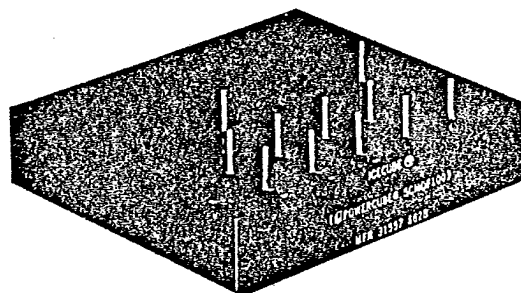


50 Watt ICECUBE™ Current Mode DC-DC Converter

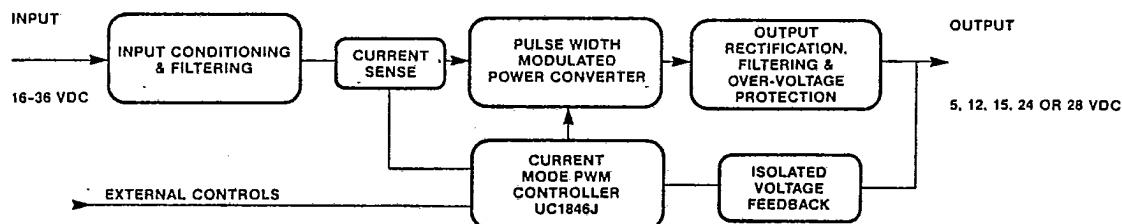
Features:

- Low Profile Package
- Current Mode Control
- Power MOSFET Design
- MIL-STD-704 D Compliant
- Components Derated to Meet or Exceed NAVSO P-3641 (NAVMAT P-4855-1A)
- Wide Input Range
- Environmental Conditions to MIL-STD-801C

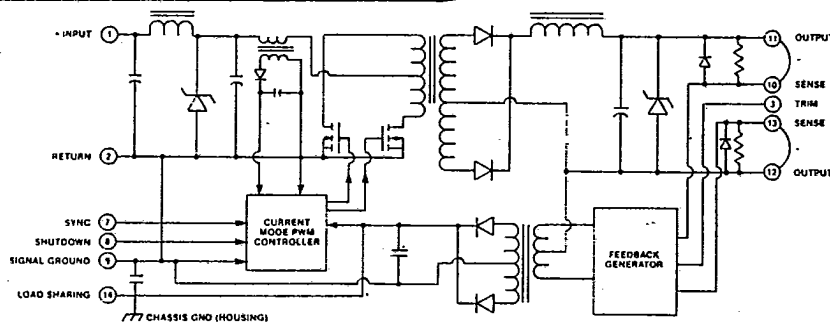


Powercube's 50W CMDF's are rugged, low profile, modularized, current mode control, switching regulators providing fully isolated high efficiency power conversion from a broad DC input range. Excellent transient response is achieved. Pulse by pulse current limiting and a 200kHz operating frequency are features of this state-of-the-art design. These units are parallelable to achieve higher total output power. Other features include overload and short circuit protection, over voltage zener protection, $\pm$ remote sense, load sharing, frequency synchronization and remote on/off control.

Functional Block Diagram



Simplified Electrical Schematic



POWERCUBE

Eight Suburban Park Drive

Billerica, MA 01821

(508) 667-9500

FAX (508) 667-6280

9000-1101

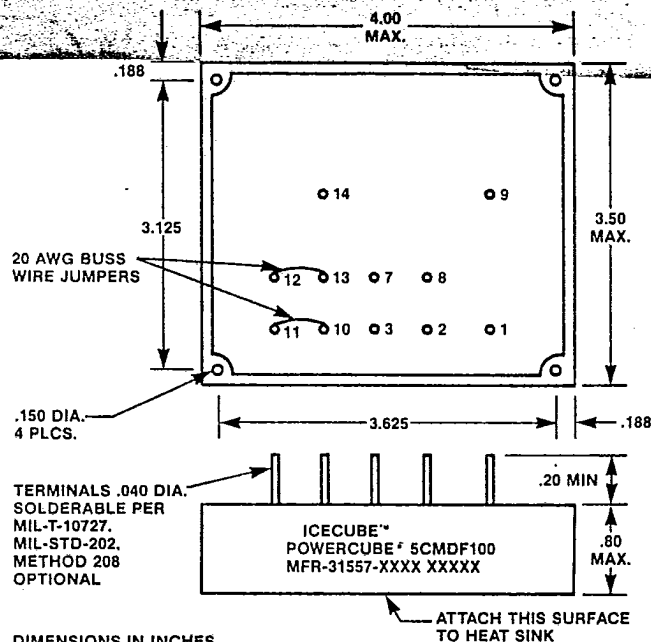
50 Watt ICECUBE™ Current Mode DC-DC Converter

T-57-11

Specifications:

PARAMETER	5CMD100	12CMD50	15CMD35	24CMD25	28CMD20
OUTPUT VOLTAGE (VDC):	5.0	12.0	15.0	24.0	28.0
SETTING @ NOM. LINE, F.L.:	-1%	±1%	±1%	±1%	-1%
I _{OUT} (AMPS MAX.):	1.0	5	3.5	2.5	2
EFFICIENCY (TYP.) AT NOM. LINE, FULL LOAD	74%	78%	80%	80%	80%
OUTPUT RIPPLE/NOISE DC TO 20 MHz, 10% TO FULL LOAD, NOM. LINE mV p-p (MAX):	65	75	80	80	80
TRANSIENT RESPONSE, mV MAX					
25% TO 75% LOAD	175	175	175	175	175
75% TO 25% LOAD	175	175	175	175	175
RETURN W/IN 1% OF V _{NOM} FOR 1 SEC:	300	200	200	100	100
NOMINAL OPERATING FREQUENCY (kHz):	200	200	200	200	200
EXTERNAL TRIM (PIN 3) % OF V _{OUT} :	-10..-2	-10	±10	-10	-10
INPUT VOLTAGE	16-36VDC (PROTECTED FOR POSITIVE TRANSIENTS OF MIL-STD-704)				
LINE REGULATION (MAX.) AT FULL LOAD:			0.15%		
LOAD REGULATION (MAX.) 10% TO FULL LOAD:			0.3%		
TEMPERATURE COEFFICIENT OF OUTPUT VOLTAGE:			-0.015% PER DEG C MAX.		
ISOLATION:					
PIN TO CASE			500 VDC MIN		
INPUT TO OUTPUT			500 VDC MIN		
CAPACITANCE			2200 PF		
TURN-ON OVERSHOOT (MAX.) ANY INPUT VOLTAGE, 10% TO FULL LOAD, FULL TEMP. RANGE (MAX)			5%		
TEMPERATURE RANGE	-55°C TO +100°C (BASEPLATE) OPERATING -65°C TO +125°C STORAGE				
WEIGHT	17 oz. max				

Standard Housing Dimensions:



DIMENSIONS IN INCHES.

MODULE PIN NUMBERS SHOWN FOR REFERENCE ONLY
AND ARE NOT NORMALLY PRINTED ON MODULE.

FOR PIN REGISTRATION, CONSULT FACTORY

TOLERANCES: .XXX = ±.010 UNLESS OTHERWISE
SPECIFIED

MATERIAL: 6061-T6 ALUMINUM PER QQ-A-250/11

FINISH: BLACK ANODIZE PER MIL-A-8625, TYPE II, CLASS 2

MTBF Ratings:

MTBF Ratings (for representative environments)
per MIL-HDBK-217E — Parts Stress Method*

Module Part No.	ENVIRONMENT				
	Ground Benign	Naval Sheltered	Ground Mobile	Airborne (Inhab.) Fighter	Naval Unsheltered
5CMD100	547,230	224,490	134,796	101,814	103,288
12CMD50	546,268	218,811	132,850	97,921	102,165
15CMD35	526,271	203,615	124,111	93,440	93,602
24CMD25	514,273	194,978	117,606	88,508	88,216
28CMD20	509,983	192,056	112,702	82,811	85,185

*Module baseplate temperature = +85°C

All ratings are specified in hours.


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