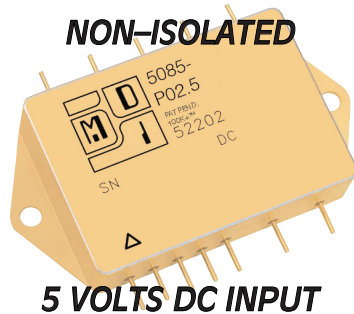


# 6-15 WATT HYBRID

## POINT OF LOAD DC-DC REGULATORS



### Features

- Rad Hard: TID > 100kRad(Si)
- 2:1 margin: Operates beyond 200kRad TID
- No SEE:LET > 82MeV\*cm<sup>2</sup>/mg
- Proton Resistant: No optocouplers used
- Synchronous rectification for high efficiency
- Non-isolated for intermediate bus applications
- Adjustable output voltage trim
- Thick Film Hybrid DC-DC Regulator
- "Inhibit-not" function
- 100kHz operation
- Sync input 1:1, 95-105 kHz
- Full hermetic package, solder seal and seam welded; PC and Chassis mount options

### Specifications

**INPUT:** 5 VDC nominal

Range: 4.6 to 5.4 VDC continuous

**ISOLATION:**

Input-Output: Non-Isolated

Input and Output to case: 100 VDC

**OUTPUT:**

External capacitance recommended for specified performance

**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 Output Power at  $T_{case} = +85^{\circ}C$

Linearly derates to zero at  $T_{case} = +115^{\circ}C$

Grades RE & SE:

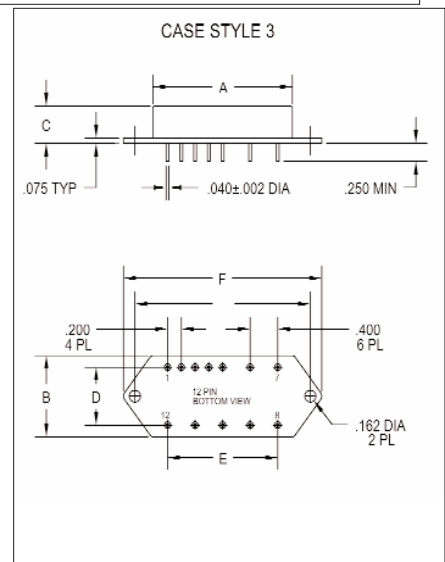
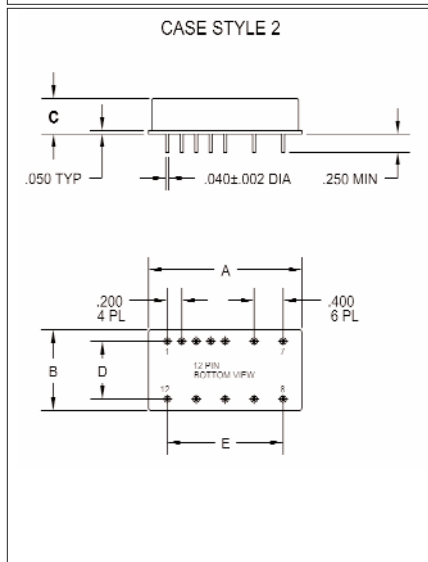
Full Power Output at  $T_{case} = +125^{\circ}C$

Linearly derates to zero at  $T_{case} = +135^{\circ}C$

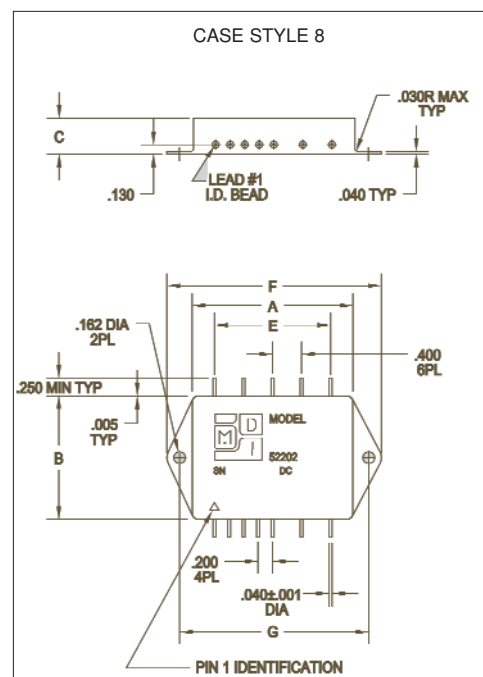
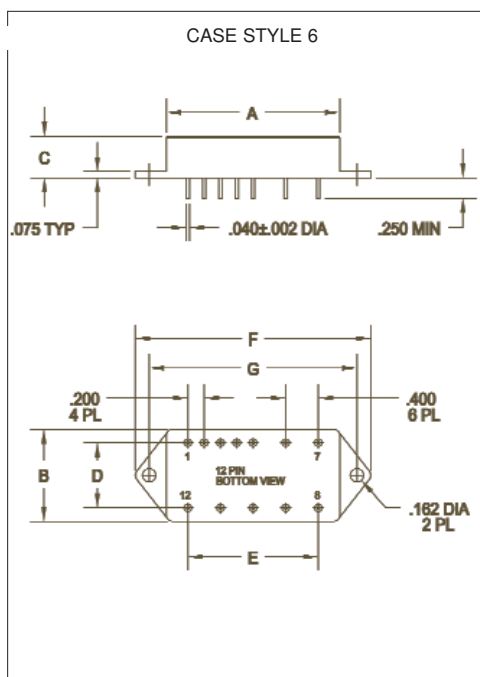
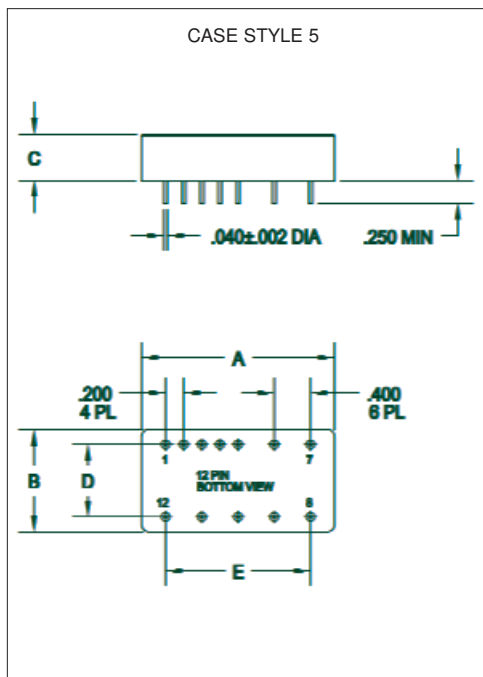
**WEIGHT:** 50 grams typical

## SERIES 5085

POSITIVE OUTPUT CONVERTERS		5085-P01 (6W)			5085-P01.2 (7.2W)			5085-P01.5 (9W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	(Trim Range)	+0.95	+1.0	+1.05	+1.15	+1.2	+1.25	+1.4	+1.5	+1.6
Output current	$V_{in min} - V_{in max}$	—	—	6A	—	—	6A	—	—	6A
Efficiency	$P_{out} = \text{max rated load}$	—	75%	—	—	78%	—	—	78%	—
Line regulation	$V_{in min} - V_{in max}$ $P_{out} = \text{max rated load}$	—	10mV	30mV	—	10mV	30mV	—	10mV	30mV
Load regulation	$P_{out} = 10\%$ to F.L.	—	10mV	30mV	—	10mV	30mV	—	10mV	30mV
Output ripple	F.L. BW 2 MHz $mV_{pp}$	—	20	—	—	20	—	—	20	—
External Output Cap	( $\mu F$ )	1000	—	4000	1000	—	4000	1000	—	4000
POSITIVE OUTPUT CONVERTERS		5085-P01.8 (10.8W)			5085-P02.0 (12W)			5085-P02.5 (15W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	(Trim Range)	+1.7	+1.8	+1.9	+1.9	+2.0	+2.1	+2.4	+2.5	+2.6
Output current	$V_{in min} - V_{in max}$	—	—	6A	—	—	6A	—	—	6A
Efficiency	$P_{out} = \text{max rated load}$	—	80%	—	—	82%	—	—	85%	—
Line regulation	$V_{in min} - V_{in max}$ $P_{out} = \text{max rated load}$	—	10mV	50mV	—	10mV	50mV	—	20mV	100mV
Load regulation	$P_{out} = 10\%$ to F.L.	—	10mV	50mV	—	10mV	50mV	—	20mV	100mV
Output ripple	F.L. BW 2 MHz $mV_{pp}$	—	20	—	—	20	—	—	25	—
External Output Cap	( $\mu F$ )	1000	—	4000	1000	—	4000	1000	—	4000
POSITIVE OUTPUT CONVERTERS		5085-P03.3 (15W)								
PARAMETER	CONDITION	MIN	TYP	MAX						
Output voltage	(Trim Range)	+3.2	+3.3	+3.4						
Output current	$V_{in min} - V_{in max}$	—	—	4.5A						
Efficiency	$P_{out} = \text{max rated load}$	—	90%	—						
Line regulation	$V_{in min} - V_{in max}$ $P_{out} = \text{max rated load}$	—	25mV	125mV						
Load regulation	$P_{out} = 10\%$ to F.L.	—	25mV	125mV						
Output ripple	F.L. BW 2 MHz $mV_{pp}$	—	30	—						
External Output Cap	( $\mu F$ )	1000	—	4000						
Model No.	Case Style	Pin Count	Mounting							
5085	2	12	Solder Sealed Flangeless PCB Mount							
5085 F	3	12	Solder Sealed PCB Mount with Flange							
5085 G	5	12	Seam Weld Flangeless PCB Mount							
5085 GF	6	12	Seam Weld PCB Mount with Flange							
5085 UF	8	12	Seam Weld Chassis Mount with Flange							



## PROTON RAD HARD 100K+<sup>®</sup> TECHNOLOGY



### Case Dimensions

Units: Inches | millimeters

Case Style	A	B	C	D	E	F	G
2	2.130   54.102	1.120   28.448	0.375   9.525	0.800   20.320	1.600   40.640	—   —	—   —
3 F	2.130   54.102	1.120   28.448	0.375   9.525	0.800   20.320	1.600   40.640	2.890   73.406	2.550   64.770
5 G	2.130   54.102	1.120   28.448	0.375   9.525	0.800   20.320	1.600   40.640	—   —	—   —
6 GF	2.130   54.102	1.120   28.448	0.375   9.525	0.800   20.320	1.600   40.640	2.890   73.406	2.550   64.770
8 UF	2.160   54.864	1.510   38.354	0.495   12.573	—   —	1.600   40.640	2.890   73.406	2.550   64.770

### Pin Outs

Pin 1 Positive Input	Pin 7 V ref
Pin 2 Positive Input	Pin 8 Adjust
Pin 3 Input/Output Common	Pin 9 I out
Pin 4 Output	Pin 10 Sync Input
Pin 5 Output	Pin 11 BIT
Pin 6 Case Ground	Pin 12 Inhibit-Not

Specifications subject to change.

#### GRADE LEVELS:

Please specify **GRADE LEVEL** for your application. EU grade units will be shipped if no option is specified.

EU Engineering Units

R 100 K+™, +85°C military/aerospace

RE 100 K+™, +125°C military/aerospace

S 100 K+™, +85°C space

SE 100 K+™, +125°C space

