



E-Star Power Development Co., Ltd. (E-STAR)

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20W Module DC to Dc power supply > EC1SC



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



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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:

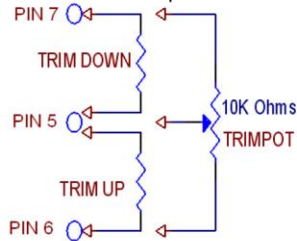
| | |
|-------------------------------------|--------------------------------------------------------|
| Efficiency | See Table |
| Isolation Voltage | 1500 VDC min. |
| Isolation Resistance | 10 ⁸ ohms |
| Isolation Capacitance | 1000pF typ. |
| Switching Frequency | 300KHz typ. |
| Operating Ambient 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:

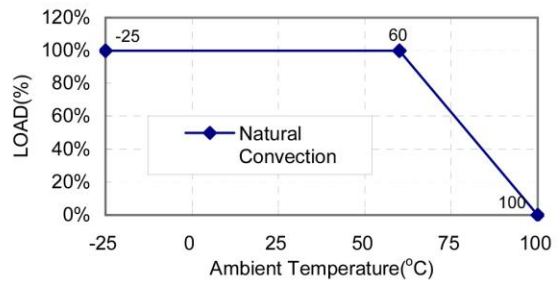
1. Measured from high line to low line.
2. Measured from full load to 1/4 load.
3. Remote on/off control:
 Logic Compatibility CMOS or open collector TTL
 Ec-on >+5.5VDC to 75VDC or open circuit
 Ec-off 0 to <1.8 VDC
 Control common.....referenced to input minus
4. Maximum case temperature under any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

EXTERNAL OUTPUT TRIM

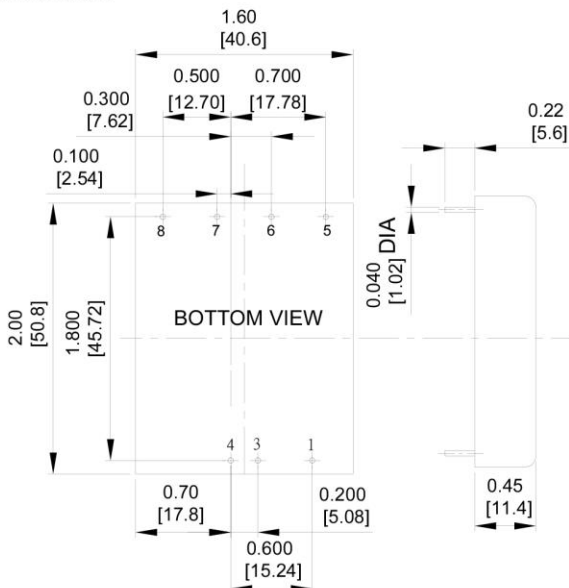
Output may optionally be externally trimmed (±10%) with a fixed resistor or an external trimpot as shown.



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