EM600 SERIES
Single and Dual Output 1 and 1.5 Watt DC/DC Converters

- 70% Efficiency
- Unregulated Outputs
- 24-Pin DIP Package
- No Derating
- Short Circuit Protection
- 2 Year Warranty

This series of low cost, unregulated DC/DC converters comes in ultra-miniature 24-Pin DIP packages. They include a Pi network input filter that suppresses input reflected ripple current. These DC/DC converters are ideal for high density PC board applications where space is at a premium and where high efficiency is more important than line and load regulation.

Pertinent specifications include 70% efficiency, ±3% output voltage accuracy, 100 mV P-P output ripple and noise, and 300 VDC Isolation. Switching frequency is 35 kHz to 60 kHz and operating temperature range is -25°C to +71°C with no output derating. The case size is 1.25 × 0.8 × 0.4 inches.

SPECIFICATIONS

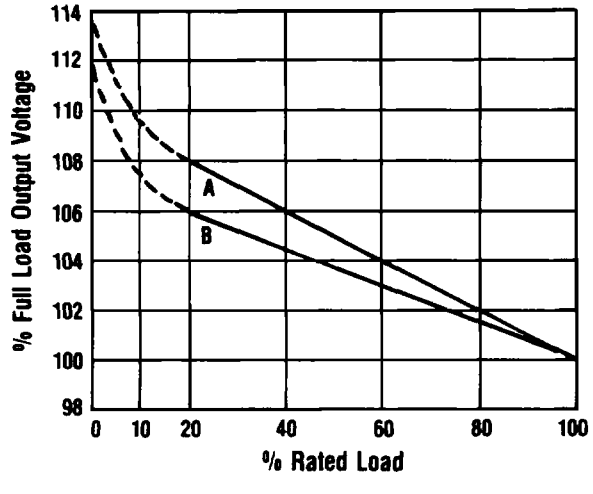
All specifications are typical at nominal line, full load and 25°C unless otherwise noted.

OUTPUT SPECIFICATIONS		
Voltage Accuracy		±3.0%, max.
Ripple and Noise[1]	20 MHz BW	100 mV P-P, max.
Short Circuit Protection		Short Term
INPUT SPECIFICATIONS		
Input Voltage Range	5 VDC Input Models 12 VDC Input Models	4.5 VDC to 5.5 VDC 10.8 VDC to 13.2 VDC
Input Filter		Pi Network

GENERAL SPECIFICATIONS		
Efficiency		60-80%
Isolation Voltage		300 VDC, min.
Isolation Capacitance		80 pF
Isolation Resistance		10^8 ohms
Switching Frequency		35 kHz to 60 kHz
ENVIRONMENTAL SPECIFICATIONS		
Operating Temperature Range	Ambient Case	-25°C to +71°C 95°C max.
Derating		None
Storage Temperature Range		-40°C to +125°C
Humidity	Non-Condensing	20% to 95% RH
Cooling		Free-Air Convection
MTBF		1,000,000 hours
PHYSICAL SPECIFICATIONS		
Weight		0.5 oz. (14 grams)
Case Material		Non-Conductive Black Plastic

Notes:
(1) With 15 μF, 35V tantalum capacitor across each output.

Typical Load Regulation



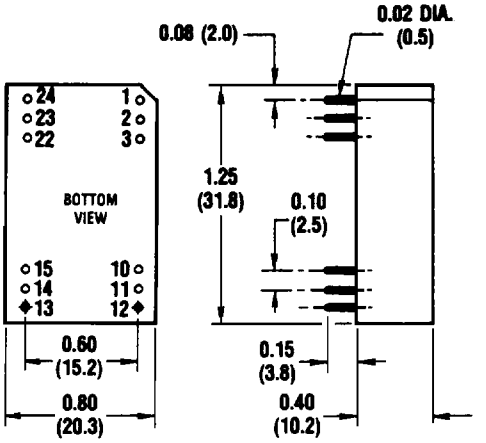
Line A–EM621
Line B–All Other Models

East Coast 1-800-733-9288 • West Coast 1-800-769-7274

Input Voltage	Output Voltage	Output Current	Input Current		Reflected Ripple Current	Regulation		Case	Model Number
			No Load	Full Load		Line[2]	Load[3]		
With Input Filter									
5 VDC	5 VDC	220 mA	115 mA	345 mA	90 mA P-P	1.2%	6%	F	EM621
5 VDC	12 VDC	125 mA	115 mA	450 mA	90 mA P-P	1.2%	6%	F	EM623
5 VDC	±12 VDC	±62 mA	115 mA	450 mA	90 mA P-P	1.2%	6%	F	EM671
5 VDC	±15 VDC	±50 mA	115 mA	450 mA	90 mA P-P	1.2%	6%	F	EM672
12 VDC	5 VDC	220 mA	45 mA	125 mA	90 mA P-P	1.2%	6%	F	EM631
12 VDC	±12 VDC	±62 mA	45 mA	170 mA	90 mA P-P	1.2%	6%	F	EM681

Pin Connections		
Pin	**Single Output**	**Dual Output[5]**
1	+V Input	+V Input
2	Do Not Connect	−V Output
3	Do Not Connect	Common
10	−V Output	Common
11	+V Output	+V Output
12	−V Input	−V Input
13	−V Input	−V Input
14	+V Output	+V Output
15	−V Output	Common
22	Do Not Connect	Common
23	Do Not Connect	−V Output
24	+V Input	+V Input

CASE F



ALL DIMENSIONS IN INCHES (mm)

Notes:
(2) Stated line regulation is for a 1% change in input voltage
(3) Stated load regulation is for a 20% to 100% change in output load. Also see typical load regulation graph.
(4) Fixed frequency design provides for easier input filtering and better noise performance.
(5) On dual output models the four common pins are internally connected. The outputs can be returned through one pin while the others remain floating.