

12.5-30 Watt Hybrid

Features

- Rad Hard: TID > 100kRad(Si)
- 2:1 margin: Operates beyond 200kRad TID
- No SEE: LET > 82MeV*cm²/mg
- Proton Resistant: No optocouplers used
- Specifically engineered for 70 VDC satellite bus
- Completely self contained Thick Film Hybrid DC-DC Converter
- No external filter caps required
- Fully isolated design
- "Inhibit-not" function
- Power on soft start
- 200 kHz operation for low ripple and fast response time
- Built-in EMI input filter meets MIL-STD-461C requirements CE01, CE03, CS01, CS02 and CS06
- Short circuit and overvoltage protection
- Capability of external sync for switching frequencies
- Built-in test capability

Specifications

INPUT: 70 VDC nominal

Range: 55 to 90 VDC continuous

ISOLATION:

Input to case: 500 VDC

Input to output: 500 VDC

Output to case: 100 VDC

ENVIRONMENT:

Storage temperature: -55°C to +150°C

Shock: 50 G's

Acceleration: 500 G's

Vibration: 30 G's

Grades EU, R & S:

Full Power Output at T_{case} = +85°C

Linearly derates to zero at T_{case} = +115°C

Grades RE & SE:

Full Power Output at T_{case} = +125°C

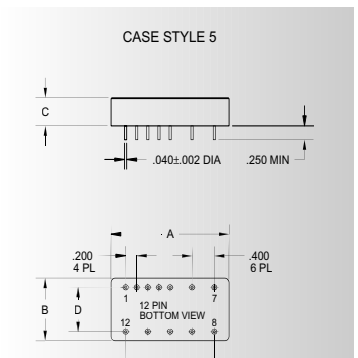
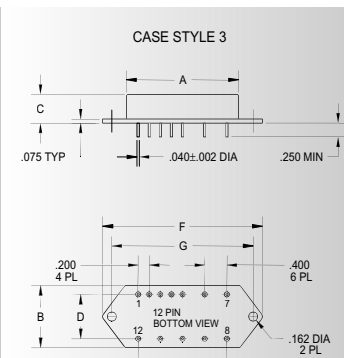
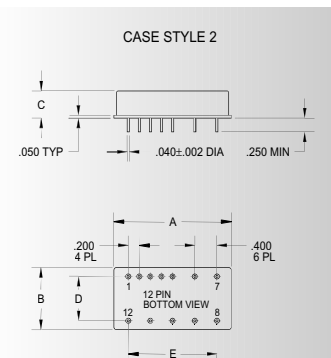
Linearly derates to zero at T_{case} = +135°C

WEIGHT: 75 grams typical

SINGLE OUTPUT DEVICES		8680-S02 (12W)			8680-S02.5 (15W)			8680-S03.3 (20W)			8680-S05 (30W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	—	+1.9	+2.0	+2.1	+2.4	+2.5	+2.6	+3.2	+3.3	+3.4	+4.9	+5.0	+5.1
Output current	V _{in min} — V _{in max}	—	—	6.06A	—	—	6.06A	—	—	6.06A	—	—	6A
Efficiency	P _{out} = max rated load	56%	59%	—	61%	64%	—	66%	69%	—	71%	74%	—
Line regulation	P _{out} = max rated load V _{in min} — V _{in max}	—	10mV	30mV	—	10mV	30mV	—	10mV	30mV	—	10mV	50mV
Load regulation	P _{out} = 10% to F.L.	—	10mV	30mV	—	10mV	30mV	—	10mV	30mV	—	10mV	50mV
Output ripple	F.L. BW 2 MHz mV _{pp}	—	25	50	—	30	60	—	30	65	—	40	85

SINGLE OUTPUT DEVICES		8680-S05.2 (30W)			8680-S12 (30W)			8680-S15 (30W)			8680-S28 (30W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	—	+5.1	+5.2	+5.3	+11.9	+12.0	+12.1	+14.9	+15.0	+15.1	+27.8	+28.0	+28.2
Output current	V _{in min} — V _{in max}	—	—	5.76A	—	—	2.5A	—	—	2A	—	—	1.07A
Efficiency	P _{out} = max rated load	71%	74%	—	78%	82%	—	79%	83%	—	78%	82%	—
Line regulation	P _{out} = max rated load V _{in min} — V _{in max}	—	10mV	50mV	—	20mV	100mV	—	25mV	125mV	—	50mV	250mV
Load regulation	P _{out} = 10% to F.L.	—	10mV	50mV	—	20mV	100mV	—	25mV	125mV	—	50mV	250mV
Output ripple	F.L. BW 2 MHz mV _{pp}	—	40	85	—	60	150	—	75	180	—	150	350

Model No.	Case Style	Pin Count	Mounting
8680	2	12	Solder Sealed Flangeless PCB Mount
8680	F	12	Solder Sealed PCB Mount with Flange
8680	I	12	Seam Weld Flangeless PCB Mount
8680	IF	12	Seam Weld PCB Mount with Flange
8680	WF	8	Seam Weld Chassis Mount with Flange
8680	PB	10	Solder Sealed Flangeless PCB Stud Mount
8680	PE	12	Seam Weld Flangeless PCB Stud Mount



TOLERANCES: ALL DIMENSIONS ±0.01 EXCEPT F = MAX, C = +0.01/-0.02; DRAWINGS IN INCHES.

Case Dimensions

Units: inches | millimeters

Case Style	A	B	C	D	E	F	G
2	2.200 55.880	1.350 34.290	0.495 12.573	1.000 25.400	1.600 40.640	— —	— —
3 F	2.200 55.880	1.350 34.290	0.495 12.573	1.000 25.400	1.600 40.640	2.960 75.184	2.610 66.294
5 I	2.225 56.515	1.350 34.290	0.495 12.573	1.000 25.400	1.600 40.640	— —	— —
6 IF	2.225 56.515	1.350 34.290	0.495 12.573	1.000 25.400	1.600 40.640	2.960 75.184	2.610 66.294
8 WF	2.225 56.515	1.710 43.434	0.495 12.573	— —	1.600 40.640	2.960 75.184	2.610 66.294
10 PB	2.225 56.515	1.350 34.290	0.495 12.573	1.000 25.400	1.600 40.640	— —	— —
12 PE	2.225 56.515	1.350 34.290	0.495 12.573	1.000 25.400	1.600 40.640	— —	— —

