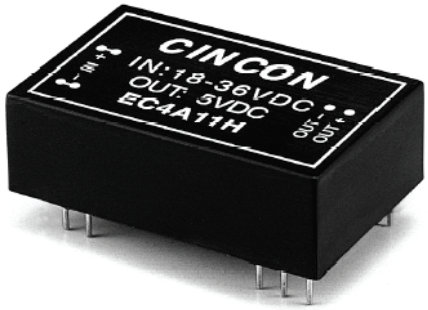
EC4A SERIES

5-6 WATT 2:1 INPUT RANGE DC-DC CONVERTERS

H/HM Versions Only

FEATURES



* 5-6W Isolated Output
* 24-Pin DIP Package
* Efficiency to 84%
* 2:1 Input Range
* Regulated Outputs
* Pi Input Filter
* Continuous Short Circuit Protection
* UL60950-1 Approval for H/HM Versions only
* Safety Meets IEC/EN/UL 62368-1

MODEL NUMBER(1)	INPUT VOLTAGE(2)	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		% EFF.(3)	CAPACITOR LOAD MAX.
				NO LOAD	FULL LOAD		
EC4A01□	9-18 VDC	5 VDC	1000 mA	7.5 mA	541 mA	77	4700uF
EC4A02□	9-18 VDC	12 VDC	470 mA	7.5 mA	573 mA	82	4700uF
EC4A03□	9-18 VDC	15 VDC	400 mA	7.5 mA	625 mA	80	4700uF
EC4A04□	9-18 VDC	±12 VDC	±230 mA	12 mA	554 mA	83	2200uF
EC4A05□	9-18 VDC	±15 VDC	±190 mA	12 mA	556 mA	81	2200uF
EC4A06□	9-18 VDC	±5 VDC	±500 mA	12 mA	541 mA	77	2200uF
EC4A07□	9-18 VDC	3.3 VDC	1000 mA	7.5 mA	382 mA	72	4700uF
EC4A11□	18-36 VDC	5 VDC	1000 mA	5 mA	260 mA	80	4700uF
EC4A12□	18-36 VDC	12 VDC	470 mA	5 mA	280 mA	84	4700uF
EC4A13□	18-36 VDC	15 VDC	400 mA	5 mA	298 mA	84	4700uF
EC4A14□	18-36 VDC	±12 VDC	±230 mA	7.5 mA	280 mA	82	2200uF
EC4A15□	18-36 VDC	±15 VDC	±190 mA	7.5 mA	293 mA	81	2200uF
EC4A16□	18-36 VDC	±5 VDC	±500 mA	7.5 mA	260 mA	80	2200uF
EC4A17□	18-36 VDC	3.3 VDC	1000 mA	5 mA	186 mA	74	4700uF
EC4A21□	36-72 VDC	5 VDC	1000 mA	2 mA	132 mA	79	4700uF
EC4A22□	36-72 VDC	12 VDC	470 mA	2 mA	142 mA	83	4700uF
EC4A23□	36-72 VDC	15 VDC	400 mA	2 mA	154 mA	81	4700uF
EC4A24□	36-72 VDC	±12 VDC	±230 mA	3 mA	142 mA	81	2200uF
EC4A25□	36-72 VDC	±15 VDC	±190 mA	3 mA	147 mA	81	2200uF
EC4A26□	36-72 VDC	±5 VDC	±500 mA	3 mA	130 mA	80	2200uF
EC4A27□	36-72 VDC	3.3 VDC	1000 mA	2 mA	93 mA	74	4700uF

NOTE:

1. □ Can be None, M, H, HM, MS or HMS.
2. Nominal Input Voltage is 12, 24 or 48 VDC.
3. Typical Value at Nominal Input Voltage and Full Load.

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 ..... ±2.0% max.
Voltage Balance (Dual) ..... ±1.0% max.
Temperature Coefficient ..... ±0.05%/℃ max.
Ripple & Noise, 20MHz BW ..... 3.3V/5V ..... 100mV pk-pk, max
12V/15V ..... 1% pk-pk max.
Short Circuit Protection ..... Continuous
Line Regulation ..... Single/Dual (note1) ..... ±0.5% max.
Load Regulation ..... Single (note2) ..... ±0.5% max.
Dual (note3) ..... ±1.0% max.

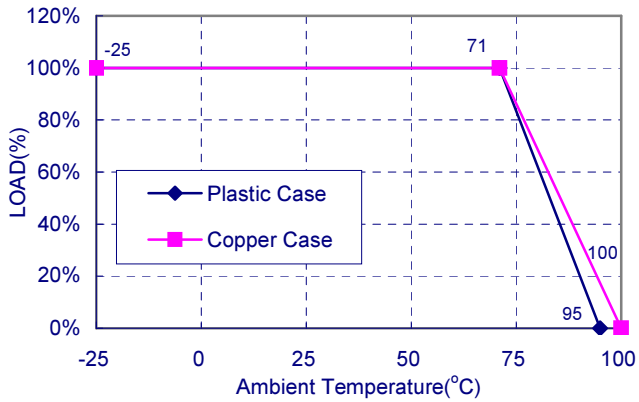
NOTE:

1. Measured from high line to low line.
2. Measured from full load to 10% load.
3. Measured from full load to 1/4 load.
4. Maximum case temperature under any operating condition should not be exceed 95℃ (plastic case),100℃ (copper case).

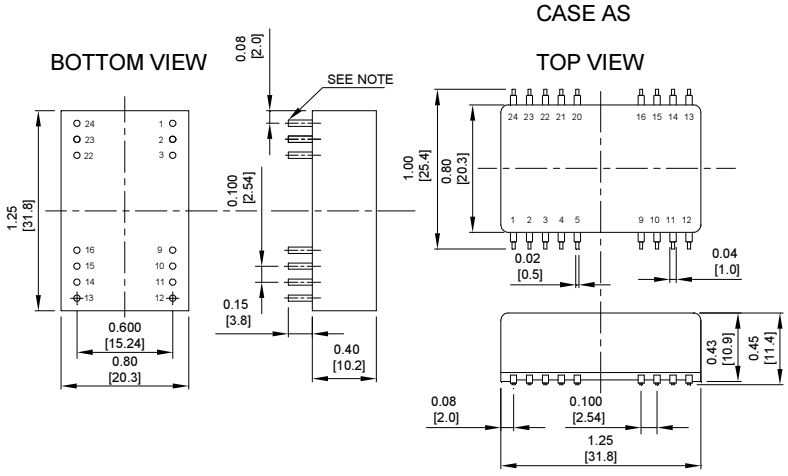
GENERAL SPECIFICATIONS:

Efficiency ..... See Table
Isolation Voltage:
500 VDC min. ..... Standard Models
3K VDC min. ... (Non-Conductive Black Plastic Only) ..... Suffix "H" Models
1.5K VDC min. ..... Suffix "HM" Models
Isolation Resistance ..... 10^9 ohm min.
Switching Frequency ..... 100KHz min.
Operating Ambient Temperature Range ..... -25℃ to +71℃
Power De-Rating Curve ..... See Figure1
Case Temperature (note4) ... Plastic/Copper Case... 95℃/100℃ max.
Cooling ..... Natural Convection
Storage Temperature Range ..... -40℃ to +100℃
Humidity ..... 95% RH max. Non Condensing
MTBF ..... MIL-HBDK-217F ..... 2000Khrs typ.
Dimensions ..... DIP..... 1.25×0.80x0.40 inches (31.8x20.3×10.2 mm)
SMD ... 1.25×0.80x0.45 inches (31.8x20.3×11.4 mm)
Case Material:
Standard Models ..... Non-Conductive Black Plastic
Suffix "M" Models ..... Black Coated Copper with Non-Conductive Base
Suffix "S" Models ..... SMD Package
Weight 12.5g

Figure1.Typical Derating curve for Natural Convection



Case A Dimensions:



PIN CONNECTION									
	500 VDC					1.5K & 3K VDC			
Pin	Single Output		Dual Output		Pin	Single Output		Dual Output	
	DIP	SMD	DIP	SMD		DIP	SMD	DIP	SMD
1,24	+V Input		+V Input		1,24	NP	NC	NP	NC
2,23	NC		-V Output		2,3	-V Input		-V Input	
3,22	NC		Common		4,5	NP	NC	NP	NC
4	NP	NC	NP	NC	9	NC		Common	
5	NP	NC	NP	NC	10,15	NC		NC	
9	NP	NC	NP	NC	11	NC		-V Output	
10,15	-V Output		Common		12,13	NP	NC	NP	NC
11,14	+V Output		+V Output		14	+V Output		+V Output	
12,13	-V Input		-V Input		16	-V Output		Common	
16	NP	NC	NP	NC	20,21	NP	NC	NP	NC
20,21	NP	NC	NP	NC	22,23	+V Input		+V Input	

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

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