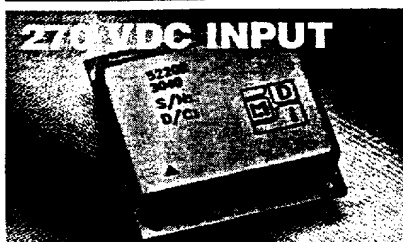


25-50 Watt HYBRID

RAD HARD DC-DC CONVERTERS



Features

- Specifically designed for redundant or individual space applications
- Completely self contained Thick Film Hybrid DC-DC Converter
- No external filter caps required
- Fully isolated design
- Operates from 200 VDC to 335 VDC for MIL-STD 704 applications
- T²L inhibit function
- Power on soft start
- 200 kHz operation for low ripple and fast response time
- RAD hard, 10⁵ total dose
- Built-in EMI input filter meets MIL-STD 461C requirements CEO3, CEO7, CS01, CS02 and CS06
- Short circuit and overvoltage protection with externally selectable wiring option which yields latching/non-latching option
- Non-latching reset interval is externally programmable by choosing a capacitor to select the time constant.
- Capability of external synch for switching frequencies
- Built-in test capability with T²L interface
- "S" level configuration available

Specifications

INPUT: 270 VDC nominal

Range: 200 VDC to 335 VDC continuous

Survives 475 V transients

OUTPUT: Voltage & Current (see chart)

REGULATION: (see chart)

RIPPLE: 50 mV peak-to-peak, typical

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: 125 grams

DIMENSIONS: 2.6" x 2.7" x 0.495"

FULL FEATURE SERIES 3040R

SINGLE OUTPUT DEVICES

PARAMETER	CONDITION	3040R-S03.3 (33W)			3040R-S05 (50W)			3040R-S05.2 (50W)		
		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} = 200–335 VDC	—	—	10 A	—	—	10 A	—	—	9.61 A
Efficiency	P _{out} = Max Rated Load	65%	69%	—	72%	75%	—	72%	75%	—
Line Regulation	P _{out} = Max Rated Load V _{in} = 200–335 VDC	—	7 mV	20 mV	—	7 mV	20 mV	—	10 mV	20 mV
Load Regulation	P _{out} = 0–50 W	—	5 mV	20 mV	—	5 mV	20 mV	—	10 mV	20 mV
Output Ripple	Full Load BW 2 MHz mV _{p-p}	—	30	50	—	30	50	—	30	65

SINGLE OUTPUT DEVICES

PARAMETER	CONDITION	3040R-S12 (50W)			3040R-S15 (50W)			3040R-S28 (50W)		
		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} = 200–335 VDC	—	—	4.17 A	—	—	3.3 A	—	—	1.79 A
Efficiency	P _{out} = Max Rated Load	80%	82%	—	81%	83%	—	82%	84%	—
Line Regulation	P _{out} = Max Rated Load V _{in} = 200–335 VDC	—	10 mV	20 mV	—	10 mV	20 mV	—	10 mV	20 mV
Load Regulation	P _{out} = 0–50W	—	10 mV	20 mV	—	10 mV	20 mV	—	10 mV	20 mV
Output Ripple	Full Load BW 2 MHz mV _{p-p}	—	30	65	—	30	65	—	30	65

DUAL OUTPUT DEVICES

PARAMETER	CONDITION	3040R-D05 (35W)			3040R-D12 (50W)			3040R-D15 (50W)		
		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} = 200–335 VDC	266 mA	—	3.5 A	158 mA	—	2.08 A	127 mA	—	1.67 A
Efficiency	P _{out} = Max Rated Load	72%	75%	—	81%	84%	—	82%	85%	—
Line Regulation	P _{out} = Max Rated Load V _{in} = 200–335 VDC	—	10 mV	25 mV	—	10 mV	25 mV	—	10 mV	25 mV
Load Regulation*	P _{out} = 3.5–35 or 5–50 W	—	20 mV	50 mV	—	20 mV	50 mV	—	20 mV	50 mV
Output Ripple	Full Load BW 2 MHz mV _{p-p}	—	50	85	—	50	85	—	50	85

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

TRIPLE OUTPUT DEVICES

PARAMETER	CONDITION	3040R-T12 (25W)			3040R-T15 (25W)		
		MIN	TYP	MAX	MIN	TYP	MAX
Output Voltage	+I _{out} = -I _{out}	MAIN			MAIN		
		DUAL			DUAL		
		DUAL			DUAL		
Output Current	V _{in} = 200–335 VDC	MAIN			MAIN		
Efficiency	P _{out} = Max Rated Load	DUAL			DUAL		
		DUAL			DUAL		
Line Regulation	P _{out} = Max Rated Load V _{in} = 200–335 VDC	MAIN			MAIN		
Load Regulation	P _{out} = 2.5–25 W	DUAL			DUAL		
		DUAL			DUAL		
Output Ripple	Full Load BW 2 MHz mV _{p-p}	MAIN			MAIN		
		DUAL			DUAL		

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

MODULAR DEVICES INC

BROOKHAVEN R&D PLAZA • ONE RONED ROAD • SHIRLEY, NEW YORK 11967

TEL 516-345-3100 • FAX 516-345-3106