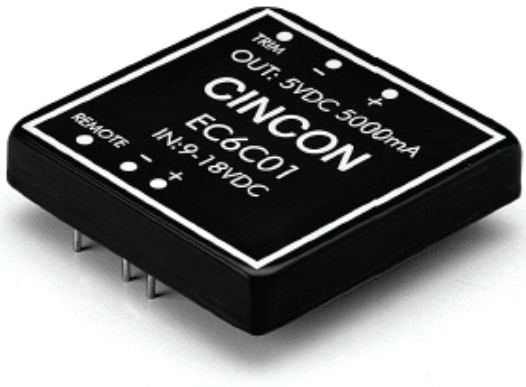
EC6C SERIES

25 - 30WATT 2:1 INPUT DC-DC CONVERTERS

E176177



FEATURES

* 25-30W Isolated Output
* 2" X 2" Six-Sided Shield Metal Case
* 2:1 Input Range
* Regulated Outputs
* Efficiency to 88%
* 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.
			MIN.	MAX.	NO LOAD	FULL LOAD		
EC6C01	9-18 VDC	5 VDC	0 mA	5000 mA	30 mA	2675 mA	84	5000uF
EC6C02	9-18 VDC	12 VDC	0 mA	2500 mA	30 mA	3050 mA	88	2500uF
EC6C03	9-18 VDC	15 VDC	0 mA	2000 mA	30 mA	3050 mA	88	2000uF
EC6C04	9-18 VDC	±5 VDC	±0 mA	±2500 mA	35 mA	2675 mA	83	2500uF
EC6C05	9-18 VDC	±12 VDC	±0 mA	±1250 mA	35 mA	3050 mA	88	1250uF
EC6C06	9-18 VDC	±15 VDC	±0 mA	±1000 mA	35 mA	3050 mA	87	1000uF
EC6C07	9-18 VDC	5/±12 VDC	500/±100 mA	3500/±310 mA	35 mA	2640 mA	81	3500/310uF
EC6C08	9-18 VDC	5/±15 VDC	500/±100 mA	3500/±250 mA	35 mA	2640 mA	82	3500/250uF
EC6C09	9-18 VDC	3.3 VDC	0 mA	5000 mA	30 mA	1860 mA	80	5000uF
EC6C11	18-36 VDC	5 VDC	0 mA	5000 mA	30 mA	1336 mA	83	5000uF
EC6C12	18-36 VDC	12 VDC	0 mA	2500 mA	30 mA	1525 mA	87	2500uF
EC6C13	18-36 VDC	15 VDC	0 mA	2000 mA	30 mA	1525 mA	87	2000uF
EC6C14	18-36 VDC	±5 VDC	±0 mA	±2500 mA	30 mA	1336 mA	82	2500uF
EC6C15	18-36 VDC	±12 VDC	±0 mA	±1250 mA	30 mA	1470 mA	87	1250uF
EC6C16	18-36 VDC	±15 VDC	±0 mA	±1000 mA	30 mA	1470 mA	86	1000uF
EC6C17	18-36 VDC	5/±12 VDC	500/±100 mA	3500/±310 mA	30 mA	1320 mA	82	3500/310uF
EC6C18	18-36 VDC	5/±15 VDC	500/±100 mA	3500/±250 mA	30 mA	1320 mA	82	3500/250uF
EC6C19	18-36 VDC	3.3 VDC	0 mA	5000 mA	30 mA	920 mA	79	5000uF
EC6C21	36-72 VDC	5 VDC	0 mA	5000 mA	20 mA	660 mA	83	5000uF
EC6C22	36-72 VDC	12 VDC	0 mA	2500 mA	20 mA	765 mA	87	2500uF
EC6C23	36-72 VDC	15 VDC	0 mA	2000 mA	20 mA	765 mA	87	2000uF
EC6C24	36-72 VDC	±5 VDC	±0 mA	±2500 mA	25 mA	660 mA	82	2500uF
EC6C25	36-72 VDC	±12 VDC	±0 mA	±1250 mA	25 mA	735 mA	87	1250uF
EC6C26	36-72 VDC	±15 VDC	±0 mA	±1000 mA	25 mA	735 mA	87	470uF
EC6C27	36-72 VDC	5/±12 VDC	500/±100 mA	3500/±310 mA	25 mA	655 mA	83	2200/220uF
EC6C28	36-72 VDC	5/±15 VDC	500/±100 mA	3500/±250 mA	25 mA	655 mA	82	1500/150uF
EC6C29	36-72 VDC	3.3 VDC	0 mA	5000 mA	20 mA	460 mA	79	5000uF

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

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 – 72V

Input Surge Voltage (100ms max.) ..... 12V ..... 25Vdc max.
24V ..... 50Vdc max.
48V ..... 100Vdc max.

Input Filter ..... Pi Type

OUTPUT SPECIFICATIONS:

Voltage Accuracy
Single Output ..... ±2.0% max.
Dual +Output ..... ±2.0% max.
Dual – Output ..... ±3.0% max.
Triple, 5V ..... ±2.0% max.
12V/15V ..... ±5.0% max.

Voltage Balance (Dual) ..... ±1.0% max.

Transient Response.
Single 25% Step Load Change ..... <500us
Dual FL-1/2L±1% Error Band ..... <500us

External Trim Adj. Range ..... ±10%

Ripple and Noise, 20MHz BW ..... 10mV RMS. max., 75mV p-p max.

Temperature Coefficient ..... ±0.02%/℃ max.

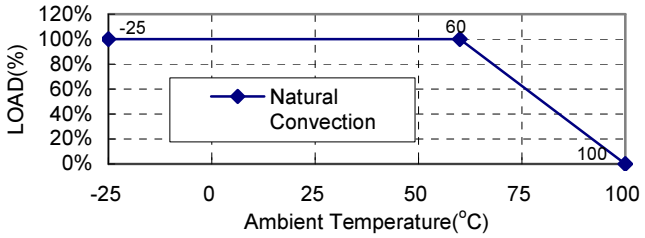
Short Circuit Protection ..... Continuous

Line Regulation Single/Dual (note1) ..... ±0.5% max.
Triple ..... ±1.0% max.

Load Regulation Single/Dual (note2) ..... ±1.0% max.
Triple ..... ±5.0% max.

Start up Time ..... 900ms typ.

Typical Derating curve for Natural Convection



GENERAL SPECIFICATIONS:

Efficiency ..... See Table

Isolation Voltage ..... 500 VDC min.

Isolation Resistance ..... 10^9 Ohms min.

Isolation Capacitance ..... 500pF typ.

Switching Frequency ..... 300KHz typ.

Case Grounding ..... Connected to Output Common

Operating Ambient Temperature Range ..... –25℃ to +71℃

De-rating, Above 60℃ ..... 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 ..... 900Khrs 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 65g

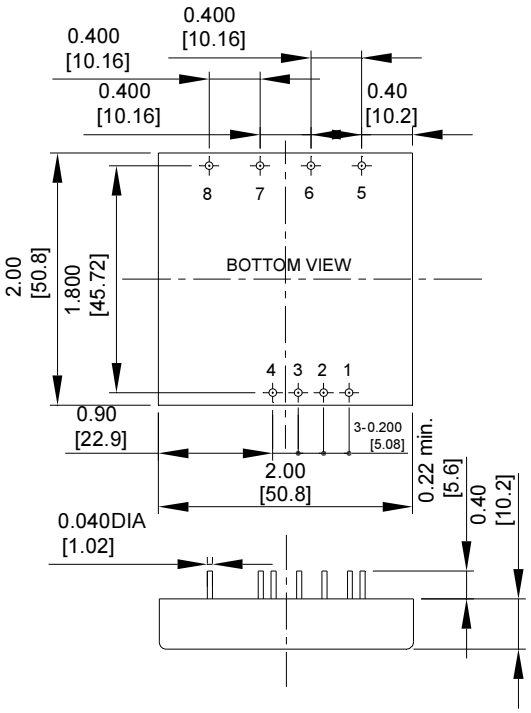
NOTE:

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	0.50	3.5
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 25 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 t0 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.

