

SB10A SERIES

10A DC / DC CONVERTER

FEATURES

- DELIVERS 10A CURRENT
- NON-ISOLATED SINGLE OUTPUT
- HIGH EFFICIENCY: 94% AT 3.3V OUTPUT
- SMALL SIZE, LOW PROFILE
- SINGLE-IN-LINE (SIP) PACKAGE
- INDUSTRY STANDARD FOOTPRINT
- OPEN FRAME DESIGN
- ADJUSTABLE OUTPUT
- AUTO-RESTART OVERLOAD PROTECTION
- REMOTE ON / OFF
- SOFT-START, HIGH CAPACITIVE LOAD CAPABILITY
- NO MINIMUM CURRENT
- FIXED FREQUENCY DESIGN
- STACKED PIN DESIGN, WAVE SOLDERABLE
- EN60950, CSA60950 AND UL60950



ELECTRICAL SPECIFICATIONS

INPUT VOLTAGE	: 4.5 Vdc to 5.5Vdc
EFFICIENCY	: 94% typical at 3.3V output full load
SWITCHING	
FREQUENCY	: 300kHz nominal
MAXIMUM POWER	: 33W
ADJUSTMENT	: $\pm 10\%$ of nominal output
OVERLOAD PROTECTION	: Short circuit protected. Case overload protected within 150% above nominal rating. Auto-restart.
REMOTE SENSE OPTION	: Compensates for 10% of nominal output lead drop max.

ENVIRONMENTAL

OPERATING TEMP.:	0° to 45°C at rated continuous load with natural convection cool, de-rating linearly to 50% of rated load at 70°C with forced air cooling
STORAGE TEMP. :	-40°C to 85°C MTBF >750,000 hours at full load and 25°C ambient conditions

SAFETY

CSA 60950 LEVEL 3
UL60950
KEMA KEUR (EN60950)
CE (LVD)
CB (Certificate and Report)



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OUTPUT CONFIGURATIONS ⁽⁵⁾

MODEL	OUTPUT VOLTAGE	INPUT RANGE	OUTPUT LOAD	η (%) ⁽¹⁾	LOAD REGULATION ⁽²⁾	TOTAL REGULATION ⁽³⁾	RIPPLE (max.) ⁽⁴⁾
SB10A-33	3.3V	4.5V to 5.5V	0.0A to 10.0A	94	< 15 mV	± 4.5%	40mV
SB10A-25	2.5V	4.5V to 5.5V	0.0A to 10.0A	92	< 15 mV	± 4.5%	40mV
SB10A-15	1.5V	4.5V to 5.5V	0.0A to 10.0A	88	< 15 mV	± 4.5%	40mV

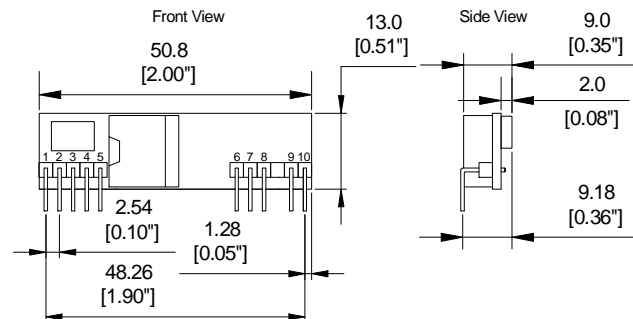
1. Measured at $V_{in} = 5V_{dc}$, full load at 25°C.
2. Measured at $V_{in} = 5V_{dc}$, 0.0A to 10.0 A load change at 25°C.
3. This is the combined regulation including line, load and over temperature range.
4. Peak-to-peak with 20 MHz bandwidth and 10 μF tantalum in parallel with a 1 μF ceramic capacitor at rated line voltage and full load.
5. Consult factory for other input/output combinations.

PIN ASSIGNMENTS

Pin Number:	Pin Function
Pin 1	Vout
Pin 2	Vout
Pin 3	Vout Sense (*)
Pin 4	Vout
Pin 5	GND
Pin 6	GND
Pin 7	VIN
Pin 8	VIN
Pin 9	TRIM
Pin 10	INH

DRAWINGS

mm
[inch]



(*) This pin is customer specified for Remote Sense option

NOTES

1. Specifications subject to change without notice.
2. All dimensions in mm, tolerance $\pm 0.5mm$.
3. Weight : less than 0.0041lbs. / 9.0g
4. Warranty : 1 year

THERMAL DATA FOR SB SERIES

For Example: SB10A-33

Item	Thermocouple Locations	Temperature (°C) at 45°C Ambient			
		4.5 V dc	5.0 V dc	5.5 V dc	Component Limit
1.	FET, Q1	106.3 °C	105.9 °C	105.5 °C	150
2.	FET, Q2	96.0 °C	96.9 °C	97.6 °C	150
3.	IC, U1	86.8 °C	88.4 °C	89.2 °C	125
4.	Capacitor, C3	92.1 °C	93.0 °C	89.2 °C	125

* All data were measured in convection cooling.