IN $\underline{3}$ /) shall be applied to either S₂ or S₄.
- 7/ V_{CT} applies only to monolithic devices.

- 4.4.4 <u>Group D inspection</u>. Group D inspection shall be in accordance with table V of MIL-PRF-38535. End point electrical parameters shall be as specified in table II herein. A special subgroup shall be added to group D inspection for class S devices only, and it shall consist of the group A subgroups 4 and 7 as specified in table III herein. This special subgroup shall be performed on each device type that is qualified from those listed in 1.2.1 herein. After initial qualification, the special subgroup shall be performed periodically on a single device type selected from those device types previously qualified. When more than one device type is qualified, the single device type selected shall be different device type for each subsequent periodic inspection until all qualified device types have been inspected. The sequence of single device types shall be repeated to fulfill the periodic inspection requirement.
 - 4.5 Methods of inspection. Methods of inspection shall be specified and as follows.
- 4.5.1 <u>Voltage and current</u>. All voltage values given, except differential voltages, are referenced to the external zero reference level of the supply voltage. Currents given are conventional current and positive when flowing into the referenced terminal.
- 4.5.2 <u>Life test cooldown procedure</u>. When devices are measured at 25°C following application of the operating life or burn-in test condition, they shall be cooled to room temperature prior to removal of the bias.

Test			Device	Device types							
		01, 03, 05, 07									
	Lii	mits	Delta	Lir	nits	Delta					
	Min	Max		Min	Max						
R _{DS}	-7.8 V		±30 mV	-10.75 V		75 mV					
I _{S(OFF)}	-1 nA	1 nA	±0.5 nA	-1 nA	1 nA	±0.5 nA					
I _{D(OFF)}	-1 nA	1 nA	±0.5 nA	-1 nA	1 nA	±0.5 nA					

Table IV. Groups C end point electrical parameters ($T_A = 25^{\circ}C$, $\pm V_{CC} = \pm 15 \text{ V}$).

5. PACKAGING

5.1 <u>Packaging requirements</u>. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department of Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

- 6.1 <u>Intended use.</u> Microcircuits conforming to this specification are intended for original equipment design applications and logistic support of existing equipment.
 - 6.2 Acquisition requirements. Acquisition documents should specify the following:
 - Title, number, and date of the specification.
 - b. Complete part number (see 1.2).
 - c. Requirements for delivery of one copy of the quality conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.
 - d. Requirements for certificate of compliance, if applicable.
 - Requirements for notification of change of product or process to acquiring activity in addition to notification of the qualifying activity, if applicable.

- f. Requirements for failure analysis (including required test condition of MIL-STD-883, method 5003), corrective action and reporting of results, if applicable.
- g. Requirements for product assurance options.
- h. Requirements for special carriers, lead lengths, or lead forming, if applicable. These requirements should not affect the part number. Unless otherwise specified, these requirements will not apply to direct purchase by or direct shipment to the Government.
- i. Requirements for "JAN" marking.
- j. Packaging requirements (see 5.1).
- 6.3 <u>Superseding information</u>. The requirements of MIL-M-38510 have been superseded to take advantage of the available Qualified Manufacturer Listing (QML) system provided by MIL-PRF-38535. Previous references to MIL-M-38510 in this document have been replaced by appropriate references to MIL-PRF-38535. All technical requirements now consist of this specification and MIL-PRF-38535. The MIL-M-38510 specification sheet number and PIN have been retained to avoid adversely impacting existing government logistics systems and contractor's parts lists.
- 6.4 <u>Qualification</u>. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Manufacturers List QML-38535 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from DSCC-VQ, 3990 E. Broad Street, Columbus, Ohio 43123-1199.
- 6.5 <u>Abbreviations, symbols, and definitions</u>. The abbreviations, symbols, and definitions used herein are defined in MIL-PRF-38535, MIL-HDBK-1331, and as follows:.

$+V_{CC}$	
+l _{CC} Positive supply current	
-l _{CC} Negative supply current	
V _L Logic supply voltage	
I ₁ Logic supply current	
V _D Drain voltage	
V _S Source voltage	
I _D Drain current	
Is Source current	
I _{D(ON)} Leakage current from an "ON" driver into the switch	vitch
I _{D(OFF)} Leakage current into the drain terminal of an "OFF" sw	FF" switch
I _{s(OFF)} Leakage current into the source terminal of an "OFF" s	'OFF" switch
t _{ON} Switching time as defined in figure 5	
t _{OFF} Switching time as defined in figure 5	
A 1 : 1 16	
V _R Reference voltage	
V _{CTE} Charge transfer error	
V _{CT} Crosstalk between switches	
V _{ISO} Isolation from source to drain of a closed switch	1

6.6 <u>Logistic support.</u> Lead materials and finishes (see 3.4) are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class B (see 1.2.2), lead material and finish A (see 3.4). Longer length leads and lead forming should not affect the part number.

6.7 <u>Substitutability</u>. The cross-reference information below is presented for the convenience of users. Microcircuits covered by this specification will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent operational performance characteristics across military temperature ranges or reliability factors equivalent to MIL-M-38510 device types and may have slight physical variations in relation to case size. The presence of this information should not be deemed as permitting substitution of generic-industry types for MIL-M-38510 types or as a waiver of any of the provisions of MIL-PRF-38535.

Military device type	Generic-industry type
01	181A
02	182A
03	184A
04	185A
05	187A
06	188A
07	190A
08	191A

6.8 <u>Changes from previous issue</u>. Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodians: Army – CR Navy - EC Air Force - 11

NASA - NA

DLA – CC

Preparing activity: DLA - CC

Project 5962-1994

Review activities:

Army – MI, SM

Navy - AS, CG, MC, SH, TD

Air Force – 03, 19, 99