

MPSA26**NPN EPITAXIAL
SILICON DARLINGTON TRANSISTOR**

T-29-29

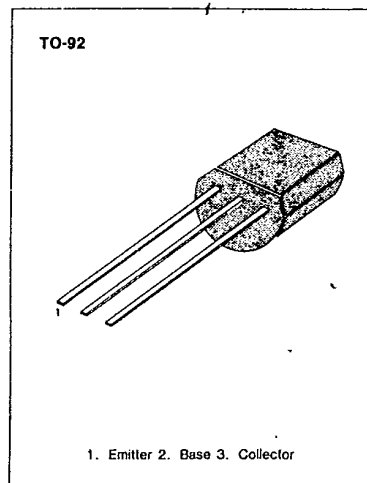
DARLINGTON TRANSISTOR

- Collector-Emitter Voltage: $V_{CES} = 50V$
- Collector Dissipation: $P_C (\text{max}) = 625mW$

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CES}	50	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Collector Dissipation	P_C	625	mW
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ C$

* Refer to MPSA25 for graphs

**ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)**

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	BV_{CES}	$I_C = 100\mu A, V_{BE} = 0$	50			V
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = 100\mu A, I_E = 0$	50			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 40V, I_E = 0$			100	nA
Emitter Cut-off Current	I_{EBO}	$V_{BE} = 10V, I_C = 0$			100	nA
Collector Cut-off Current	I_{CES}	$V_{CE} = 40V, V_{BE} = 0$			500	nA
*DC Current Gain	h_{FE}	$I_C = 10mA, V_{CE} = 5V$ $I_C = 100mA, V_{CE} = 5V$	10K 10K			
*Collector-Emitter Saturation Voltage	$V_{CE} (\text{sat})$	$I_C = 100mA, I_B = 0.1mA$			1.5	V
*Base-Emitter On Voltage	$V_{BE} (\text{on})$	$I_C = 100mA, V_{CE} = 5V$			2	V

* Pulse Test: Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$ 

MPSA45**NPN EPITAXIAL SILICON TRANSISTOR**

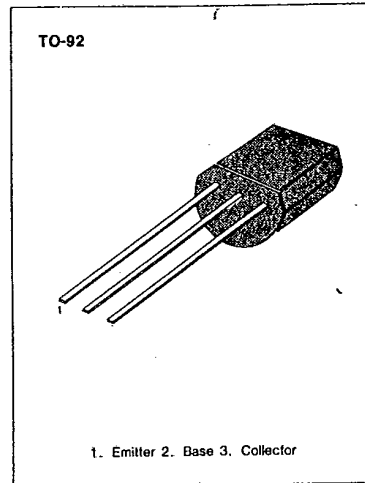
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HIGH VOLTAGE TRANSISTOR

- Collector-Emitter Voltage: $V_{CE0} = 350V$
- Collector Dissipation: $P_C (max) = 625mW$

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	400	V
Collector-Emitter Voltage	V_{CEO}	350	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	300	mA
Collector Dissipation	P_C	625	mW
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ C$

**ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)**

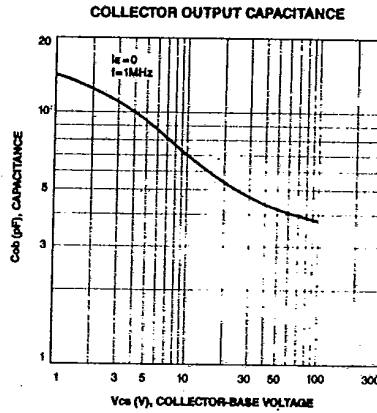
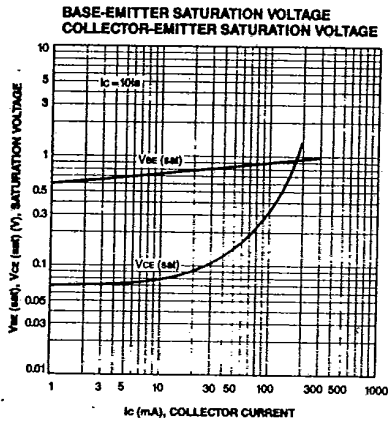
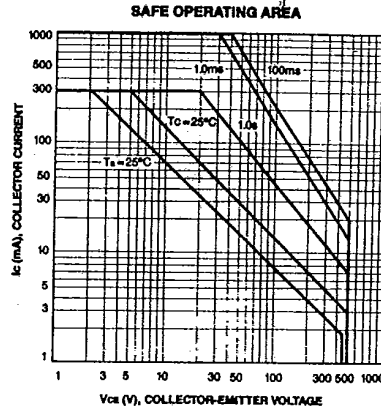
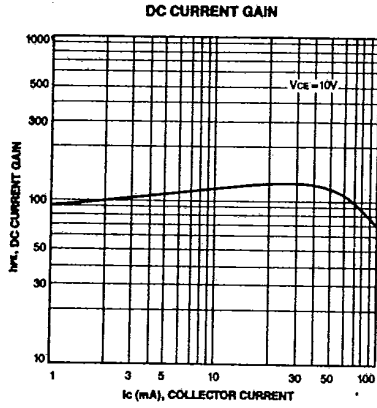
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
*Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 1mA, I_B = 0$	350			V
Collector-Emitter Breakdown Voltage	BV_{CES}	$I_C = 100\mu A, V_{BE} = 0$	400			V
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = 100\mu A, I_E = 0$	400			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = 10\mu A, I_C = 0$	6			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 320V, I_E = 0$			100	nA
Emitter Cut-off Current	I_{EBO}	$V_{BE} = 4V, I_C = 0$			100	nA
Collector Cutoff Current	I_{CES}	$V_{CE} = 320V, V_{BE} = 0$			500	nA
*DC Current Gain	h_{FE}	$I_C = 1mA, V_{CE} = 10V$	40			
		$I_C = 10mA, V_{CE} = 10V$	50		200	
		$I_C = 50mA, V_{CE} = 10V$	45			
		$I_C = 100mA, V_{CE} = 10V$	40			
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1mA, I_B = 0.1mA$			0.4	V
		$I_C = 10mA, I_B = 1mA$			0.5	V
		$I_C = 50mA, I_B = 5mA$			0.75	V
*Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10mA, I_B = 1mA$			0.75	V
Output Capacitance	C_{ob}	$V_{CB} = 20V, I_E = 0$ $f = 1MHz$			7	pF

* Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$ 

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MPSA55**PNP EPITAXIAL SILICON TRANSISTOR**

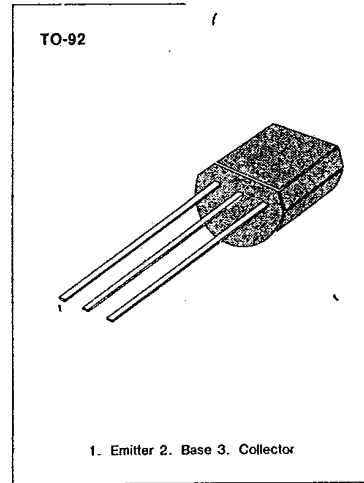
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AMPLIFIER TRANSISTOR

- Collector-Emitter Voltage: $V_{CE0}=60V$
- Collector Dissipation: $P_C(\text{max})=625mW$

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ C$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	500	mA
Collector Dissipation	P_C	625	mW
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ C$

**ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)**

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
*Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=1mA, I_B=0$	60			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=100\mu A, I_C=0$	4			V
Collector Cut-off Current	I_{CEO}	$V_{CE}=60V, I_B=0$			100	nA
Collector Cut-off Current	I_{CBO}	$V_{CB}=60V, I_E=0$			100	nA
DC Current Gain	h_{FE}	$I_C=10mA, V_{CE}=1V$	50			
		$I_C=100mA, V_{CE}=1V$	50			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100mA, I_B=10mA$			0.25	V
Current Gain Bandwidth Product	f_T	$I_C=100mA, V_{CE}=1V$ $f=100MHz$	50			MHz
Base-Emitter On Voltage	$V_{BE(on)}$	$I_C=100mA, V_{CE}=1V$			1.2	V

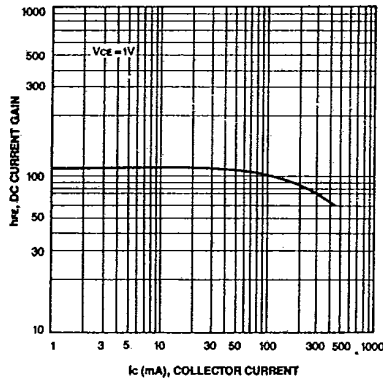
* Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

MPSA55

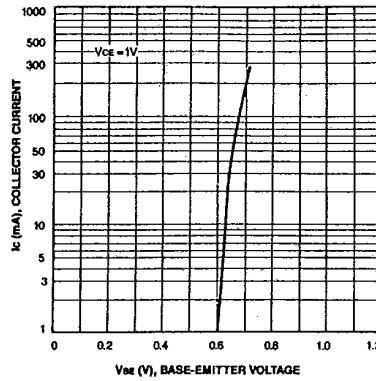
PNP EPITAXIAL SILICON TRANSISTOR

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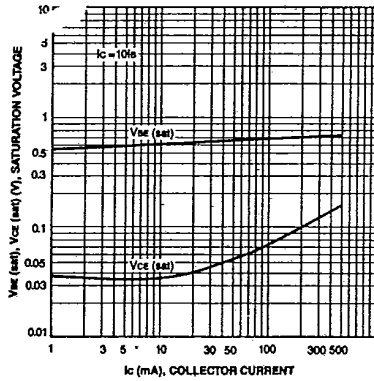
DC CURRENT GAIN



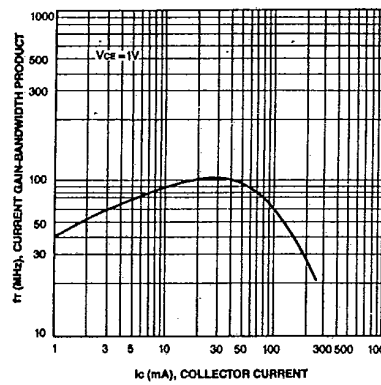
BASE-EMITTER ON VOLTAGE



COLLECTOR-EMITTER SATURATION VOLTAGE
BASE-EMITTER SATURATION VOLTAGE



CURRENT GAIN-BANDWIDTH PRODUCT



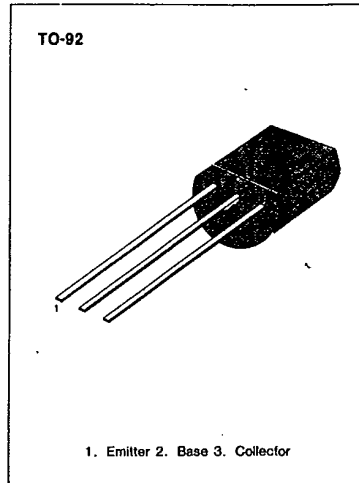
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MPSA62**PNP EPITAXIAL
SILICON DARLINGTON TRANSISTOR****DARLINGTON TRANSISTOR**

- Collector-Emitter Voltage: $V_{CES} = 20V$
- Collector Dissipation: $P_C (\text{max}) = 625mW$

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CES}	20	V
Collector-Base Voltage	V_{CBO}	20	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Collector Dissipation	P_C	625	mW
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ C$



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ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

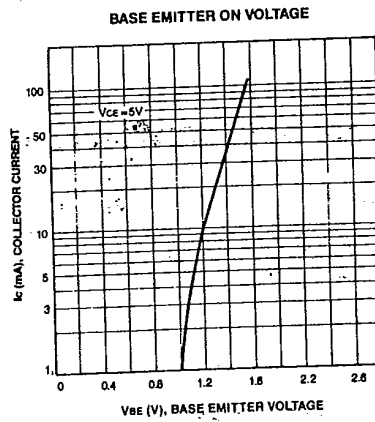
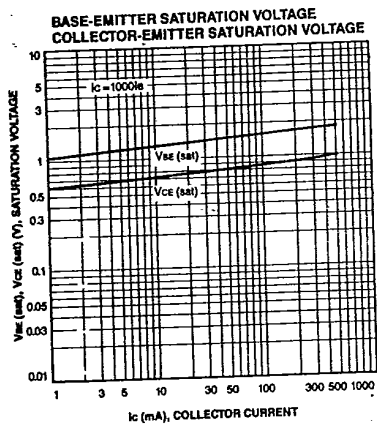
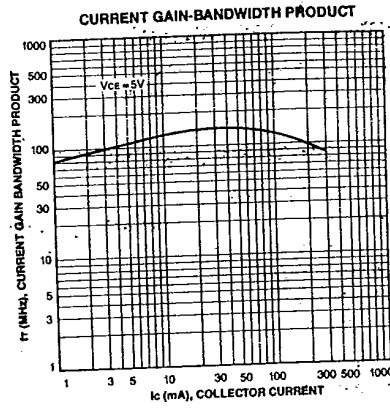
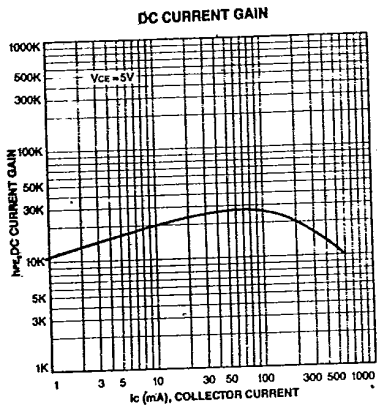
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	BV_{CES}	$I_C = 100\mu A, V_{BE} = 0$	20			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 15V, I_E = 0$			100	nA
Emitter Cut-off Current	I_{EBO}	$V_{BE} = 10V, I_C = 0$			100	nA
*DC Current Gain	h_{FE}	$I_C = 10mA, V_{CE} = 5V$	20K			
*Collector-Emitter Saturation Voltage	$V_{CE} (\text{sat})$	$I_C = 10mA, I_B = 0.01mA$			1.0	V
*Base-Emitter On Voltage	$V_{BE} (\text{on})$	$I_C = 10mA, V_{CE} = 5V$			1.4	V

* Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$ 

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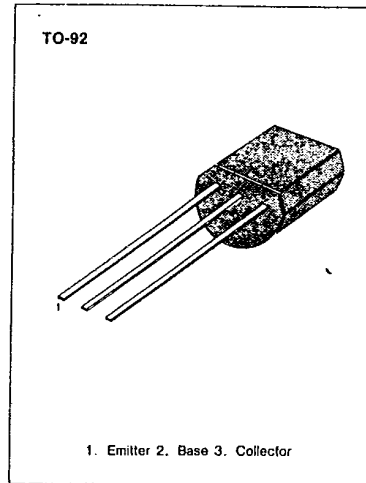
DARLINGTON TRANSISTOR

- Collector-Emitter Voltage: $V_{CES} = 30V$
- Collector Dissipation: $P_C (\text{max}) = 625mW$

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CES}	30	V
Collector-Base Voltage	V_{CBO}	30	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Collector Dissipation	P_C	625	mW
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ C$

* Refer to MPSA62 for graphs



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ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	BV_{CES}	$I_C = 100\mu A, V_{BE} = 0$	30			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 30V, I_E = 0$			100	nA
Emitter Cut-off Current	I_{EBO}	$V_{BE} = 10V, I_C = 0$			100	nA
*DC Current Gain	h_{FE}	$I_C = 10mA, V_{CE} = 5V$ $I_C = 100mA, V_{CE} = 5V$	5K 10K			
*Collector-Emitter Saturation Voltage	$V_{CE} (\text{sat})$	$I_C = 100mA, I_B = 0.1mA$			1.5	V
*Base-Emitter On Voltage	$V_{BE} (\text{on})$	$I_C = 100mA, V_{CE} = 5V$			2	V
Current Gain Bandwidth Product	f_T	$I_C = 100mA, V_{CE} = 5V$ $f = 100MHz$	125			MHz

* Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$