ARCH ELECTRONICS CORP.

Encapsulated DC-DC Converter

SB1R5 SERIES 1.5 Watts

KEY FEATURES

- Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Regulated Output
- Low Ripple and Noise
- 2-Years Product Warranty

ELECTRICAL SPECIFICATIONS

Model No.	SB1R5-5-5S	SB1R5-5-12S	SB1R5-5-15S	SB1R5-5-24S	SB1R5-5-5D	SB1R5-5-12D	SB1R5-5-15D
Max. Output Wattage (W)	1.5W	1.5W	1.5W	1.5W	1.5W	1.44W	1.5W
Input Voltage (V.DC.)	5V (4.5-5.5)	5V (4.5-5.5)	5V (4.5-5.5)	5V (4.5-5.5)	5V (4.5-5.5)	5V (4.5-5.5)	5V (4.5-5.5)
Output Voltage (V.DC.)	5V / 300mA	12V / 125mA	15V / 100mA	24V / 63mA	±5V / ±150mA	±12V / ±60mA	±15V / ±50mA
Efficiency	60%	54%	56%	58%	57%	59%	61%

Model No.	SB1R5-12-5S	SB1R5-12-12S	SB1R5-12-15S	SB1R5-12-24S	SB1R5-12-5D	SB1R5-12-12D	SB1R5-12-15D
Max. Output Wattage (W)	1.5W	1.5W	1.5W	1.5W	1.5W	1.44W	1.5W
Input Voltage (V.DC.)	12V (10.8-13.2)	12V (10.8-13.2)	12V (10.8-13.2)	12V (10.8-13.2)	12V (10.8-13.2)	12V (10.8-13.2)	12V (10.8-13.2)
Output Voltage (V.DC.)	5V / 300mA	12V / 125mA	15V / 100mA	24V / 63mA	±5V / ±150mA	±12V / ±60mA	±15V / ±50mA
Efficiency	65%	60%	62%	64%	60%	61%	65%

Model No.	SB1R5-24-5S	SB1R5-24-12S	SB1R5-24-15S	SB1R5-24-24S	SB1R5-24-5D	SB1R5-24-12D	SB1R5-24-15D
Max. Output Wattage (W)	1.5W	1.5W	1.5W	1.5W	1.5W	1.44W	1.5W
Input Voltage (V.DC.)	24V (21.6-26.4)	24V (21.6-26.4)	24V (21.6-26.4)	24V (21.6-26.4)	24V (21.6-26.4)	24V (21.6-26.4)	24V (21.6-26.4)
Output Voltage (V.DC.)	5V / 300mA	12V / 125mA	15V / 100mA	24V / 63mA	±5V / ±150mA	±12V / ±60mA	±15V / ±50mA
Efficiency	57%	55%	55%	58%	54%	54%	56%

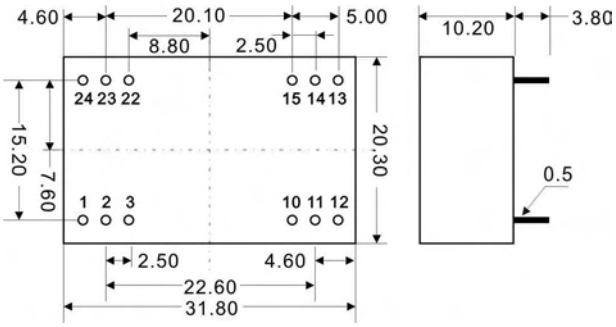
Model No.	SB1R5-48-5S	SB1R5-48-12S	SB1R5-48-15S	SB1R5-48-24S	SB1R5-48-5D	SB1R5-48-12D	SB1R5-48-15D
Max. Output Wattage (W)	1.5W	1.5W	1.5W	1.5W	1.5W	1.44W	1.5W
Input Voltage (V.DC.)	48V (43.2-52.8)	48V (43.2-52.8)	48V (43.2-52.8)	48V (43.2-52.8)	48V (43.2-52.8)	48V (43.2-52.8)	48V (43.2-52.8)
Output Voltage (V.DC.)	5V / 300mA	12V / 125mA	15V / 100mA	24V / 63mA	±5V / ±150mA	±12V / ±60mA	±15V / ±50mA
Efficiency	53%	52%	51%	54%	52%	54%	54%

Model No.		SB1R5-5-5S SB1R5-12-5S SB1R5-24-5S SB1R5-48-5S	SB1R5-5-12S SB1R5-12-12S SB1R5-24-12S SB1R5-48-12S	SB1R5-5-15S SB1R5-12-15S SB1R5-24-15S SB1R5-48-15S	SB1R5-5-24S SB1R5-12-24S SB1R5-24-24S SB1R5-48-24S	SB1R5-5-5D SB1R5-12-5D SB1R5-24-5D SB1R5-48-5D	SB1R5-5-12D SB1R5-12-12D SB1R5-24-12D SB1R5-48-12D	SB1R5-5-15D SB1R5-12-15D SB1R5-24-15D SB1R5-48-15D
Max Output Wattage (W)		1.5W	1.5W	1.5W	1.5W	1.5W	1.44W	1.5W
Input	Input Filter	π type						
Output	Voltage (V.DC.)	5	12	15	24	±5	±12	±15
	Voltage Accuracy	±3%						
	Current (mA) max	300	125	100	63	±150	±60	±50
	Line Regulation (LL-HL) (typ.)	±0.3%						
	Load Regulation (10-100%) (typ.)	±0.5%						
	Ripple	<0.2% Vout +10mV max (Vp-p)						
	Noise	<0.5% Vout +30mV max (Vp-p)						
	Switching Frequency	20KHz						
Protection	Over Power Protection	Works over 120% of rating and recovers automatically.						
	Short Circuit Protection	Current limit, auto-recovery						
Isolation	Voltage	500 VDC.						
	Resistance	10^8 ohms						
Environment	Operating Temperature	-25°C…+70°C (at Full Load)						
	Storage Temperature	-55°C…+105°C						
	Case Temperature	+100°C max.						
	Temperature Coefficient	±0.02% Per°C						
	Humidity	95% RH						
	MTBF	>1,000,000 h @ 25°C (MIL-HDBK-217F)						
Physical	Dimension (L x W x H)	1.25 x 0.8 x 0.4 Inches (31.8 x 20.3 x 10.2 mm) Tolerance ±0.5 mm						
	Case Material	Plastic						
	Weight	13 g						
	Cooling Method	Free-air convection						

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

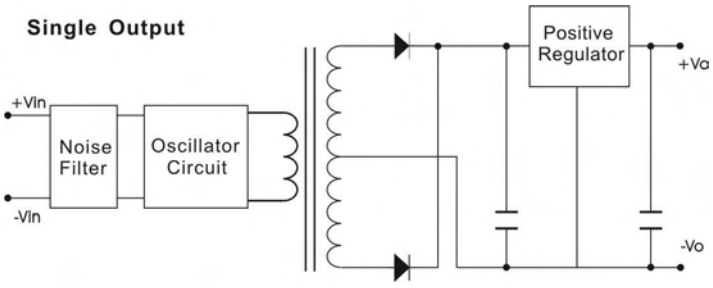
SB1R5 SERIES 1.5 Watts

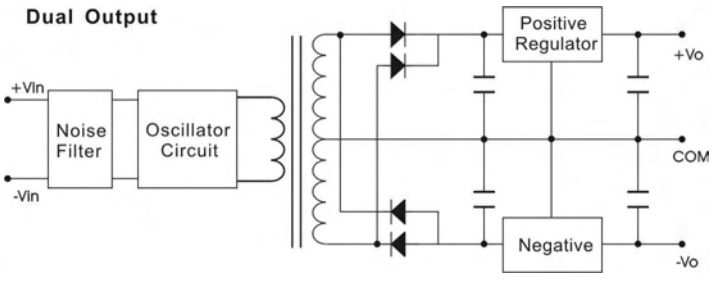
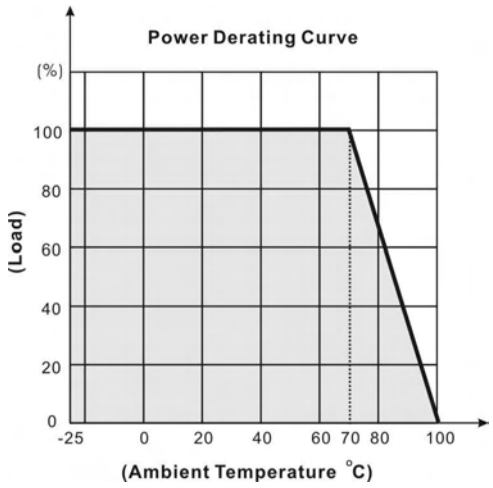
MECHANICAL DIMENSION (Top View)



PIN#	Single	Dual
1	+VIN	+VIN
2	NC	-VOUT
3	NO PIN	COMMON
10	-VOUT	COMMON
11	+VOUT	+VOUT
12	-VIN	-VIN
13	-VIN	-VIN
14	+VOUT	+VOUT
15	-VOUT	COMMON
22	NO PIN	COMMON
23	NC	-VOUT
24	+VIN	+VIN

BLOCK DIAGRAM





DERATING