



EC7C SERIES

40 WATT 2:1 INPUT RANGE

DC-DC CONVERTERS



FEATURES

- * 40W Isolated Output
- * 2" X 2" Six-Sided Shield Metal Case
- * High Efficiency Up to 93%
- * Fixed 350KHz Switching Frequency
- * 2:1 Input Range
- * Regulated Outputs
- * Continuous Short Circuit Protection
- * UL60950-1 Approval (Except EC7C-XXD3305)
- * Safety Meets IEC/EN/UL 62368-1



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
EC7C-12S25	9 -18 VDC	2.5 VDC	0 mA	10000 mA	200 mA	2354 mA	88.5	10000uF
EC7C-12S33	9 -18 VDC	3.3 VDC	0 mA	10000 mA	200 mA	3090 mA	89	10000uF
EC7C-12S05	9 -18 VDC	5 VDC	0 mA	8000 mA	200 mA	3683 mA	90.5	8000uF
EC7C-12S12	9 -18 VDC	12 VDC	0 mA	3333 mA	200 mA	3643 mA	91.5	3300uF
EC7C-12S15	9 -18 VDC	15 VDC	0 mA	2666 mA	200 mA	3642 mA	91.5	2700uF
EC7C-12D12	9 -18 VDC	±12 VDC	90 mA	±1800 mA	100 mA	4022 mA	89.5	1800uF
EC7C-12D15	9 -18 VDC	±15 VDC	70 mA	±1400 mA	100 mA	3867 mA	90.5	1400uF
EC7C-12D3305	9 -18 VDC	3.3/5.0 VDC	0 mA	10A/7.5 A	100 mA	3727 mA	89 ⁽³⁾	7270uF/7270uF
EC7C-12T3312	9 -18 VDC	3.3/±12 VDC	0.6A/±40 mA	6A/±0.4 A	200 mA	2768 mA	88.5	6000uF/400uF
EC7C-12T3315	9 -18 VDC	3.3/±15 VDC	0.6A/±30 mA	6A/±0.3 A	200 mA	2712 mA	88.5	6000uF/330uF
EC7C-12T0512	9 -18 VDC	5.0/±12 VDC	0.6A/±40 mA	6A/±0.4 A	200 mA	3729 mA	88.5	6000uF/400uF
EC7C-12T0515	9 -18 VDC	5.0/±15 VDC	0.6A/±30 mA	6A/±0.3 A	200 mA	3611 mA	90	6000uF/330uF
EC7C-24S25	18 - 36 VDC	2.5 VDC	0 mA	10000 mA	100 mA	1157 mA	90	10000uF
EC7C-24S33	18 - 36 VDC	3.3 VDC	0 mA	10000 mA	100 mA	1519 mA	90.5	10000uF
EC7C-24S05	18 - 36 VDC	5 VDC	0 mA	8000 mA	110 mA	1812 mA	92	8000uF
EC7C-24S12	18 - 36 VDC	12 VDC	0 mA	3333 mA	100 mA	1792 mA	93	3300uF
EC7C-24S15	18 - 36 VDC	15 VDC	0 mA	2666 mA	100mA	1792 mA	93	2700uF
EC7C-24D12	18 - 36 VDC	±12 VDC	90 mA	±1800 mA	100 mA	1967 mA	91.5	1800uF
EC7C-24D15	18 - 36 VDC	±15 VDC	70 mA	±1400 mA	100 mA	1902 mA	92	1400uF
EC7C-24D3305	18 - 36 VDC	3.3/5.0 VDC	0 mA	10A/7.5 A	50 mA	1843 mA	90 ⁽³⁾	7270uF/7270uF
EC7C-24T3312	18 - 36 VDC	3.3/±12 VDC	0.6A/±40 mA	6A/±0.4 A	100 mA	1361 mA	90	6000uF/400uF
EC7C-24T3315	18 - 36 VDC	3.3/±15 VDC	0.6A/±30 mA	6A/±0.3 A	100 mA	1333 mA	90	6000uF/330uF
EC7C-24T0512	18 - 36 VDC	5.0/±12 VDC	0.6A/±40 mA	6A/±0.4 A	100 mA	1813 mA	91	6000uF/400uF
EC7C-24T0515	18 - 36 VDC	5.0/±15 VDC	0.6A/±30 mA	6A/±0.3 A	100 mA	1786 mA	91	6000uF/330uF
EC7C-48S25	36 - 75 VDC	2.5 VDC	0 mA	10000 mA	50 mA	585 mA	89	10000uF
EC7C-48S33	36 - 75 VDC	3.3 VDC	0 mA	10000 mA	50 mA	764 mA	90	10000uF
EC7C-48S05	36 - 75 VDC	5 VDC	0 mA	8000 mA	60 mA	906 mA	92	8000uF
EC7C-48S12	36 - 75 VDC	12 VDC	0 mA	3333 mA	60 mA	896 mA	93	3300uF
EC7C-48S15	36 - 75 VDC	15 VDC	0 mA	2666 mA	60 mA	906 mA	92	2700uF
EC7C-48D12	36 - 75 VDC	±12 VDC	90 mA	±1800 mA	50 mA	989 mA	91	1800uF
EC7C-48D15	36 - 75 VDC	±15 VDC	70 mA	±1400 mA	50 mA	962 mA	91	1400uF
EC7C-48D3305	36 - 75 VDC	3.3/5.0 VDC	0 mA	10A/7.5 A	50 mA	926 mA	89.5 ⁽³⁾	7270uF/7270uF
EC7C-48T3312	36 - 75 VDC	3.3/±12 VDC	0.6A/±40 mA	6A/±0.4 A	50 mA	684 mA	89.5	6000uF/400uF
EC7C-48T3315	36 - 75 VDC	3.3/±15 VDC	0.6A/±30 mA	6A/±0.3 A	50 mA	682 mA	88	6000uF/330uF
EC7C-48T0512	36 - 75 VDC	5.0/±12 VDC	0.6A/±40 mA	6A/±0.4 A	50 mA	932 mA	88.5	6000uF/400uF
EC7C-48T0515	36 - 75 VDC	5.0/±15 VDC	0.6A/±30 mA	6A/±0.3 A	50 mA	903 mA	90	6000uF/330uF

NOTE: 1. Nominal Input Voltage 12, 24, 48 VDC
 2. The Total Power of EC7C-12D3305, EC7C-24D3305 and EC7C-48D3305 Should not be Exceeded 40W.
 3. The Efficiency is Measured with Rated Load Current (3.3V/6A, 5V/4A).

SPECIFICATIONS

All Specifications Typical at Nominal Line, Full Load, and 25°C 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, power down 8.0V
 - 24Vin: power up 17V, power down 16V
 - 48Vin: power up 34V, power down 32V
- Positive/Negative Logic Remote On/Off (note 5&6)
- Input Filter PI Type

OUTPUT SPECIFICATIONS:

- Voltage Accuracy Single/Dual ±1.5% max.
 - Dual positive 3.3V±1.5% max., 5V±3% max.
 - Triple Main ±1.5% max., Auxiliary ±3.0% max.
- Voltage Balance (Dual) ±2.0% max.
- Transient Response: 75% - 100% Step Load Change (Main Output)
 - Error Band ... ±5% Vout nominal, Recovery Time < 300us
- Output Voltage Adjustment Range ... Single/Dual Vo±10%, Dual Positive±5%
- Ripple & Noise, 20MHz BW (Measured with 0.1uF MLCC)
 - 2.5V&3.3V&5V 50mVpp,max., 12V&15V 75mVpp max.
 - Dual ±12V 120mVpk-pk, max., ±15V 150mVpk-pkmax.
 - Dual positive +3.3V /+5V 100mVpk-pk max.
- Temperature Coefficient ±0.02%/°C max.
- Line Regulation (note1) Single/Dual/Dual positive ±0.5% max.
 - Triple Main ±1.0% max., Auxiliary ±3.0% max.
- Load Regulation (note2) Single ±0.5% max., Dual ±1.0% max.
 - Dual positive(note3) 3.3V ±1.5% max., 5V±4% max.
 - Triple ... Main ±1.0% max., Auxiliary ±4.0% max.
- Cross Regulation (note4) +3.3V±1.0% max. +5V±4.0% max.
- Over voltage Protection (Zener Diode Clamp) 2.5V 3.6Vdc typ.
 - 3.3V 3.9Vdc typ., 5V 6.2Vdc typ.
 - 12V 15Vdc typ., 15V 18Vdc typ.
- Output Current Limit, % Nominal Output 110%-140%
- Output Short Circuit Protection Continuous (Hiccup mode)
- Start up Time 10ms typ.

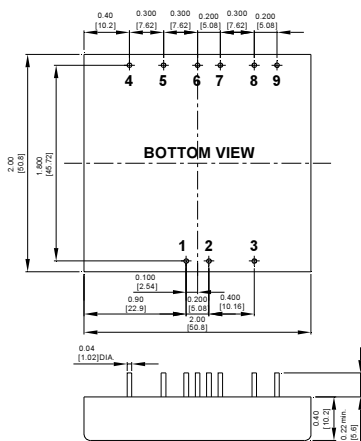
GENERAL SPECIFICATIONS:

- Efficiency See Table
- Isolation Voltage Input/Output 1500VDC max.
- Isolation Resistance 10⁹ ohm min.
- Isolation Capacitance 1000pF typ.
- Switching Frequency 350KHz typ.
- Operating Ambient Temperature -40°C to +85°C
- De-rating. Above 60°C Linearly to Zero Power at 100°C
- Case Temperature (note8) 100°C max.
- Cooling Natural Convection
- Storage Temperature -55°C to +125°C
- Humidity 95% RH max. Non Condensing
- MTBF.. MIL-HDBK-217F. GB. 25°C. Full Load XXD3305 500Khrs typ.
 - Others 700Khrs typ.
- Thermal Shutdown. Case Temperature 110°C Typical
- Dimensions 2.00×2.00×0.40 inches(50.8×50.8×10.2 mm)
- Case Material Black Coated Copper with Non-Conductive Base
- Weight 65g

NOTE:

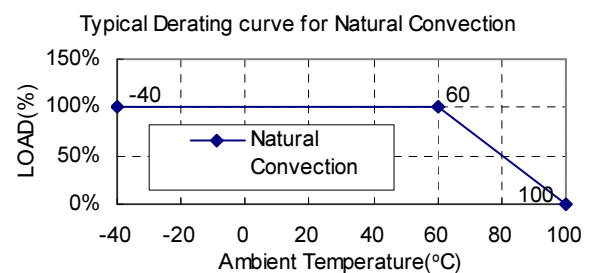
- Measured from high line to low line (dual positive at rated load).
- Measured from full load to 10% load.
- Measured from max. load to zero load, other output at zero load.
- Measured from max. load to 10% load, other output at 10% load.
- Logic Compatibility CMOS or Open Collector TTL, ref. to -Vin
 - Module On >3.5Vdc to 75Vdc or Open Circuit
 - Module Off 0 to <1.8Vdc.
- Suffix "N" to the model number with negative logic remote on/off
 - Module On 0 to <1.8Vdc,
 - Module Off >3.5Vdc to 75Vdc or Open Circuit
- If +/-Sense is not being used, the +sense should be connected to +Vout and likewise the -sense should be connected to -Vout.
- Maximum case temperature under any operating condition should not be exceeded 100°C.

Case C Dimensions:



Pin	PIN CONNECTION			
	Single	Dual	Dual Positive	Triple
1	+V Input	+V Input	+V Input	+V Input
2	-V Input	-V Input	-V Input	-V Input
3	On / Off	On / Off	On / Off	On / Off
4	NC	No Pin	+3.3Vout	+Aux. Out
5	-Sense	+V Output	Com(3.3V RTN)	Common
6	+Sense	Common	Trim	- Aux. Out
7	+V Output	Common	NC	+V Output
8	-V Output	-V Output	+5V Output	-V Output (Com)
9	Trim	Trim	Com(5V RTN)	NC

*NC : NO CONNECTION WITH PIN
 NOTE: Pin Size is 0.04±0.004 Inch(1.0±0.1mm) DIA
 All Dimensions In Inches[mm]
 Tolerances: X.XX±0.02, X.XXX±0.010
 Millimeters: X.XX±0.5, X.XX±0.25



EXTERNAL OUTPUT TRIM

