

30 Watt Hybrid

Features

- Completely self contained Thick Film Hybrid DC-DC Converter
- For MIL-STD-704/1275 applications
- Built-in EMI input filter meets MIL-STD-461C requirements CE01, CE03, CS01, CS02 and CS06
- "Inhibit-not" function
- Short circuit protection
- Fully isolated, input to output
- Triple outputs
- 200 kHz operation for low ripple and fast response time
- No external filter caps required
- Full hermetic package

Specifications

INPUT: 28 VDC nominal
 Range: 16 to 50 VDC continuous
 18 to 50 VDC full power
 Survives 80 V transients/MIL-STD-704A

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
 Grade M:

Full Power Output at $T_{case} = +85^{\circ}C$
 Linearly derates to zero at $T_{case} = +115^{\circ}C$
 Grade E:

Full Power Output at $T_{case} = +125^{\circ}C$
 Linearly derates to zero at $T_{case} = +135^{\circ}C$

WEIGHT: 65 grams typical

NOTE: The main regulated output is the 5.0 VDC at 3 Amperes. The other outputs are regulated by virtue of being wound on the same transformer, therefore are termed "cross-regulated." Since the cross-regulated outputs do not have a linear (dissipative) regulator, the converter is more efficient and can deliver higher overall power than a corresponding linear post-regulated converter.

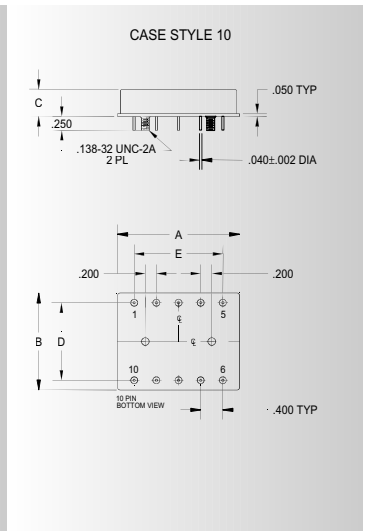
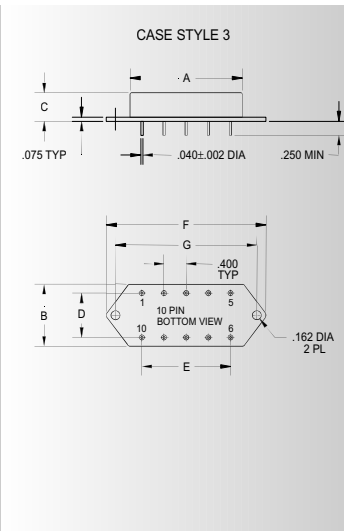
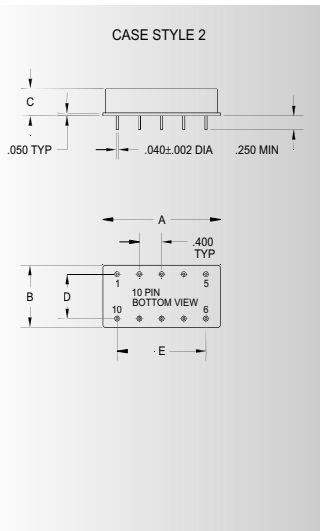
SINGLE OUTPUT DEVICES

PARAMETER	CONDITION				
Output voltage	—				
Output current	$V_{in\ min} - V_{in\ max}$				
Efficiency	$P_{out} = \text{max rated load}$				
Line regulation	$P_{out} = \text{max rated load}$ $V_{in\ min} - V_{in\ max}$				
Load regulation	$P_{out} = 10\%$ to F.L.				
Output ripple	F.L. BW 2 MHz mV _{pp}				

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Output current	$V_{in\ min} - V_{in\ max}$				
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Output ripple	F.L. BW 2 MHz mV _{pp}				

Model No.	Case Style	Pin Count	Mounting
3138	2	10	Solder Sealed Flangeless PCB Mount
3138	F	3	Solder Sealed PCB Mount with Flange
3138	PA	10	Solder Sealed Flangeless PCB Stud Mount
3138	MF	13	Seam Weld PCB Mount with Flange



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	1.950 49.530	1.350 34.290	0.495 12.573	1.000 25.400	1.600 40.640	— —	— —
3 F	1.950 49.530	1.350 34.290	0.495 12.573	1.000 25.400	1.600 40.640	2.710 68.834	2.360 59.944
10 PA	1.950 49.530	1.350 34.290	0.495 12.573	1.000 25.400	1.600 40.640	— —	— —
13 MF	1.950 49.530	1.350 34.290	0.495 12.573	1.000 25.400	1.600 40.640	2.710 68.834	2.360 59.944

DC-DC CONVERTERS

CROSS REGULATED TRIPLE OUTPUT SERIES

3138



28 VDC

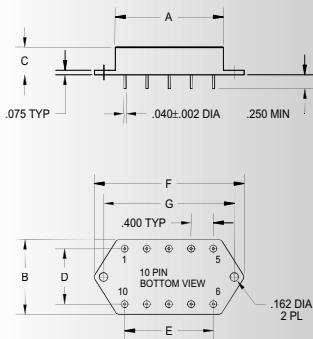
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DUAL OUTPUT DEVICES					
PARAMETER	CONDITION				
Output voltage	$+I_{out} = -I_{out}$				
Output current*	$V_{in\ min} - V_{in\ max}$				
Efficiency	$P_{out} = \text{max rated load}$				
Line regulation	$P_{out} = \text{max rated load}$ $V_{in\ min} - V_{in\ max}$				
Load regulation†	$P_{out} = 10\%$ to F.L.				
Output ripple	F.L. BW 2 MHz mV _{pp}				

Notes: *Up to 90% full power available from either output if rated output power is not exceeded; †balanced load conditions.

TRIPLE OUTPUT DEVICES		3138-T05 (30W)			3138-T12 (30W)			3138-T15 (27W)					
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX			
Output voltage	$+I_{out} = -I_{out}$	+4.9	+5.0	+5.1	+4.9	+5.0	+5.1	+4.9	+5.0	+5.1			
		+4.75	+5.0	+5.25	+11.5	+12.0	+12.5	+14.5	+15.0	+15.5			
		-4.75	-5.0	-5.25	-11.5	-12.0	-12.5	-14.5	-15.0	-15.5			
Output current	$V_{in\ min} - V_{in\ max}$	300mA	—	3A	300mA	—	3A	300mA	—	3A			
		±150mA	—	±1.5A	±60mA	—	±625mA	±50mA	—	±500mA			
Efficiency	$P_{out} = \text{max rated load}$	65%	70%	—	70%	75%	—	70%	75%	—			
		—	10mV	25mV	—	10mV	25mV	—	10mV	25mV			
Line regulation	$P_{out} = \text{max rated load}$ $V_{in\ min} - V_{in\ max}$	—	±120mV	±220mV	—	±250mV	±500mV	—	±250mV	±500mV			
		—	25mV	50mV	—	25mV	50mV	—	25mV	50mV			
Load regulation	$P_{out} = 10\%$ to F.L.	—	±120mV	±220mV	—	±250mV	±500mV	—	±250mV	±500mV			
		—	—	80	—	—	80	—	—	80			
Output ripple	F.L. BW 2 MHz mV _{pp}	—	—	50	—	—	50	—	—	50			
		—	—	50	—	—	50	—	—	50			

CASE STYLE 13



3138-TXX

Pin 1	+ input	Pin 7	case
Pin 2	main output	Pin 8	inhibit not
Pin 3	output return	Pin 9	N/C
Pin 4	- dual output	Pin 10	input return
Pin 5	+ dual output		
Pin 6	N/C		

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

- M** +85°C military
- E** +125°C military