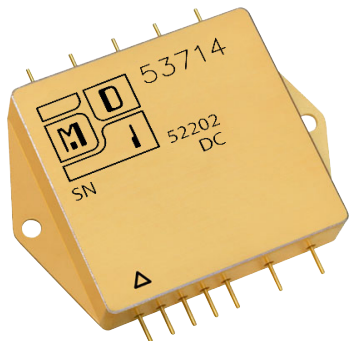


Series *3714

18 Watt Triple Output Sequenced Hybrid

Proton Rad Hard 100K+® DC – DC Converters



28, 50, 70, 100, 120 VDC INPUTS

Features

- Rad Hard: TID >100 kRad (Si)
- 2:1 margin: Operates beyond 200 kRad TID
- No SEE: LET > 82MeV*cm²/mg
- Proton Resistant: No optocouplers used
- 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
- "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
- Built-in test capability

Specifications

INPUT: See input voltage and range table.

ISOLATION:

Input to case: 500 VDC
 Input to output: 500 VDC
 Output to case: 100 VDC

ENVIRONMENT:

Operating temperature: -55°C to +125°C continuous baseplate (RE, SE)
 Storage temperature: -65°C to +150°C
 Shock: 50 G's
 Acceleration: 500 G's
 Vibration: 30 G's

Grade EU, L, R & S:

Full Power Output at T_{case} = +85°C
 Linearly derates to zero at T_{case} = +115°C

Grade LE, RE & SE:

Full Power Output at T_{case} = +125°C
 Linearly derates to zero at T_{case} = +135°C

Grade L & LE:

TID up to 45 kRAD (Si)
 No SEE uo to 60MeV*cm²/mg

WEIGHT: 90 grams maximum

PACKAGE: Case Style 8 chassis mount shown.

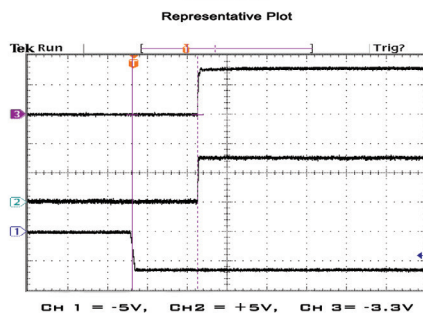
Model	Nominal Vin	Vin Range	Applications
53714	28	20-40	28VDC Satellite Bus
73714	50	35-70	50VDC Satellite Bus
83714	70	65-90	70VDC Satellite Bus
93714	100	85-120	100VDC Satellite Bus
33714	120	86-158	ISS/Orion Space Vehicle Bus

TRIPLE OUTPUT DEVICE		*3714 (18W)		
PARAMETER	CONDITION	MIN	TYP	MAX
Output voltage	+I _{out} = -I _{out}	+4.9	+5.0	+5.1
		+3.2	+3.3	+3.4
		-4.9	-5.0	-5.1
Output current	V _{in min} - V _{in max}	400mA	—	2.0A
		400mA	—	2.0A
Efficiency	P _{out} = max rated load	70%	72%	74%
		—	50mV	100mV
Line regulation	P _{out} = max rated load V _{in min} - V _{in max}	—	50mV	100mV
		—	35mV	100mV
Load regulation	P _{out} = 10% to F.L.	—	60mV	120mV
		—	60mV	120mV
Output ripple	F.L. BW 2 MHz mV _{pp}	—	30	50
		—	30	50
		—	30	50

- The Model x3714 is a triple output sequenced power converter ideally suited for mixed systems using PIN diodes or FET amplifiers where outputs are required to turn on and off in sequence so the negative gate voltage rises first and decays last with respect to the positive outputs.
- The x3714 turn-on sequencing feature is controlled by precision rad hard 100K+® MOSFET switches ensuring reliable operation of the FET or PIN diode loads that are enhanced at zero voltage and uncontrolled without negative gate bias.
- Turn-off sequencing is achieved by pre-set RC networks, ensuring complete control of the negative gate output as the positive outputs decay first even during input power loss or brown-out conditions.
- Control loop is closed about the +5 and +3.3 volt outputs while the -5 volt output is precision post regulated.
- Other output voltage combinations are available: consult factory

Turn-On Delay

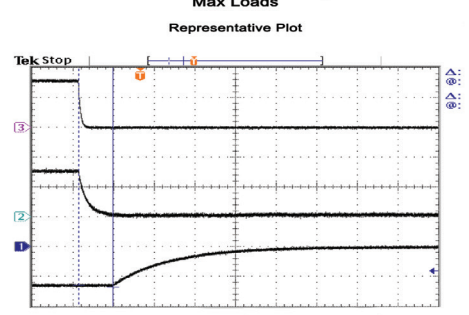
Max Loads



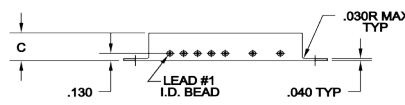
Once the -5V output comes on, there is a delay to the turn-on of the +5V and +3.3V outputs

Turn-Off Delay

Max Loads



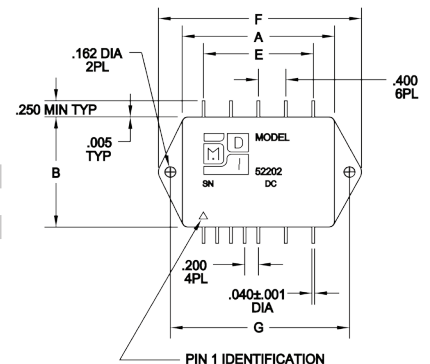
The time interval delay from the initial decay of the +5V and +3.3V outputs to the initial decay of the -5V output



Case Dimensions Units: inches | millimeters

Case Style	A	B	C	D
8 XF	2.220 56.388	2.110 53.594	0.495 12.573	— —
	E	F	G	
	1.600 40.640	2.960 75.184	2.610 66.294	

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



GRADE LEVELS:

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

EU	Engineering Units	LE	45 KRAD, +125°C military/aerospace	R	100 KRAD, +85°C military/aerospace
L	45 KRAD, +85°C military/aerospace	S	100 KRAD, +85°C space	SE	100 KRAD, +125°C space
RE	100 KRAD, +125°C military/aerospace				



Modular Devices, Inc.
 Power Conversion for Space and Military/Aerospace

One Roned Road • Shirley, NY 11967 • E-mail sales@mdipower.com • Fax: 631.345.3106 • Tel 631.345.3100