M8647 SERIES

THE MOST COMPLETE
MINIATURE, HIGH DENSITY,
QUAD OUTPUT,
DC/DC CONVERTERS
(UP TO 125W)

APPLICATIONS

Military, Ruggedized, Telecom, Industrial

SPECIAL FEATURES

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Fixed switching frequency (250 KHz)
- External synchronization capability
- TTL logic enable
- EMI/RFI filters included
- Indefinite short circuit protection with auto-recovery
- Over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

ENVIRONMENTAL

Meets or exceeds MIL-STD-810D

Temperature:
Operating –55C to +90°C (baseplate)
Storage –55C to +125°C

RELIABILITY

150,000 hours, calculated per MIL-STD-217F at +85°C baseplate, ground fixed.

ELECTRICAL SPECIFICATIONS

DC INPUT

DC Input range: 18 to 70 VDC

Input transient protection:
All models meet or exceed (no damage)
MIL-STD-1275A (100V for 50 mSec) and
MIL-STD-704A, MIL-STD-704D (80V for 0.1 Sec)

Efficiency: up to 80%

EMI/RFI:
Meets or exceeds MIL-STD-461D
CE101, CE102, CS101, CS114, CS115,
CS116, RE101, RE102, RS101, RS103

Isolation:
200V between Input and Output
200V between Input and Case

DC OUTPUT (floating)

Line/Load regulation:
Less than 1% (no load to full load, –55°C to +90°C)

Ripple and Noise: 50mVp-p, typical (max. 1%)

Current limiting (HickUp):
Continuous protection for unlimited time

Over voltage protection:
Passive tranzorb on outputs.

Over temperature protection:
Shutdown at baseplate temperature of +105°C (±5°C)
Automatic recovery at baseplate temperature
lower than +95°C (±5°C)

Isolation:
200V between Output and Input
100V between Output and Case

SELECTION GUIDE

Model	Input	Output #1	Output #2	Output #3	Output #4	Regulation	Ripple (20 MHz BW)
8647-1	18-70V	5V/8A	15V/1.5A	15V/1.5A	28V/1A	± 1%	50 mVp-p
8647-2	18-70V	5V/8A	12V/1.8A	12V/1.8A	28V/1A	± 1%	50 mVp-p
8647-3	18-70V	5V/8A	12V/1A	12V/1A	28V/2A	± 1%	50 mVp-p
8647-3SL	18-70V	5V/8A	12V/1A	-12V/1A	28V/2A	± 1%	50 mVp-p
8647-4	18-70V	5V/2A	-5V/2A	15V/4A	15V/1A	± 1%	50 mVp-p
8647-5	18-70V	5V/8A	15V/1A	15V/1A	28V/1A	± 1%	50 mVp-p
8647-6	18-70V	5.65V/8A	-5.65V/2A	15.65V/2.5A	15.65V/2.5A	± 1%	50 mVp-p
8647-7	18-70V	5.15V/8A	15V/1.5A	15V/1.5A	5.15V/2A	± 1%	50 mVp-p
8647-8	18-70V	5.3V/5.3A	15V/0.7A	-12V/0.7A	5.1V/1.3V)	± 1%	50 mVp-p
8647-9	18-70V	5V/4A	5V/4A	5V/2A	5V/2A	± 1%	50 mVp-p
8647-10	18-70V	5V/8A	15V/1A	15V/1A	28V/1A	± 1%	50 mVp-p
8647-11	18-70V	5.3V/3A	15V/1.5A	-15V/0.150A	30V/0.070A	± 1%	50 mVp-p
8647-12	18-70V	5V/3A	15V/2A	15V/1A	30V/0.070A	± 1%	50 mVp-p
8647-14	18-70V	5V/1.2A	15V/0.7A	15V/2A	28V/1A	± 1%	50 mVp-p
8647-15	18-70V	5V/3A	5.3V/1A	15V/3.5A	15V/1A	± 1%	50 mVp-p
8647-16	18-70V	5.1V/12A	15V/1A	15V/1A	8V/1.5A	± 1%	50 mVp-p
8647-17OC	18-70V	5V/3A	15V/3A	15V/3A	30V/1A	± 1%	50 mVp-p
8647-18	18-70V	5V/3A	5V/1A	15V/2A	15V/1A	± 1%	50 mVp-p
8647-19	18-70V	5V/2A	15V/0.5A	28V/3A	15V/1A	± 1%	50 mVp-p
8647-20	18-70V	5V/1.2A	15V/2A	28V/1A	15V/1A	± 1%	50 mVp-p
8647-21	18-70V	15V/5.2A	-15V/0.5A	36V/0.5A		± 1%	50 mVp-p
8647-22	18-70V	5V/3A	15V/0.5A	15V/0.5A	28V/4A	± 1%	50 mVp-p
8647-24	18-70V	5V/8A	15V/1.25A	-15V/1.25A	28V/1.5A	± 1%	50 mVp-p
8647-26	18-70V	5V/2A	8V/2A	15V/4A	15V/1A	± 1%	50 mVp-p
8647-27	18-70V	5V/5A	5V/2A	15V/2A	15V/2.5A	± 1%	50 mVp-p
8647-29	18-70V	3.3V/15A	5V/3A	7V/2A	15V/2A	± 1%	50 mVp-p
8647-30	18-70V	5V/8A	12V/1.8A	12V/1.8A	28V/1A	± 1%	50 mVp-p
8647-31	18-70V	3.3V/11A	5V/9.5A	15V/1.3A	14V/1.2A	± 1%	50 mVp-p
8647-51	18-70V	5V/10A	15V/2A	15V/2A	5V/1.2A	± 1%	50 mVp-p

Note: other voltages and currents are available, consult factory.

PIN ASSIGNMENT

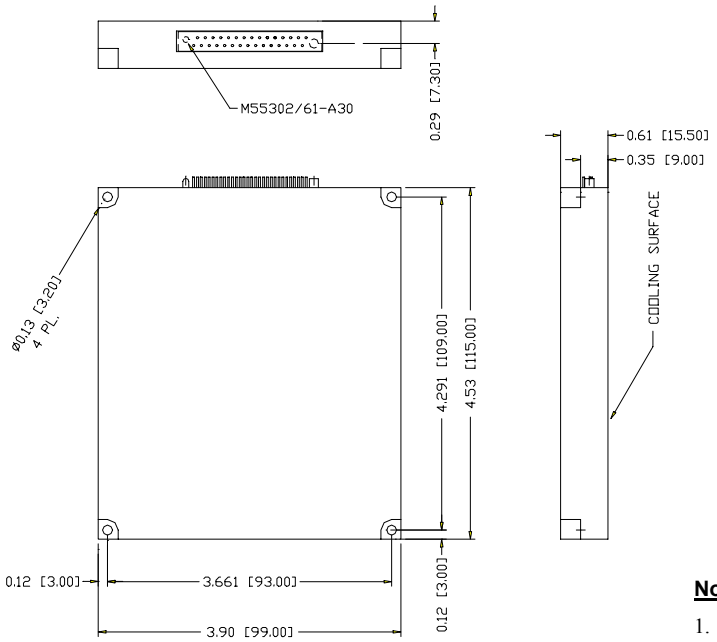
PIN No.	PIN Function
1	+ OUT 1
2	+ OUT 1
3	- OUT 1
4	- OUT 1
5	- OUT 4
6	+ OUT 2
7	- OUT 2
8	+ OUT 3
9	- OUT 3
10	N.C.

PIN No.	PIN Function
11	SIGNAL RTN *
12	- VIN
13	- VIN
14	+ VIN
15	+ VIN
16	+ OUT 1
17	+ OUT 1
18	- OUT 1
19	- OUT 1
20	+ OUT 4

PIN No.	PIN Function
21	+ OUT 2
22	- OUT 2
23	+ OUT 3
24	- OUT 3
25	INHIBIT
26	- VIN
27	- VIN
28	+ VIN
29	+ VIN
30	SYN

* Signal RTN for the INHIBIT and the SYN signals.

OUTLINE DRAWING



Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:
   .XX ±.02 IN
   .XXX ±.01 IN
3. Weight: 12.8 Oz (370 gr)
4. Add suffix SL to specify connector with guideset per M55302/57-A30X
5. Add suffix OC to specify connector with guideset per M55302/63-C30 (Opposite Connector with different pin out)

* Specifications are subject to change without prior notice by the manufacturer