

Major Specifications for – Procurement of Rad Hard components, fabrication and Screening of Rad Hard HMC DC-DC Converter Type-1D1(28V)

Specification for Type 1D1(28V)	
Specification	Value
Input Voltage Range	24V to 45V DC
No. of DC Output Voltages	1
Output Voltage	10.1 \pm 0.1 V
Output current	0.6 A(max), 0.5A (nom)
Line regulation	\pm 0.25%
Load Regulation	\pm 0.5%
Ripple	Max 50 mVpp at full load
Spike	100mVpp
Insulation @50V	>1000 M Ω
Efficiency at rated load	>60%
Over Current Limit	>110% Max Load
Substrate Details	No Of Layers: 2 Substrate:1 – 1" x 0.987" x 0.025" Substrate:2 – 0.17" x 0.358" x 0.025"
HMC Size including pins and flange	1.57" x 1.12" x 0.39"
Package material	Kovar
Component List	As per Annexure-1
Mechanical Drawing	As per Annexure-2

Annexure –1 Radhard HMC DC-DC Converter

Type-1D1(28V) Radhard 's' level Components List

Sl. No.	Component Type	Description	Value	Part Number	Make	Qty./HMC
1	LD20	Capacitor	10uF, 100V	LD201C106KBB6A	AVX	4
2	0402	Capacitor	47pF, 100V	M3253502E1B470FZTB	KEMET	1
3	0402	Capacitor	220pF, 50V	M3253502E1A221FZTB	KEMET	2
4	0603	Capacitor	270pF, 100V	M3253503E1B271FRTB	KEMET	1
5	0402	Capacitor	150pF, 100V	M3253502E1B151FZTB	KEMET	1
6	0603	Capacitor	3.3nF, 100V	300904102332KE	AVX	1
7	0603	Capacitor	10nF, 100V	300904102103KE	AVX	1
8	0603	Capacitor	15nF, 100V	300904102153KE	AVX	5
9	0603	Capacitor	100nF, 25V	300904102104KA	AVX	2
10	0805	Capacitor	1uF, 10V	M3253504E2X105KRTB	KEMET	1
11	CWR29_B	Capacitor	1uF, 25V	CWR29KC105KCBC	AVX	1
12	Diode	Diode Die	150V, 2.5A	JANKCF1N5806	MICROSEMI/ EQU	4
13	Diode	Diode Die	100V, 0.3A	JANKCD1N6642	MICROSEMI/ EQU	4
14	Zener	Diode Die	12V, 30mA	JANKCA1N759A/ JANKCB1N6326	MICROSEMI/ EQU	2
15	Transistor	Transistor Die	140V, 1A	JANKCA2N3700	SEMICOA/ EQU	2
16	Transistor	Transistor Die	60V, 0.6A	JANKCD2N2907A	SEMICOA/ EQU	1
17	MOSFET	MOSFET Die	200V, 18A	Chip L5462A(ES)	INFINEON	1
18	PWM	PWM IC Die	ISL78845	ISL78845A (5962R0724908V9A)	INTERSIL	1
19	LDO	LDO Die	Vin < 20V, Io < 1.5A	TPS7A4501 (5962R1222403V9A)	TI	1
20	Core	Magnetic Core	YW40601TC	YW40601TC	MAGNETICS	3
21	Core	Magnetic Core	0R40906EC	0R40906EC	MAGNETICS	2
22	Core	Magnetic Core	C055137-A2	C055137-A2	MAGNETICS	3
23	Substrate	HMC Substrate	Drilled Substrate		96% Alumina substrate (Al2O3), 25mil thickness	2
24	Package & lid	HMC Package & Lid	Gold plated Kovar 5-Pin & Stepped lid		Technotron/ EQU (Drawing number A12/18 & Rev:01) Hirel/ EQU (Drawing number A13/18 & Rev:01)	1 set
25	Cu Wire	Cu Wire	31 AWG Enamelled Coated (Polyimide)		Elektrisola/ EQU	-

Annexure-2

Type-1D1 (HDV2810SSB) & Type-1D1-70V (HDV7010SSB) Mechanical Diagram



