EC5C SERIES
15 WATT 4:1 INPUT DC-DC CONVERTERS

E176177

FEATURES

* 15W Isolated Output
* 2” X 2” Six-Sided Shield Metal Case
* 4:1 Input Range
* Efficiency to 84%
* Remote On/Off Control
* Regulated Outputs
* Continuous Short Circuit Protection
* UL60950-1 Approval
* 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		
EC5C01	9-36 VDC	5 VDC	0 mA	3000 mA	15 mA	770 mA	81	T.B.D
EC5C02	9-36 VDC	12 VDC	0 mA	1250 mA	15 mA	745 mA	84	T.B.D
EC5C03	9-36 VDC	15 VDC	0 mA	1000 mA	15 mA	760 mA	82	T.B.D
EC5C04	9-36 VDC	±5 VDC	±0 mA	±1500 mA	20 mA	770 mA	81	T.B.D
EC5C05	9-36 VDC	±12 VDC	±0 mA	±625 mA	20 mA	760 mA	82	T.B.D
EC5C06	9-36 VDC	±15 VDC	±0 mA	±500 mA	20 mA	750 mA	83	T.B.D
EC5C07	9-36 VDC	5/±12 VDC	250/±100 mA	1500/±310 mA	20 mA	780 mA	80	T.B.D
EC5C08	9-36 VDC	5/±15 VDC	250/±100 mA	1500/±250 mA	20 mA	780 mA	80	T.B.D
EC5C09	9-36 VDC	3.3 VDC	0 mA	3000 mA	15 mA	530 mA	78	T.B.D
EC5C11	18-72 VDC	5 VDC	0 mA	3000 mA	10 mA	385 mA	81	T.B.D
EC5C12	18-72 VDC	12 VDC	0 mA	1250 mA	10 mA	375 mA	83	T.B.D
EC5C13	18-72 VDC	15 VDC	0 mA	1000 mA	10 mA	380 mA	82	T.B.D
EC5C14	18-72 VDC	±5 VDC	±0 mA	±1500 mA	15 mA	385 mA	81	T.B.D
EC5C15	18-72 VDC	±12 VDC	±0 mA	±625 mA	15 mA	375 mA	83	T.B.D
EC5C16	18-72 VDC	±15 VDC	±0 mA	±500 mA	15 mA	385 mA	81	T.B.D
EC5C17	18-72 VDC	5/±12 VDC	250/±100 mA	1500/±310 mA	15 mA	385 mA	81	T.B.D
EC5C18	18-72 VDC	5/±15 VDC	250/±100 mA	1500/±250 mA	15 mA	390 mA	80	T.B.D
EC5C19	18-72 VDC	3.3 VDC	0 mA	3000 mA	10 mA	270 mA	77	T.B.D

NOTE: 1. Nominal Input Voltage 24 or 48VDC

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SPECIFICATIONS

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

INPUT SPECIFICATIONS:

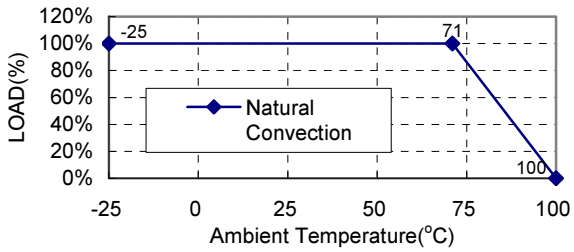
Input Voltage Range ..... 24V ..... 9 – 36V
48V ..... 18 – 72V
Input Surge Voltage (100ms max.) ..... 24V ..... 50Vdc max.
48V ..... 100Vdc max.
Input Filter ..... Pi Type

OUTPUT SPECIFICATIONS:

Voltage Accuracy
Single Output, Dual +Output ..... ±1.0% max.
Dual – Output ..... ±3.0% max.
Triple 5V ..... ±2.0% max.
12V/15V ..... ±3.0% max.
Voltage Balance (Dual) ..... ±1.0% max.
Transient Response
Single 25% Step Load Change ..... <500μs
Dual FL-1/2L±1% Error Band ..... <500μs
External Trim Adj. Range ..... ±10%
Ripple & Noise, 20MHz BW ..... 10mV RMS max., 75mV pk-pk max.

Temperature Coefficient ..... ±0.02%/℃ max.
Short Circuit Protection ..... Continuous
Line Regulation Single/Dual (note1) ..... ±0.2% max.
Triple ..... ±1.0% max.
Load Regulation Single/Dual (note2) ..... ±1.0% max.
Triple ..... ±5.0% max.
Start up Time ..... 300ms typ.

Typical Derating curve for Natural Convection



GENERAL SPECIFICATIONS:

Efficiency ..... See Table
Isolation Voltage ..... 500 VDC min.
Isolation Resistance ..... 10^9 Ohm min.
Isolation Capacitance ..... 1000pF typ.
Switching Frequency ..... 300KHz typ.
Case Grounding ..... Connected to Output Common

Operating Ambient Temperature Range ..... –25℃ to +71℃
De-rating, Above 71℃ ..... Linearly to Zero Power at 100℃
Case Temperature (note3) ..... 100℃ max.
Cooling ..... Natural Convection

Storage Temperature Range ..... –55℃ to +105℃
Humidity ..... 95% RH max. Non Condensing

MTBF ..... MIL-HDBK-217F. GB. 25℃. Full Load ..... 1300Khrs typ.
EMI/RFI ..... Six-Sided Continuous Shield
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 59g

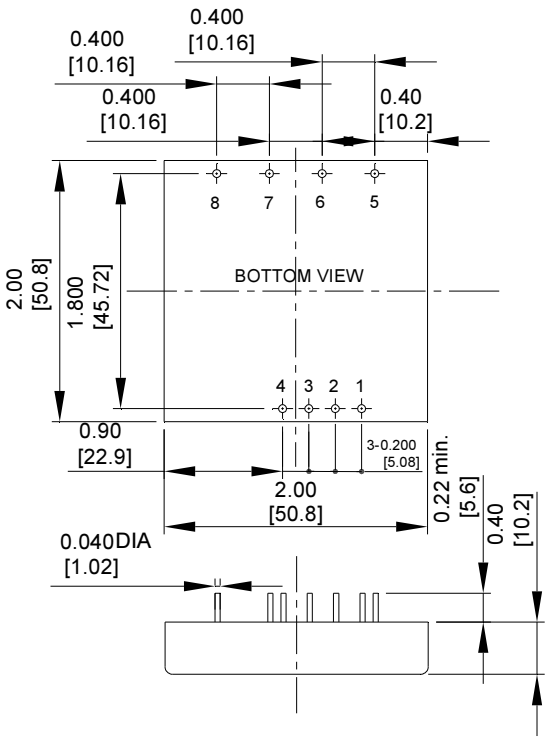
NOTE:

1. Measured from high line to low line.
2. Measured from full load to 1/4 full load.
3. Maximum case temperature under any operating condition should not be exceeded 100℃.

TRIPLE OUTPUT LOADING TABLE (1)			
Output (Pin No.)	Voltage	Amperes	
		Min. (2)	Nom.
7	+5	0.25	1.5
8 & 5	+12 & -12	0.10	0.31
8 & 5	+15 & -15	0.10	0.25

NOTE:
1. Maximum total power from all outputs is limited to 15 watts but no output should be allowed to exceed its maximum current.
2. Minimum current on each output is required to maintain specified regulation.

Case C Dimensions:



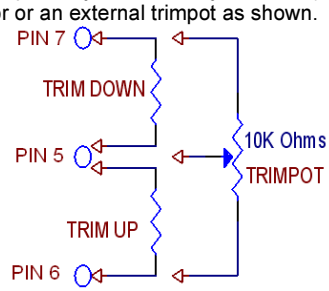
PIN CONNECTION			
Pin	Single	Dual	Triple
1	Remote On/Off Control		
2	No Pin	No Pin	No Pin
3	-V Input	-V Input	-V Input
4	+V Input	+V Input	+V Input
5	Trim	Trim	-Aux. Out
6	-V Output	-V Output	Common
7	+V Output	Common	+5Vout
8	No Pin	+V Output	+Aux. Out

NOTE: Pin Size is 0.04±0.004 Inch (1.0±0.1 mm)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

Remote On/Off Control	
Logic Compatibility	CMOS or Open Collector TTL
Ec-On	>+5.5 VDC to 75Vdc or Open Circuit
Ec-Off	0 to <1.8 VDC
Shutdown Idle Current	10mA
Control Common	Referenced to Input Minus

EXTERNAL OUTPUT TRIM

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



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