

## EC1SC SERIES

### 20 WATT 4:1 INPUT RANGE

### DC-DC CONVERTERS



## FEATURES

- \* 20W Isolated Output
- \* 2" X 1.6" Six-Sided Shield Metal Case
- \* Efficiency to 84%
- \* 4:1 Input Range
- \* Pi Input Filter
- \* Continuous Short Circuit Protection
- \* Meets EN55032 Class A, Conducted
- \* Remote On/Off Control
- \* UL60950-1 Approval
- \* Safety Meets IEC/EN/UL 62368-1



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
				NO LOAD	FULL LOAD		
EC1SC01	9-36 VDC	5VDC	4000 mA	15 mA	1029 mA	81	4000uF
EC1SC02	9-36 VDC	12VDC	1670 mA	15 mA	1006 mA	83	1670uF
EC1SC03	9-36 VDC	15VDC	1330 mA	15 mA	1004 mA	83	1330uF
EC1SC04	9-36 VDC	±12VDC	±833 mA	20 mA	1004 mA	83	833uF
EC1SC05	9-36 VDC	±15VDC	±666 mA	20 mA	1004 mA	83	666uF
EC1SC06	9-36 VDC	±5VDC	±2000 mA	20 mA	1004 mA	83	2000uF
EC1SC07	9-36 VDC	3.3VDC	4000 mA	15 mA	705 mA	78	4000uF
EC1SC11	18-72 VDC	5VDC	4000 mA	10 mA	508 mA	82	4000uF
EC1SC12	18-72 VDC	12VDC	1670 mA	10 mA	497 mA	84	1670uF
EC1SC13	18-72 VDC	15VDC	1330 mA	10 mA	496 mA	84	1330uF
EC1SC14	18-72 VDC	±12VDC	±833 mA	15 mA	496 mA	84	833uF
EC1SC15	18-72 VDC	±15VDC	±666 mA	15 mA	496 mA	84	666uF
EC1SC16	18-72 VDC	±5VDC	±2000 mA	15 mA	496 mA	84	2000uF
EC1SC17	18-72 VDC	3.3VDC	4000 mA	10 mA	353 mA	78	4000uF

NOTE: 1. Nominal Input Voltage 24 or 48VDC

# SPECIFICATIONS

All Specifications Typical at Nominal Line, Full Load, and 25°C Unless Otherwise Noted

## INPUT SPECIFICATIONS:

Input Voltage Range	24V	9-36V
	48V	18-72V
Input Surge Voltage (100ms max.)	24V	50Vdc max.
	48V	100Vdc max.
Input Filter		Pi Type
Positive Logic Remote On/Off Control		See Note3

## OUTPUT SPECIFICATIONS:

Voltage Accuracy	
Single Output	±1.0% max.
Dual +Output	±1.0% max.
Dual -Output	±2.0% max.
Voltage Balance, Dual Output at Full Load	
	±1.0% max.
Transient Response	
Single 25% Step Load Change	<500u sec.
Dual FL-1/2L±1% Error Band	<500u sec.
External Trim Adj, Range	
	±10%
Ripple & Noise, 20MHz BW	
	20mV RMS, max. 75mV p-p max.
Temperature Coefficient	±0.02%/°C max.
Short Circuit Protection	Continuous
Line Regulation (note1)	±0.5% max.
Load Regulation (note2)	±0.5% max.
Start up Time	270ms typ.

## GENERAL SPECIFICATIONS:

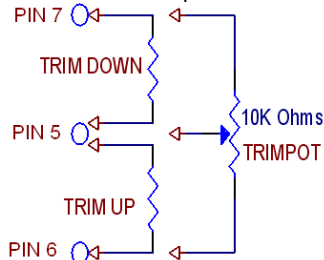
Efficiency	See Table
Isolation Voltage	1500 VDC min.
Isolation Resistance	10 <sup>8</sup> ohms
Isolation Capacitance	1000pF typ.
Switching Frequency	300KHz typ.
Operating Ambient Temperature Range	-25°C to +71°C
De-rating, Above 60°C	Linearly to Zero Power at +100°C
Case Temperature (note4)	100°C max.
Storage Temperature Range	-55°C to +105°C
Humidity	95% RH max. Non Condensing
MTBF	MIL-HDBK-217F, GB, 25°C, Full Load .....1500Khrs typ.
EMI/RFI	Six Sided Continuous Shield
Dimensions	2.00×1.60×0.45 inches (50.8×40.6×11.4mm)
Case Material	Black Coated Copper with Non-Conductive Base
Weight	53g

## NOTE:

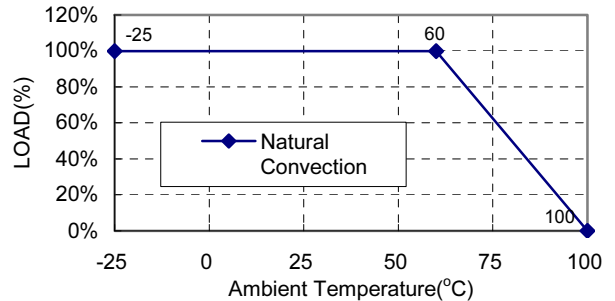
1. Measured from high line to low line.
2. Measured from full load to 1/4 load.
3. Remote on/off control:  
Logic Compatibility ..... CMOS or open collector TTL  
Ec-on ..... >+5.5VDC to 75VDC or open circuit  
Ec-off ..... 0 to <1.8 VDC  
Control common.....referenced to input minus
4. Maximum case temperature under any operating condition should not be exceeded 100°C.

## EXTERNAL OUTPUT TRIM

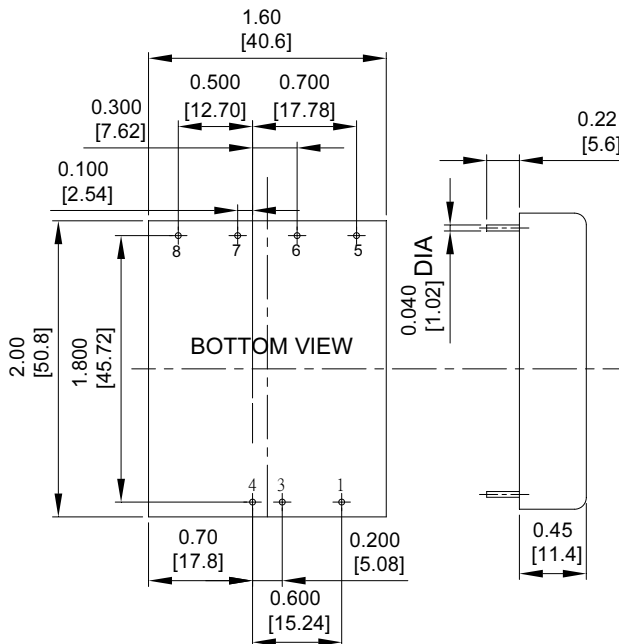
Output may optionally be externally trimmed (±10%) with a fixed resistor or an external trimpot as shown.



Typical Derating curve for Natural Convection



## Case SC Dimensions:



PIN CONNECTIONS		
Pin	Single Output	Dual Output
1	On/Off Control	On/Off Control
3	-V Input	-V Input
4	+V Input	+V Input
5	Trim	Trim
6	-V Output	-V Output
7	+V Output	Common
8	No Pin	+V Output

NOTE: Pin Size is 0.04±0.004 Inch (1.0±0.1mm)DIA  
All Dimensions In Inches(mm)  
Tolerances Inches: X.XX= ±0.04 , X.XXX= ±0.010  
Millimeters: X.X= ±1.0 , X.XX=±0.25