



## 2 Watt DC/DC Converters for LAN Transceiver Chips

### Key Features

- Meets FCC Section 15, Sub Part J, A and B
- Continuous short circuit protection with foldback on 2E models
- No derating to 71° C
- Wide input range



The LAN series of DC/DC converters is designed to provide power and isolation for Local Area Network (LAN) transceiver chips. The LAN series covers both the Cheapernet and Ethernet LAN (IEEE 802.3 - 10 base 5 and 10 base 2 Standards) approach. The use of a compact and inexpensive DC/DC converter as a power source for these transceiver chips allows conversion of the normal bus power to the isolated power required. The series operates from inputs of 5 and 12 VDC for Cheapernet with input/output isolation of 500 VDC. Ethernet converters offer a wide input range of 10.20 to 15.75 VDC with 2500 VDC isolation.

Reliability Incorporated also provides custom designed DC/DC Converters to meet customer specifications. Reliability Incorporated is based in Houston, Texas, USA and is a leading provider of semiconductor processing equipment and DC/DC converters. Corporate headquarters, located in Houston, TX, USA is ISO 9001 certified. DC/DC converters are manufactured in Costa Rica.

### General Electrical Specifications

(Specifications at Nominal Input and 25 C, nominal input voltage and rated output current unless otherwise noted.)

#### 2QP & 2SP Series

Parameter	Limits	Conditions
<b>Input Voltage Range</b>		
5V Devices	4.75 - 5.25 VDC	
12 V Devices	11.4 - 12.6 VDC	
<b>Input Filter</b>	Filter Capacitor	All Device Types
<b>Input/Output Isolation Voltage Resistance</b>	500 VDC (Min) 10 <sup>3</sup> megohms (Min)	
<b>Output Voltage Accuracy</b>	± 5%	Nom. Line at Full Load
<b>2QP &amp; 2SP Device Types</b>	See Graph*	
<b>Load Regulation</b>	100mV P-P (Max)	20Hz-20MHz Bandwidth
<b>Output Noise/Ripple</b>	10% of Full Load	All Units
<b>Minimum Load Required</b>	See Graph*	
<b>Line Regulation</b>	Momentary	All Units
<b>Short Circuit Protection</b>	-25°C to +71°C	
<b>Operating Temperature</b>	None	To 71°C
<b>Derating</b>	-55°C to +125°C	
<b>Storage Temperature</b>	Yes	Class B Radiated, Class A Conducted
<b>FCC Sec 15, Sub Part J</b>		



### General Electrical Specifications

(Specifications at Nominal Input and 25 C, nominal input voltage and rated output current unless otherwise noted.)

#### 2E12R9 Series

Parameter	Limits	Conditions
Input Voltage Range	10.2 - 15.75VDC	All Devices
Input Filter	Filter Capacitor	All Device Types
Input/Output Isolation Voltage Resistance	2500 VDC (Min) 10 <sup>3</sup> Megohms (Min)	All Device Types
Output Voltage Accuracy	± 5%	Nom. Line at Full Load
Load Regulation	50mV	Nom. Line, NL to FL
Line Regulation	300mV	Full Input Range, FL
Output Noise/Ripple	100mV, P-P (Max)	20Hz-20MHz Bandwidth
Short Circuit Protection Duration	Current Foldback Continuous	All Units
Switching Frequency	30 KHz	Typical
Operating Temperature Derating	-25°C to +71°C None	To 71°C
Storage Temperature	-55°C to +125°C	
External Heatsink Case Encapsulant Heat Dissipation FCC Sec 15, Sub Part J	Recommended For Still Air Environments UL94V-0 UL94H-B 45°C Case Rise Yes	High Line, Full Load Class B Radiated, Class A Conducted

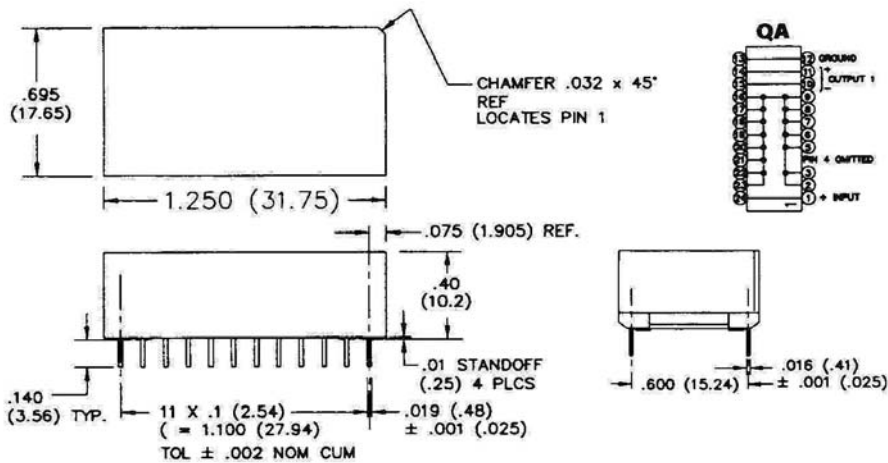
### Selection Guide

Device Type	Input Voltage Range VDC	Typical Input Current (A) @ Max Load	Output Voltage VDC	Max Output Current (mA)	Package/ Pinout
2QP5U9	4.75 - 5.25	.600	-9	250	QA
2SP5U9	4.75 - 5.25	.600	-9	250	SA
2QP12U9	11.40 - 12.60	.250	-9	250	QA
2E12R9	10.20 - 15.75	.350	-9	250	2E
2SP12U9	11.40 - 12.60	.250	-9	250	SA

Reliability Incorporated Locations		
Headquarters	Sales	Far East Sales
Reliability Incorporated P.O. Box 218370 Houston, Texas 77218 USA Tel: 281 492-0550 Fax 281 492-0615 <a href="http://www.relinc.com">www.relinc.com</a> ISO 9001 Certified	Reliability Incorporated Tel: 281 492-0550 Fax 281 492-0615 <a href="mailto:dcinfo@relinc.com">dcinfo@relinc.com</a> <a href="http://www.dc-dcpower.com">www.dc-dcpower.com</a> ISO 9001 Certified	Reliability Singapore Pte. Ltd. Blk 103 Boon Keng Rd. Singapore 339774 Tel: 65 299 4938 Fax: 65 299 4829 ISO 9002 Certified

# Mechanical Specification (dimensions in inches)

## QPAC



### NOTES (ALL DEVICES & PACKAGES):

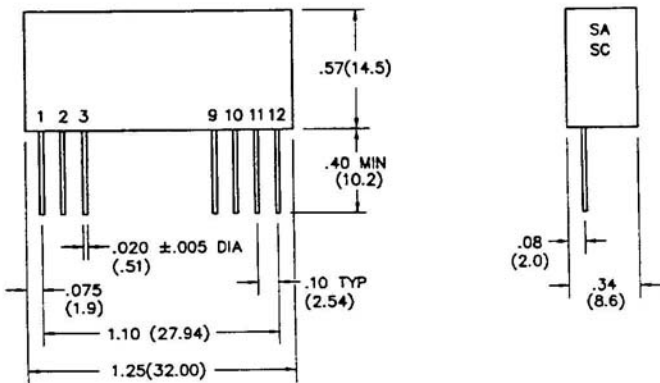
1. All dimensions in parentheses are metric.
2. Tolerances unless otherwise specified: .xx ± .03 (.76) .xxx = ± .015 (.38)

**MATERIALS:** Base and cover: Black Stanyl 4/6 nylon TE250F6 UL 94V-0 rated. Post style contact: half hard brass.

**PLATING:** Post style contact: 100µ" min 60/40 bright tin/lead per Mil-T-10727 over 50µ" min nickel per QQ-N-290.

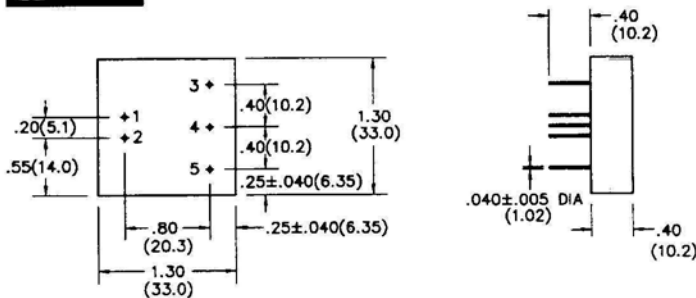
Pin 4 is missing.

## SA



PIN	PIN CONNECTIONS
1	+INPUT
2	NC
3	NC
9	NC
10	-OUTPUT
11	+OUTPUT
12	-INPUT

## 2E



SINGLE 9V OUTPUT	
PIN	PIN CONNECTIONS
1	+INPUT
2	-INPUT
3	NO CONNECTION
4	OUTPUT COMMON
5	-OUTPUT