

SV48 SUPERVERTER® 150/200 SERIES

75-240 WATTS 48VDC INPUT 1/2 BRICK INDUSTRY STANDARD

DESCRIPTION

The SuperVerter 48 Series (150/200W) are high power density and high dynamic response DC-DC converters designed for use in telecom, wireless, and other centralized modular or distributed power systems. The SuperVerter family of DC-DC converters may be used as form, fit, function replacements for the industry standard half bricks. If additional power is required the SV48-XX-200 family provides up to 50% more power than industry standard modules.

FEATURES

- Direct Replacement for Industry Standard
- High Efficiency
- High MTBF (1.8 million hours)
- Constant Frequency
- Clamp Over Voltage Protection
- Remote Sense
- Trim Range: 60% to 110%
- Encapsulated
- High Power Density: up to 87 W/cu.in.
- Low Noise
- -40° to +100° C Baseplate Operation
- Choice of On/Off Logic
- Safety Agency Approved
- Threaded or Thru Mounting Holes
- Optional Pin lengths
- Over Temperature Protection

OPTIONAL FEATURES

For the optional features listed below, simply list the appropriate digit(s) for the features you want in ascending order in the suffix following -150 or -200 in the part number.

Feature Options	Suffix
Negative Logic On/Off is standard	include "1" in the suffix
Positive Logic On/Off is optional	delete "1" from the suffix
Threaded mounting holes, as shown in the outline drawing are standard	no suffix digit required
Optional thru mounting holes (without threads) of 0.130" inside diameter*	include "4" in the suffix
Pin length of 0.20" (5.1mm) is standard	no suffix digit required
Pin length of 0.145" (3.68mm)*	include "6" in the suffix
Pin length of 0.110" (2.79mm)*	include "8" in the suffix

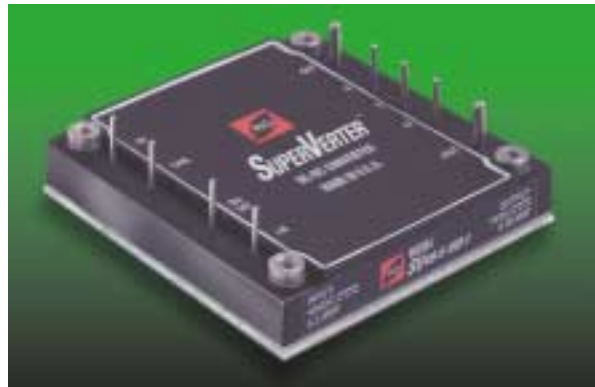
* Minimum order quantities apply.

Examples:

SV48-5-200-1 Standard module negative logic, threaded inserts, 0.20 inch pins.

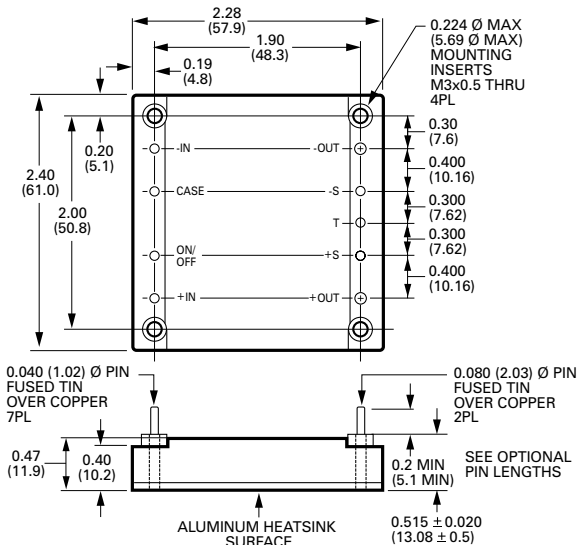
SV48-5-200-48 Positive logic, through hole inserts, 0.110 inch pins.

SV48-5-200-146 Negative logic, through hole inserts, 0.145 inch pins.



MODEL SELECTION

Model	Output Voltage	Output Current
48 VDC (36-75V)		
SV48-2.5-150-1	2.5Vdc	30A
SV48-2.5-200-1	2.5Vdc	50A
SV48-3-150-1	3.3Vdc	30A
SV48-3-200-1	3.3Vdc	45A
SV48-5-150-1	5Vdc	30A
SV48-5-200-1	5Vdc	40A
SV48-12-150-1	12Vdc	12.5A
SV48-12-200-1	12Vdc	20A
SV48-15-150-1	15Vdc	10A
SV48-15-200-1	15Vdc	16A
SV48-24-150-1	24Vdc	6.2A
SV48-24-200-1	24Vdc	10A
SV48-28-150-1	28Vdc	5.35A
SV48-28-200-1	28Vdc	8.6A



SV48 SUPERVERTER (150/200) SERIES SPECIFICATIONS

		Min	Typical	Max	Units	Conditions
Absolute Maximum Ratings: Exceeding absolute maximum ratings may cause permanent damage or reduce reliability.						
PARAMETER	Input Voltage			80	Vdc	Continuous
	Transient Input Voltage			100	Vdc	100 msec max.
	Input/Output Isolation			1500	Vdc	
	Operating Case Temperature	-40		100	°C	
	Storage Temperature	-40		110	°C	
Electrical Specifications: Apply over the entire range of input voltage, output current, and temperature unless indicated.						
INPUT	Input Voltage	36	48	75	Vdc	
Maximum	SV48-2.5-150			3.5	A	See Input Characteristic Curves for each model on our web site www.roassoc.com
Input Current	SV48-2.5-200			6.0	A	
	SV48-3-150			4.5	A	
	SV48-3-200			6.5	A	
	SV48-5-150			6.5	A	
	SV48-5-200			8.7	A	
	SV48-12-150			6.5	A	
	SV48-12-200			10.5	A	
	SV48-15-150			6.5	A	
	SV48-15-200			10.5	A	
	SV48-24-150			6.5	A	
	SV48-24-200			10.5	A	
	SV48-28-150			5.6	A	
	SV48-28-200			9.0	A	
	Input Ripple Rejection		60		dB	
OUTPUT	Voltage Set Point			2	%	48V In, Full Load 25°C
	Load Regulation		0.05	0.2	%	0 to Full Load
	Line Regulation		0.01	0.1	%	Over Vin Range
	Voltage Drift w/Temperature					
	Ripple					See web site: www.roassoc.com
	Current					See Model Selection
	Current Limit Inception		115	130	% Iout max.	Vout = 90% Vout nominal, See Output Characteristic Curves on web site
	Short Circuit Current			170	% Iout max.	Vout = 250 mV, See Output Characteristic Curves on web site
	Transient Response Peak Deviation (0.1A/μsec slew rate)		1		% Vout	50 to 75% or 50 to 25% Load Change
	Transient Response Settling Time (0.1A/μsec slew rate)		100		μsec	Vout within 1% Vout nominal
	Efficiency					See Curves on Page 78 or our web site: www.roassoc.com
	External Load Capacitance	0		10,000	μF	
ISOLATION	Input to Output Capacitance		2000		pF	
	Input to Output Resistance	10			M ohms	
MECHANICAL	Weight		118 (4.2)		g (oz.)	
	Size		0.5x2.4x2.28		inches	See Outline Drawing
	Thermal Resistance Case to Ambient		6.6		°C/W	Case Temperature = 100°C
FEATURES	Trim Range	60		110	%Vout	
	Remote Sense Compensation			0.5	V	
	Over Voltage Clamp					See table on our website: www.roassoc.com
	Over Temperature Shut-down		105		°C	Case Temperature
	Logic On/Off					
	Logic Low: Von/off	0		1.2	V	@ Ion/off = 1 mA
	Ion/off			1.0	mA	@ Von/off = 0V
	Logic High: Von/off			15	V	@ Ion/off = 1 mA
	Ion/off			50	μA	@ Von/off = 15V
	Turn-on Time		8	35	msec	80% load, Vout within 1% Vout nominal

SV48 SUPERVERTER® 50/75/100 SERIES

36-100 WATTS 48VDC INPUT 1/2 BRICK INDUSTRY STANDARD

DESCRIPTION

The SuperVerter 48 Series (50/75/100W) are high power density and high dynamic response DC-DC converters designed for use in telecom, wireless, and other centralized modular or distributed power systems. The SuperVerter family of DC-DC converters may be used as form, fit, function replacements for the industry standard half bricks.

FEATURES

- Direct Replacement for Industry Standard
- High Efficiency
- High MTBF (1.8 million hours)
- Constant Frequency
- Clamp Over Voltage Protection
- Remote Sense
- Trim Range: 60% to 110%
- Encapsulated
- High Power Density
- Low Noise
- -40° to +100° C Baseplate Operation
- Choice of On/Off Logic
- Safety Agency Approved
- Threaded or Thru Mounting Holes
- Optional Pin lengths
- Over Temperature Protection

OPTIONAL FEATURES

For the optional features listed below, simply list the appropriate digit(s) for the features you want in ascending order in the suffix following -50, -75, -100 in the part number.

Feature Options	Suffix
Negative Logic On/Off is standard	include "1" in the suffix
Positive Logic On/Off is optional	delete "1" from the suffix
Threaded mounting holes, as shown in the outline drawing are standard	no suffix digit required
Optional thru mounting holes (without threads) of 0.130" inside diameter*	include "4" in the suffix
Pin length of 0.20" (5.1mm) is standard	no suffix digit required
Pin length of 0.145" (3.68mm)*	include "6" in the suffix
Pin length of 0.110" (2.79mm)*	include "8" in the suffix

* Minimum order quantities apply.

Examples:

SV48-5-100-1 Standard module negative logic, threaded inserts, 0.20 inch pins.

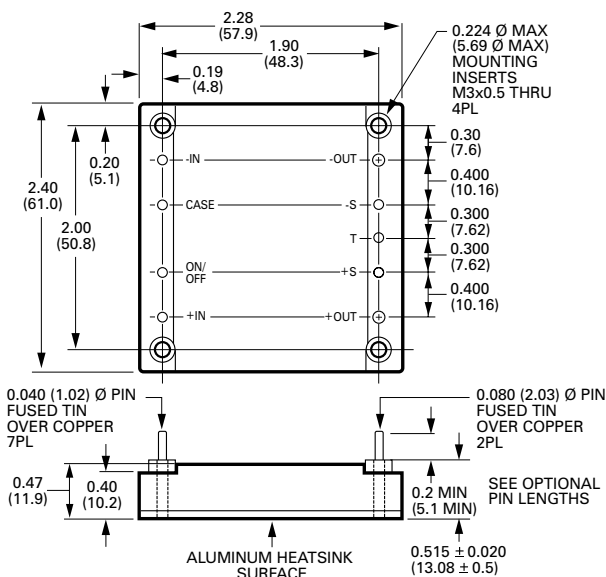
SV48-5-100-48 Positive logic, through hole inserts, 0.110 inch pins.

SV48-5-100-146 Negative logic, through hole inserts, 0.145 inch pins.



MODEL SELECTION

Model	Output Voltage	Output Current
48 VDC (36-75V)		
SV48-3.3-50-1	3.3V	10A
SV48-3.3-75-1	3.3V	15A
SV48-3.3-100-1	3.3V	20A
SV48-5-50-1	5V	10A
SV48-5-75-1	5V	15A
SV48-5-100-1	5V	20A
SV48-12-50-1	12V	4.2A
SV48-12-75-1	12V	6.3A
SV48-12-100-1	12V	8.3A
SV48-24-50-1	24V	2.1A
SV48-24-75-1	24V	3.1A
SV48-24-100-1	24V	4.2A



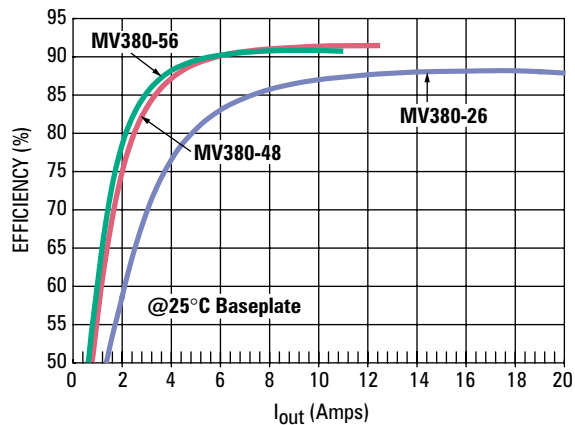
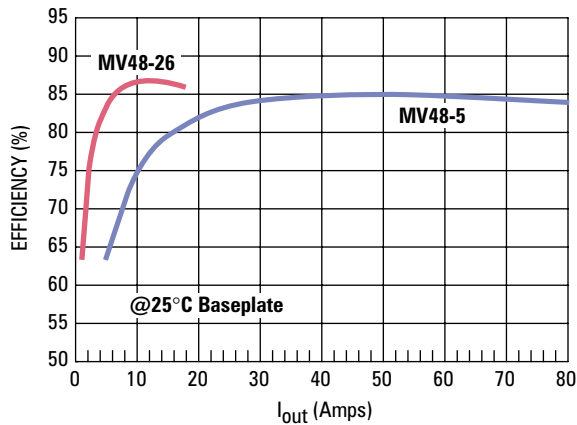
SV48 SUPERVERTER (50/75/100) SERIES SPECIFICATIONS

		Min	Typical	Max	Units	Conditions	
Absolute Maximum Ratings: Exceeding absolute maximum ratings may cause permanent damage or reduce reliability.							
PARAMETER	Input Voltage			80	Vdc	Continuous	
	Transient Input Voltage			100	Vdc	100 msec max.	
	Input/Output Isolation			1500	Vdc		
	Operating Case Temperature	-40		100	°C		
	Storage Temperature	-40		110	°C		
Electrical Specifications: Apply over the entire range of input voltage, output current, and temperature unless indicated.							
INPUT	Input Voltage	36	48	75	Vdc		
	Maximum Input Current			1.5	A		
	Input Current	SV48-3.3-50-1			2.3	A	
		SV48-3.3-75-1			3.0	A	
	SV48-3.3-100-1			3.0	A		
	SV48-5-50-1			2.5	A		
	SV48-5-75-1			3.5	A		
	SV48-5-100-1			4.0	A		
	SV48-12-50-1			2.5	A		
	SV48-12-75-1			3.5	A		
	SV48-12-100-1			4.0	A		
	SV48-24-50-1			2.1	A		
	SV48-24-75-1			2.5	A		
	SV48-24-100-1			3.5	A		
Input Ripple Rejection		60			dB	@120 Hz	
OUTPUT	Voltage Set Point			2	%	48V In, Full Load 25°C	
	Load Regulation		0.05	0.2	%	0 to Full Load	
	Line Regulation		0.01	0.1	%	Over Vin Range	
	Voltage Drift w/Temperature Ripple						
	Current						<i>See web site: www.roassoc.com</i>
	Current Limit Inception		115	130	% Iout max.		Vout = 90% Vout nominal, <i>See Output Characteristic Curves</i>
	Short Circuit Current			170	% Iout max		Vout = 250 mV, <i>See Output Characteristic Curves</i>
	Transient Response Peak Deviation (0.1A/μsec slew rate)		1		% Vout		50 to 75% or 50 to 25% Load Change
	Transient Response Settling Time (0.1A/μsec slew rate)		100		μsec		Vout within 1% Vout nominal
	Efficiency						<i>See web site: www.roassoc.com</i>
	External Load Capacitance	0		10,000	μF		
ISOLATION	Input to Output Capacitance		2000		pF		
	Input to Output Resistance	10			M ohms		
MECHANICAL	Weight		118 (4.2)		g (oz.)		
	Size		0.5x2.4x2.28		inches	<i>See Outline Drawing</i>	
	Thermal Resistance Case to Ambient		6.6		°C/W	Case Temperature = 100°C	
FEATURES	Trim Range	60		110	%Vout		
	Remote Sense Compensation			0.5	V		
	Over Voltage Clamp					<i>See web site: www.roassoc.com</i>	
	Over Temperature Shut-down		105		°C	Case Temperature (Only on 100W and up models)	
	Logic On/Off						
	Logic Low: Von/off	0		1.2	V		@ Ion/off = 1 mA
	Ion/off			1.0	mA		@ Von/off = 0V
	Logic High: Von/off			15	V		@ Ion/off = 1 mA
	Ion/off			50	μA		@ Von/off = 15V
	Turn-on Time		8	35	msec		80% load, Vout within 1% Vout nominal

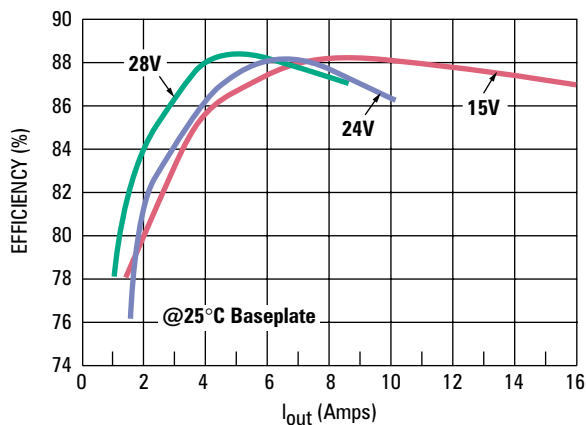
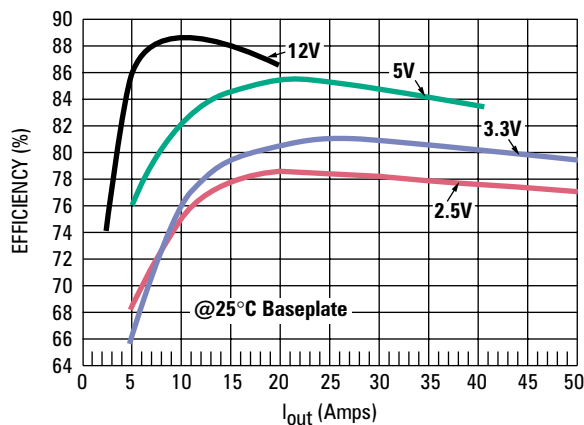
EFFICIENCY CURVES

CONTINUED

MEGAVERTER SERIES



SUPERVERTER SERIES



SUPERVERTER DUAL SERIES

