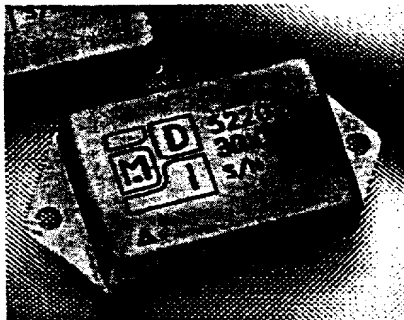


15-20 Watt HYBRID

DC-DC CONVERTERS

SERIES 3010



AVAILABLE WITH OR WITHOUT FLANGES

Features

- Completely self contained Thick Film Hybrid DC-DC Converter
- For MIL-STD-704/1275 applications
- Internal EMI filter
- T²L inhibit function
- Fully isolated
- Single, dual or triple outputs
- Current limiting, power on soft start
- 200 kHz operation for low ripple and fast response time
- No external filter caps required
- High reliability screening available, specify "M" (e.g. 3010M-T15)
- Full hermetic package
- "S" level configuration available
- Radiation hardened available

Specifications

INPUT: 28 VDC nominal

Range: 16 to 50 VDC continuous

Survives 80 V transients

OUTPUT: Voltage & Current (see chart)

REGULATION: (see chart)

RIPPLE: 50 mV peak-to-peak, typical

PROTECTION: Short circuit protection by current limit.

ISOLATION:

Input to case: 500 VDC

Input to output: 500 VDC*

(*) inputs shorted to case, outputs shorted together

ENVIRONMENT:

Full power from -55°C to +85°C T_{case}

Linearly derates to zero from 85°C to 115°C

Storage temperature: -55°C to +150°C

Shock: 50G

Acceleration: 500G

Vibration: 30G

WEIGHT: 40 grams

DIMENSIONS: 2.12" x 1.12" x 0.495"

(without flange)

SINGLE OUTPUT DEVICES										
PARAMETER	CONDITION	3010-S03.3 (20W)			3010-S05 (20W)			3010-S05.2 (20W)		
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output Voltage	—	+3.2	+3.3	+3.4	+4.9	+5.0	+5.1	+5.1	+5.2	+5.3
Output Current	V _{in} = 16 to 50 VDC	—	—	6.06 A	—	—	4 A	—	—	3.85 A
Efficiency	P _{out} = Max Rated Load	65%	69%	—	72%	75%	—	72%	76%	—
Line Regulation	P _{out} = Max Rated Load V _{in} = 16 to 50 VDC	—	7 mV	20 mV	—	7 mV	20 mV	—	10 mV	20 mV
Load Regulation	P _{out} = 0–20 W	—	5 mV	20 mV	—	5 mV	20 mV	—	10 mV	20 mV
Output Ripple	Full Load BW 2 MHz mV _{rms}	—	30	50	—	30	50	—	30	65

SINGLE OUTPUT DEVICES										
PARAMETER	CONDITION	3010-S12 (20W)			3010-S15 (20W)			3010-S28 (20W)		
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output Voltage	—	+11.9	+12.0	+12.1	+14.9	+15.0	+15.1	+27.8	+28.0	+28.2
Output Current	V_{in} = 16 to 50 VDC	—	—	1.67 A	—	—	1.33 A	—	—	714 mA
Efficiency	P_{out} = Max Rated Load	80%	82%	—	81%	83%	—	82%	84%	—
Line Regulation	P_{out} = Max Rated Load V_{in} = 16 to 50 VDC	—	10 mV	20 mV	—	10 mV	20 mV	—	10 mV	20 mV
Load Regulation	P_{out} = 0 to 20 W	—	10 mV	20 mV	—	10 mV	20 mV	—	10 mV	20 mV
Output Ripple	Full Load BW 2 MHz mV _{rms}	—	30	65	—	30	65	—	30	65

DUAL OUTPUT DEVICES										
PARAMETER	CONDITION	3010-D05 (20W)			3010-D12 (20W)			3010-D15 (20W)		
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output Voltage	$+I_{out} = -I_{out}$	+4.9	+5.0	+5.1	+11.9	+12.0	+12.1	+14.9	+15.0	+15.1
Output Current*	$V_{in} = 16$ to 50 VDC	150 mA	—	2 A	125 mA	—	833 mA	100 mA	—	667 mA
Efficiency	$P_{out} =$ Max Rated Load	72%	75%	—	81%	84%	—	82%	85%	—
Line Regulation	$P_{out} =$ Max Rated Load $V_{in} = 16$ to 50 VDC	—	10 mV	25 mV	—	10 mV	25 mV	—	10 mV	25 mV
Load Regulation†	$P_{out} = 1.5$ –15 or 2–20 W	—	20 mV	50 mV	—	20 mV	50 mV	—	20 mV	50 mV
Output Ripple	Full Load BW 2 MHz mV_{rms}	—	50	85	—	50	85	—	50	85

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

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TRIPLE OUTPUT DEVICES									
PARAMETER	CONDITION		3010-T12 (15W)			3010-T15 (15W)			
			MIN	TYP	MAX	MIN	TYP	MAX	
Output Voltage	+I _{out} = -I _{out}	MAIN	+4.9	+5.0	+5.1	+4.9	+5.0	+5.1	
		DUAL	+11.9	+12.0	+12.1	+14.9	+15.0	+15.1	
		DUAL	-11.9	-12.0	-12.1	-14.9	-15.0	-15.1	
Output Current	V _{in} = 16 to 50 VDC	MAIN	30 mA	—	1 A	30 mA	—	1 A	
		DUAL	15 mA	—	±208 mA	15 mA	—	±167 mA	
Efficiency	P _{out} = Max Rated Load		76%	79%	—	76%	79%	—	
Line Regulation	P _{out} = Max Rated Load V _{in} = 16 to 50 VDC	MAIN	—	0.1%	0.2%	—	0.1%	0.2%	
		DUAL	—	0.25%	0.4%	—	0.25%	0.4%	
Load Regulation	P _{out} = 1.5 to 15 W	MAIN	—	0.2%	0.4%	—	0.2%	0.4%	
		DUAL	—	0.25%	0.4%	—	0.25%	0.4%	
Output Ripple	Full Load BW 2 MHz mV _{rms}	MAIN	—	—	80	—	—	80	
		DUAL	—	—	30	—	—	30	

We can modify these units to meet your custom converter requirements.

MODULAR DEVICES INC

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