

SEMICONDUCTOR CIRCUITS, INC.

SUBSIDIARY OF ASTEC AMERICA, INC.

JA/JP SERIES

15 WATT DC/DC POWER CONVERTER

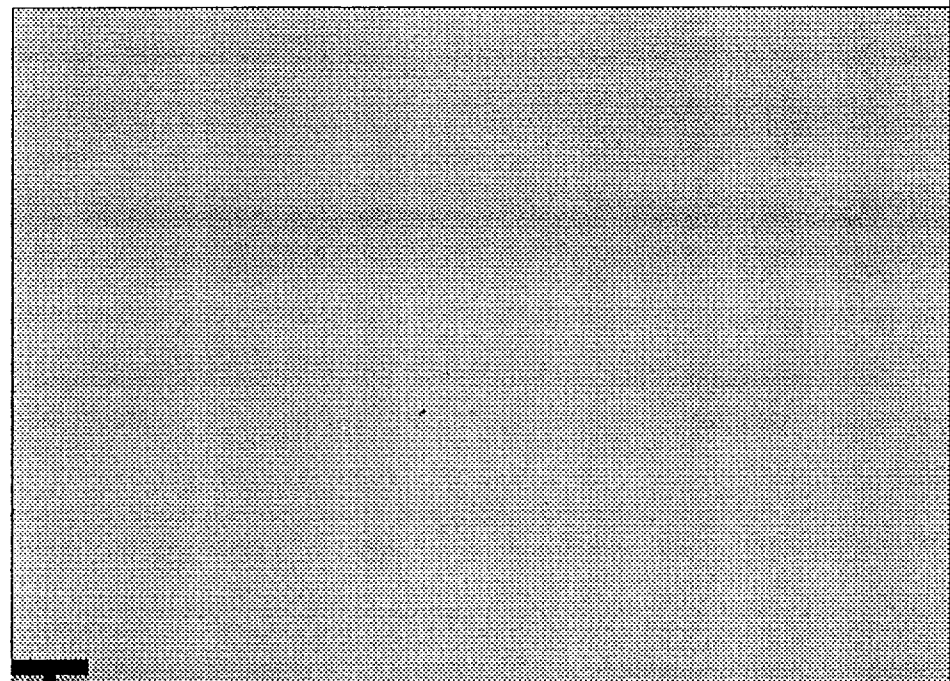
SINGLE, DUAL, AND TRIPLE OUTPUTS

FEATURES

- *4:1 Ultrawide input range*
- *Efficiency to 85%*
- *Six-sided continuous shielded case*
- *Surface mount technology*

APPLICATIONS

The JA/JP Series is ideally suited for space critical applications targeting telecommunications and small systems instrumentation markets.



THE JA/JP SERIES is a family of single, dual, and triple output encapsulated DC/DC converters supplying 15 watts of output power. Features include MOSFET design, state-of-the-art surface mount technology, ultra-wide inputs of 9 to 36 and 20 to 72 Vdc, 500 Vdc input/output isolation, operating temperature range of -25°C to +71°C and no derating. All models are packaged in a six-sided shielded case measuring 2.0" x 2.0" x 0.4".



ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Limits
Input Voltage		9-36 Vdc; 20-72 Vdc
Input Filter		PI Filter
Input Surge Protection		100 V for 100 mS
Reflected Ripple Current		< 100 mA
Input Current	Nominal Line — Full Load — 20% Load min. — Inhibit	(9-36 Vdc)1040 mA (20-72 Vdc)385 mA 230 mA 90 mA 7 mA 7 mA
Setting Accuracy	Single Outputs and Dual Outputs Triple Outputs	Main ± 1% Maximum ± 1.0% Maximum Aux. ±3.0% Maximum
Trim Adjustability	JP Single and Duals	± 10% Typical
Line Regulation	Low - High Line	Main ± 0.25% Aux. ± 2.0%
Load Regulation	Singles (See Note 3) Duals (See Note 3) Triples (See Note 4)	Main ± 0.25% ± 0.25% ± 0.25% Aux. ± 3.0%
Efficiency		85% Typical
Temperature Coefficient		0.02%/°C Maximum
Voltage Stability	24 Hours/Full Load	Main ± 0.05% Max. Aux. ± 1.0% Max.
Transient Response	25% Load Step	150 mV Peak Transient settling within 1% within 1 ms
Output PARD See Note (2)	Single and Dual Triple	Main 75 mV P-P Max. 50 mV P-P Max. Aux. 100 mV P-P Max.
Overshoot/Undershoot		None
Overvoltage Protection Threshold	5 V Output 12 V Output 15 V Output	6.2 V ± 5% Zener Clamp 15 V ± 5% Zener Clamp 18 V ± 5% Zener Clamp
Short Circuit Protection	Continuous, Auto Recovery	
Total Output Power	71° C Ambient Temperature	15 Watts Maximum
Isolation Voltage	Input to Output	500 Vdc
Isolation Resistance		10 Megohms Minimum
Switching Frequency		125 KHz ±10%
Remote On/Off (with respect to Pin 2)	ON OFF JP Series Only	2.5 V or Open Pin 4 to Pin 2 2.0 V or Jumper Pin 4 to Pin 2 Pins 2 and 4
Temperature	Operating (standard model) Case Temperature Non Operating	-25°C to +71°C +105°C Max. -40°C to +125°C
Cooling		Free Air Convection
Relative Humidity	Non-Condensing	5% to 95%
Vibration	Three Orthogonal Axes, Random Vibration 10 Minute Test for Each Axes	2.4G RMS (approximately) 5 Hz to 500 Hz
MTBF	Per MIL-217	385,000 Hours
Size		2.0" x 2.0" x 0.4" ±0.03"
Weight		1.84 oz.
Case Material	Case Tied to Input Pin #1 (48 V) Case Tied to Input Pin #2 (18 V)	Six-Sided Shielded, Black Anodized Aluminum
Flammability Rating		Meets UL 94V-0

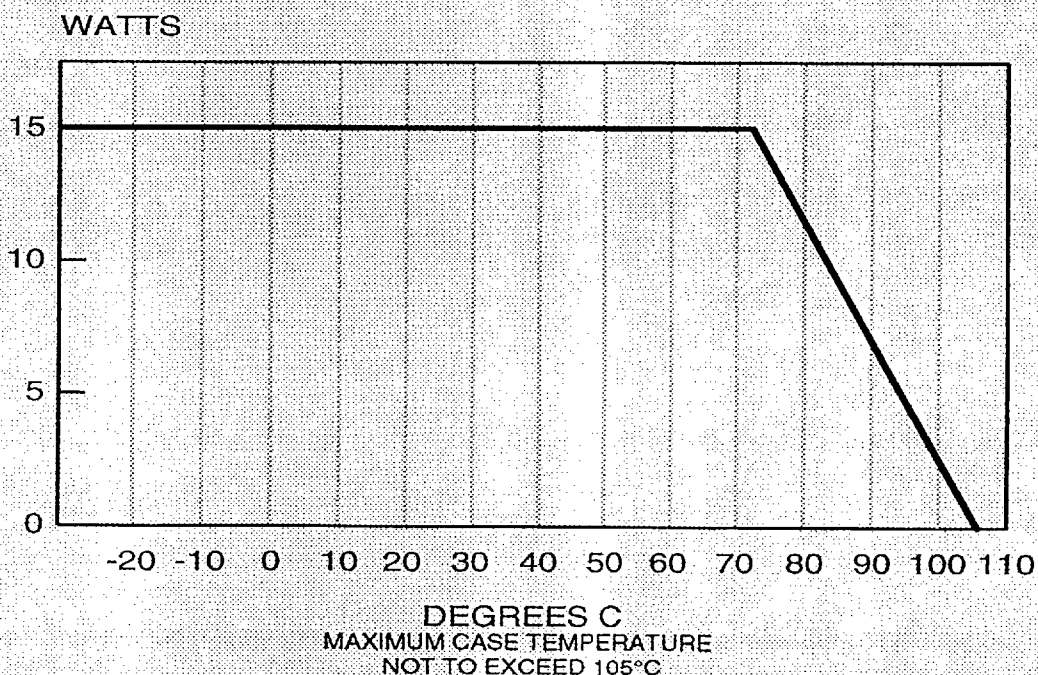
NOTES: (1) Specifications are typical at nominal line, full output load, 25°C ambient temperature unless otherwise noted.
(2) Measured with 3.3 MF tantalum capacitor across each output.
(3) Load regulation measured from min. to max. with min. 10% of full load.
(4) Load regulation measured from min. to max. all outputs with min. 20% of full load on main output - 10 to 20% min. load required on auxilliary outputs.

OUTPUT DATA/ORDERING INFORMATION

Model Number	Model Number	Input Voltage Range	Output Voltage	Output Current	Power Out
JA11-300-18	JP11-300-18	9-36 Vdc	5 Vdc	3000 mA	15 Watts
JA11-300-48	JP11-300-48	20-72 Vdc	5 Vdc	3000 mA	15 Watts
JA12-125-18	JP12-125-18	9-36 Vdc	12 Vdc	1250 mA	15 Watts
JA12-125-48	JP12-125-48	20-72 Vdc	12 Vdc	1250 mA	15 Watts
JA13-100-18	JP13-100-18	9-36 Vdc	15 Vdc	1000 mA	15 Watts
JA13-100-48	JP13-100-48	20-72 Vdc	15 Vdc	1000 mA	15 Watts
JA22-125-18	JP22-125-18	9-36 Vdc	±12 Vdc	±625 mA	15 Watts
JA22-125-48	JP22-125-48	20-72 Vdc	±12 Vdc	±625 mA	15 Watts
JA23-100-18	JP23-100-18	9-36 Vdc	±15 Vdc	±500 mA	15 Watts
JA23-100-48	JP23-100-48	20-72 Vdc	±15 Vdc	±500 mA	15 Watts
	JP34-210-18	9-36 Vdc	+5 /±12 Vdc	1500/±310 mA	15 Watts
	JP34-210-48	20-72 Vdc	+5 /±12 Vdc	1500/±310 mA	15 Watts
	JP35-200-18	9-36 Vdc	+5 /±15 Vdc	1500/±250 mA	15 Watts
	JP35-200-48	20-72 Vdc	+5/±15 Vdc	1500/±250 mA	15 Watts

OPERATING LIMITS AND OUTPUT POWER RANGE

-25°C TO +71°C (no derating)

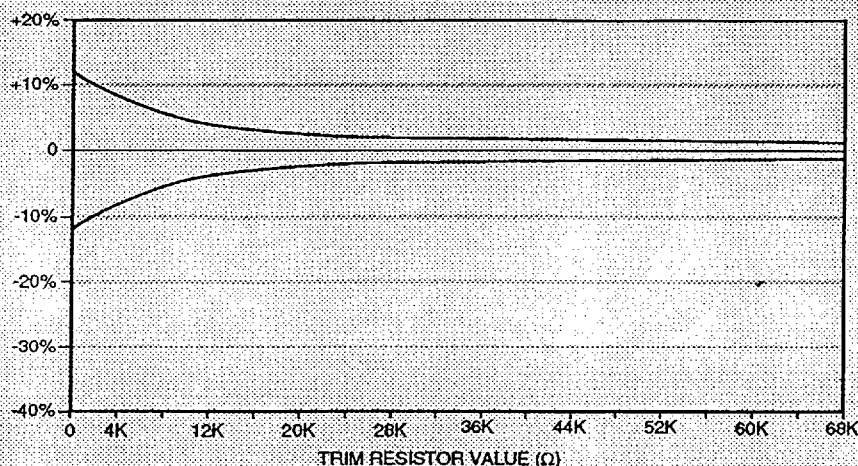


OUTPUT VOLTAGE TRIM PROCEDURE

Output Voltage Trim Procedure: The output voltage(s) can be trimmed up or down using either a fixed value resistor or a potentiometer. The trim up resistor should be connected between Pin 7 and Pin 8. The trim down

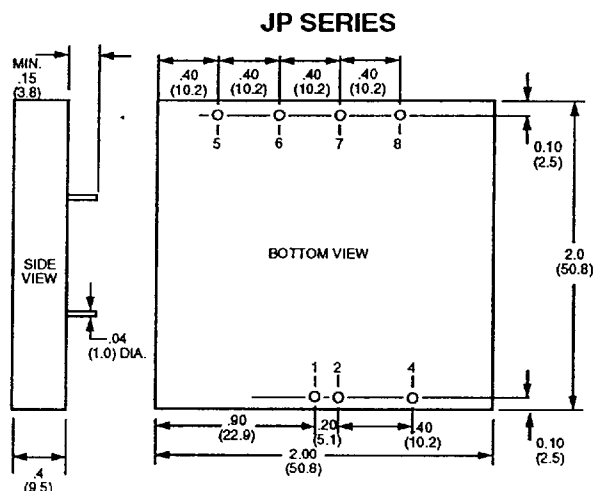
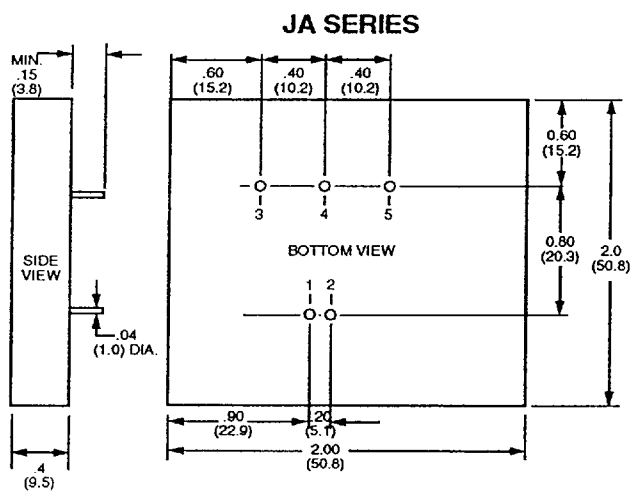
resistor should be connected between Pin 6 and Pin 8 (singles); 5 and 8 (duals). Alternatively, the output voltage(s) can be made continuously adjustable by connecting a 20K pot between Pin 6 and Pin 7 (Singles); 5 and 7 (Duals) with the wiper connected to Pin 8.

SINGLE & DUALS



All specifications are typical at nominal line and full load at +25°C unless otherwise noted. All specifications subject to change without notice.

DIMENSIONS AND CONNECTIONS



SINGLE OUTPUT

PIN	JA SERIES	JP SERIES
1.	+ Input	+ Input
2.	- Input	- Input
3.	+ Output	No Pin
4.	No Pin	Remote Cont.
5.	- Output	No Pin
6.		+ Output
7.		- Output
8.		Trim

DUAL OUTPUT

PIN	JA SERIES	JP SERIES
1.	+ Input	+ Input
2.	- Input	- Input
3.	+ Output	No Pin
4.	Common Out	Remote Cont.
5.	- Output	+ Output
6.		Common Out
7.		- Output
8.		Trim

TRIPLE OUTPUT

PIN	JP SERIES
1.	+ Input
2.	- Input
3.	No Pin
4.	Remote Cont.
5.	+ V2 Out (12V or 15V)
6.	+ V1 Out (5V)
7.	Common Out
8.	- V3 Out (12V or 15V)

Note: All Dimensions are in inches/(mm)

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