

SEMICONDUCTOR CIRCUITS, INC.

SUBSIDIARY OF ASTEC AMERICA, INC.

JA/JP SERIES

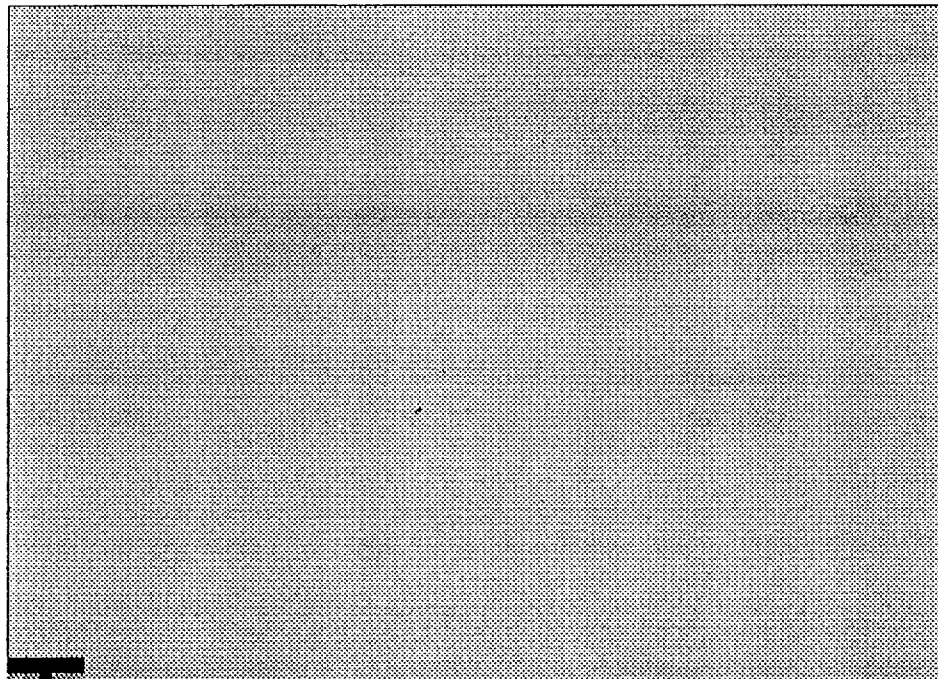
15 WATT DC/DC POWER CONVERTER SINGLE, DUAL, AND TRIPLE OUTPUTS

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	(9-36 Vdc)1040 mA (20-72 Vdc)385 mA
		— 20% Load min.	230 mA 90 mA
		— Inhibit	7 mA 7 mA
Setting Accuracy	Single Outputs and Dual Outputs	Main	Aux.
	Triple Outputs	± 1% Maximum	± 3.0% Maximum
Trim Adjustability	JP Single and Duals	± 10% Typical	
Line Regulation	Low - High Line	Main	Aux.
		± 0.25%	± 2.0%
Load Regulation	Singles (See Note 3)	Main	Aux.
	Duals (See Note 3)	± 0.25%	
	Triples (See Note 4)	± 0.25%	± 3.0%
Efficiency		85% Typical	
Temperature Coefficient		0.02%/°C Maximum	
Voltage Stability	24 Hours/Full Load	Main	Aux.
		± 0.05% Max.	± 1.0% Max.
Transient Response	25% Load Step	150 mV Peak Transient settling within 1% within 1 ms	
Output PARD	Single and Dual	Main	Aux.
See Note (2)	Triple	75 mV P-P Max.	100 mV P-P Max.
		50 mV P-P Max.	
Overshoot/Undershoot		None	
Overvoltage Protection	5 V Output	6.2 V ± 5% Zener Clamp	
Threshold	12 V Output	15 V ± 5% Zener Clamp	
	15 V Output	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	ON	2.5 V or Open Pin 4 to Pin 2	
(with respect to Pin 2)	OFF	2.0 V or Jumper Pin 4 to Pin 2	
	JP Series Only	Pins 2 and 4	
Temperature	Operating (standard model)	-25°C to +71°C	
	Case Temperature	+105°C Max.	
	Non Operating	-40°C to +125°C	
Cooling		Free Air Convection	
Relative Humidity	Non-Condensing	5% to 95%	
Vibration	Three Orthogonal Axes, Random Vibration	2.4G RMS (approximately) 5 Hz to 500 Hz	
	10 Minute Test for Each Axes		
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)	Six-Sided Shielded,	
	Case Tied to Input Pin #2 (18 V)	Black Anodized Aluminum	
Flammability Rating		Meets UL 94V-0	

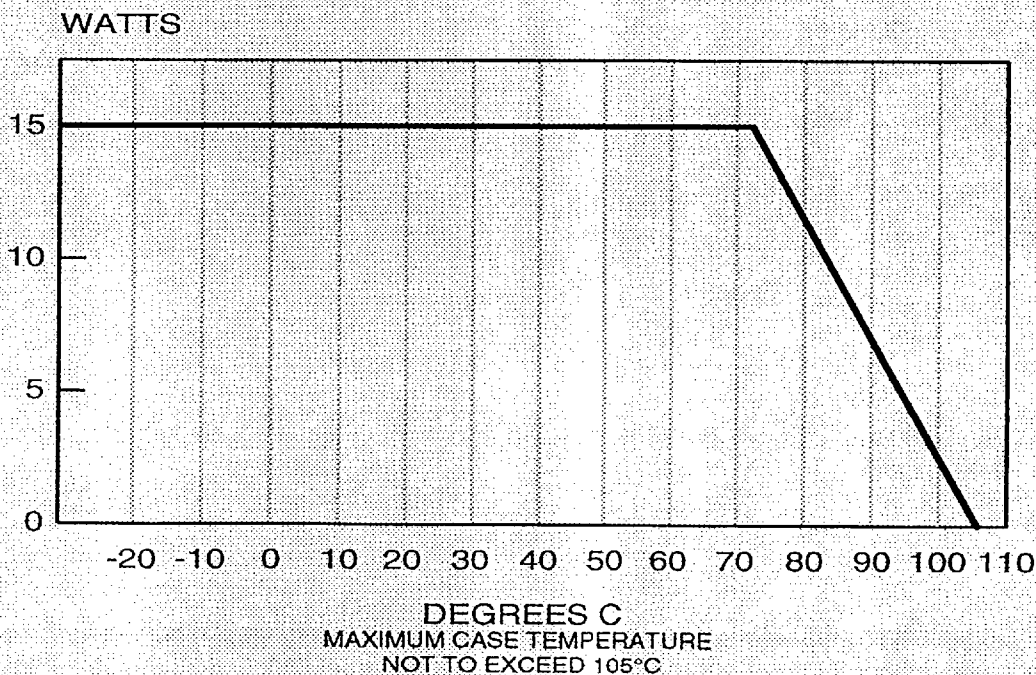
NOTES: (1) Specifications are typical at nominal line, full output load, 25°C ambient temperature unless otherwise noted.
 (2) Measured with 3.3 MF tantalum capacitor across each output.
 (3) Load regulation measured from min. to max. with min. 10% of full load.
 (4) Load regulation measured from min.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

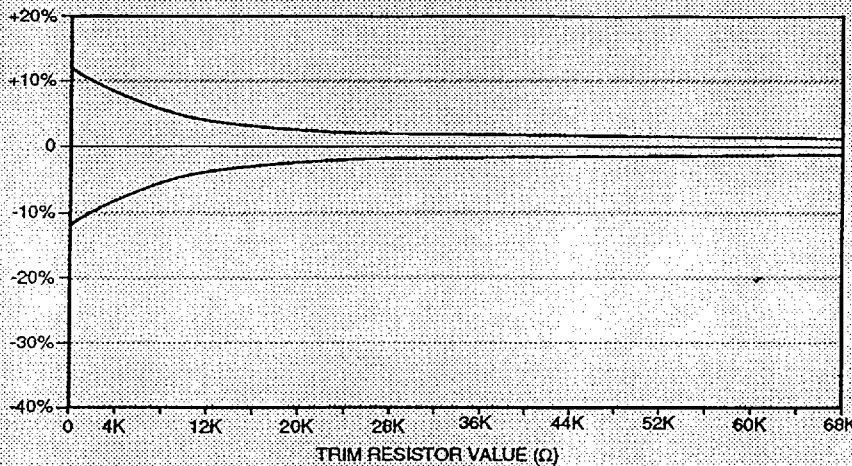


OUTPUT VOLTAGE TRIM PROCEDURE

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

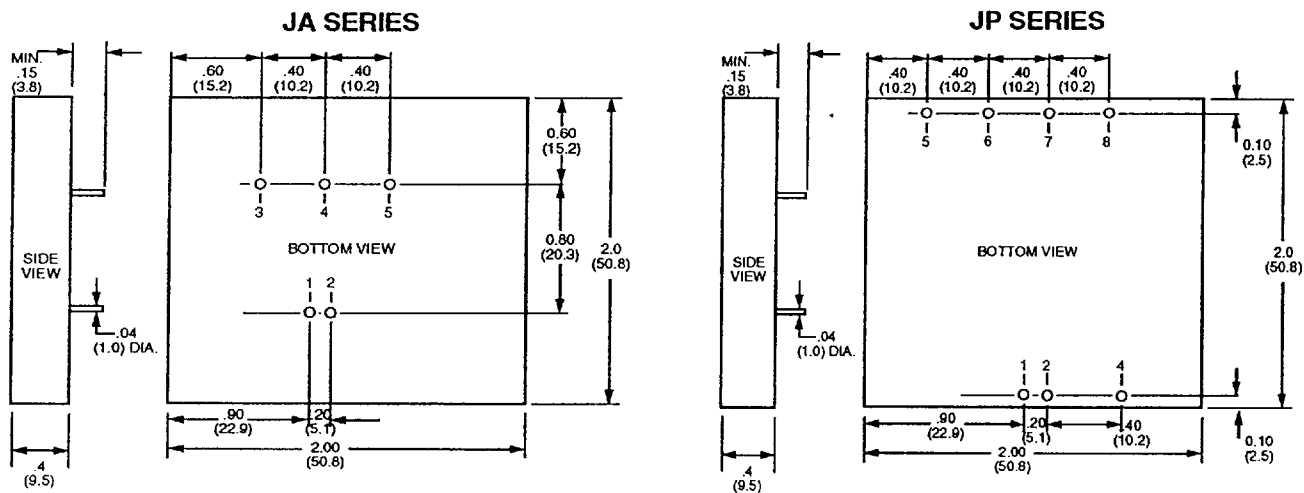
resistor should be connected between Pin 6 and Pin 8 (singles); 5 and 8 (duals). Alternatively, the output voltage(s) can be made continuously adjustable by connecting a 20K pot between Pin 6 and Pin 7 (Singles); 5 and 7 (Duals) with the wiper connected to Pin 8.

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



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

Note: All Dimensions are in inches/(mm)

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