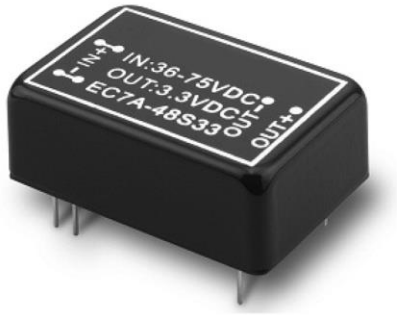
E-Star Power Development Co., Ltd. (E-STAR)
1F., No.40, Juren Ln., Sec. 2, Sanmin Rd., Banciao Dist., New Taipei City 22069, Taiwan (R.O.C.)
Phone : 886-2-2957 5580 Fax : 886-2-2957 7473

10W Module DC to Dc power supply > EC7A

E176177

FEATURES

* 10W Isolated Output
* DIP-24/SMD Metal Package
* Very High Efficiency up to 89%
* 2:1 Input Range
* Regulated Outputs
* PI Input Filter
* Continuous Short Circuit Protection
* No Tantalum Capacitor Inside
* Safety Meets IEC/EN/UL 62368-1
* UL60950-1 Approval



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
EC7A-12S25	9-18 VDC	2.5 VDC	0 mA	3000 mA	40 mA	735 mA	85	3000uF
EC7A-12S33	9-18 VDC	3.3 VDC	0 mA	3000 mA	50 mA	971 mA	85	3000uF
EC7A-12S05	9-18 VDC	5 VDC	0 mA	2000 mA	60 mA	947 mA	88	2000uF
EC7A-12S12	9-18 VDC	12 VDC	0 mA	835 mA	40 mA	949 mA	88	835uF
EC7A-12S15	9-18 VDC	15 VDC	0 mA	666 mA	40 mA	946 mA	88	666uF
EC7A-12D12	9-18 VDC	±12 VDC	0 mA	±416 mA	30 mA	956 mA	87	416uF
EC7A-12D15	9-18 VDC	±15 VDC	0 mA	±333 mA	30 mA	968 mA	86	333uF
EC7A-24S25	18-36VDC	2.5 VDC	0 mA	3000 mA	30 mA	368 mA	85	3000uF
EC7A-24S33	18-36VDC	3.3 VDC	0 mA	3000 mA	30 mA	480 mA	86	3000uF
EC7A-24S05	18-36VDC	5 VDC	0 mA	2000 mA	30 mA	473 mA	88	2000uF
EC7A-24S12	18-36VDC	12 VDC	0 mA	835 mA	30 mA	469 mA	89	835uF
EC7A-24S15	18-36VDC	15 VDC	0 mA	666 mA	30 mA	473 mA	88	666uF
EC7A-24D12	18-36VDC	±12 VDC	0 mA	±416 mA	20 mA	467 mA	89	416uF
EC7A-24D15	18-36VDC	±15 VDC	0 mA	±333 mA	20 mA	478 mA	87	333uF
EC7A-48S25	36-75VDC	2.5 VDC	0 mA	3000 mA	15 mA	184 mA	85	3000uF
EC7A-48S33	36-75VDC	3.3 VDC	0 mA	3000 mA	15 mA	243 mA	85	3000uF
EC7A-48S05	36-75VDC	5 VDC	0 mA	2000 mA	15 mA	237 mA	88	2000uF
EC7A-48S12	36-75VDC	12 VDC	0 mA	835 mA	15 mA	235 mA	89	835uF
EC7A-48S15	36-75VDC	15 VDC	0 mA	666 mA	15 mA	237 mA	88	666uF
EC7A-48D12	36-75VDC	±12 VDC	0 mA	±416 mA	10 mA	236 mA	88	416uF
EC7A-48D15	36-75VDC	±15 VDC	0 mA	±333 mA	10 mA	242 mA	86	333uF

NOTE: 1. Nominal Input Voltage 12, 24, 48VDC

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SPECIFICATIONS

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

INPUT SPECIFICATIONS:

Input Voltage Range ..... 12V 9-18V
24V 18-36V
48V 36-75V
Input Surge Voltage (100ms max.) ..... 12V ..... 25Vdc max.
24V ..... 50Vdc max.
48V ..... 100Vdc max.
Under Voltage Lockout ..... 12Vin power up 8.8V
12Vin power down 8V
24Vin power up 17V
24Vin power down 16V
48Vin power up 34V
48Vin power down 32V
Input Filter ..... PI Type

OUTPUT SPECIFICATIONS:

Voltage Accuracy ..... ±1.5% max.
Voltage Balance (Dual) ..... ±2.0% max.
Transient Response: 75% - 100% Step Load Change
Error Band ..... ±5% Vout Nominal
Recovery Time ..... < 300us
Ripple & Noise, 20MHz BW..... Single ..... 75mV pk-pk, max.
Dual ..... 100mV pk-pk, max.
Temperature Coefficient ..... ±0.05%/°C
Line Regulation (note1) ..... Single ..... ±0.2% max.
Dual ..... ±0.5% max.
Load Regulation (note2) ..... Single ... DIP±0.5% max., SMD±1.0% max.
Dual ..... ±1.0% max.
Output Short Circuit Protection ..... Continuous
Over voltage Protection (Zener Diode Clamp, Single Output Only)
2.5V, 3.3V.....3.9Vdc typ.
5V ..... 6.2Vdc typ., 12V.....15Vdc typ.
15V.....18Vdc typ.
Start up Time ..... 24(48)S25(33) ..... 120ms typ.
24(48)S05(12) ....60ms typ.
Others ....8ms typ.

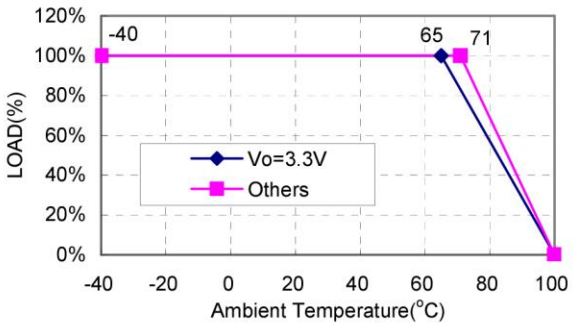
GENERAL SPECIFICATIONS:

Efficiency.....See Table
Isolation Voltage ..... Input/Output ..... 1500VDC min.
Isolation Resistance ..... 10^9 ohm min.
Isolation Capacitance.....1000pF typ.
Switching Frequency ..... 380KHz typ.
Operating Ambient Temperature ..... -40℃ to +85℃
De-rating, Above 71℃ ..... Linearly to Zero Power at 100℃
Case Temperature(note4) ..... 100℃ max.
Cooling ..... Natural Convection
Storage Temperature ..... -40℃ to +125℃
Humidity ..... 95% RH max. Non Condensing
MTBF ..... MIL-HDBK-217F, GB, 25℃, Full Load ..... 1150Khrs typ.
Dimensions ..... DIP .....1.25x0.80x0.40 inches (31.8x20.3x10.2 mm)
SMD .... 1.25x0.80x0.45 inches (31.8x20.3x11.4 mm)
Case Material ..... Black Coated Copper with Non-Conductive Base
Weight 18.4g

NOTE:

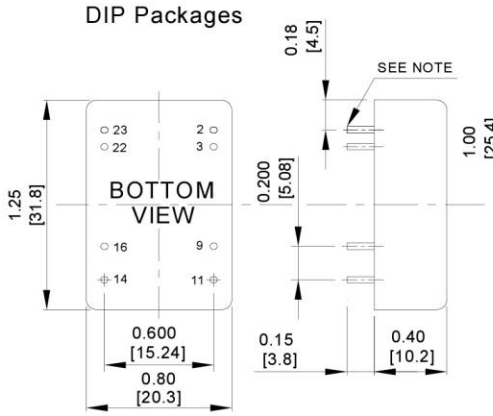
1. Measured from high line to low line.
2. Measured from full load to 10% load.
3. Suffix "S" to the model number with SMD packages.
4. Maximum case temperature under any operating condition should not be exceeded 100℃.

Typical Derating curve for Natural Convection

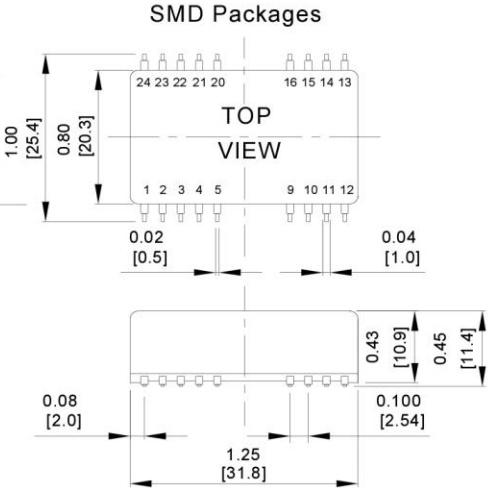


Case A Dimensions:

DIP Packages



SMD Packages



NOTE:Pin Size is 0.02±0.002 Inch (0.5±0.05 mm)DIA
All Dimensions In Inches (mm)
Tolerances Inches: X.XX= ±0.02 , X.XXX= ±0.010
Millimeters: X.X= ±0.5 , X.XX=±0.25

PIN CONNECTION				
Pin	Single Output		Dual Output	
	DIP	SMD	DIP	SMD
1,24	NP	NC	NP	NC
2,3	-V Input		-V Input	
4,5	NP	NC	NP	NC
9	NP	NC	Common	
10	NP	NC	NP	NC
11	NC		-V Output	
12	NP	NC	NP	NC
13	NP	+V Output	NP	NC
14	+V Output		+V Output	
15	NP	-V Output	NP	NC
16	-V Output		Common	
20,21	NP	NC	NP	NC
22,23	+V Input		+V Input	

* NC-NO CONNECTION WITH PIN
* NP-NO PIN