SE16P6F10B3.3MA

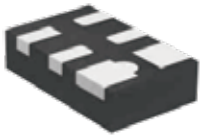
Electrostatic Discharge Protection Device

FEATURES

- 40Watts peak pulse power (tp = 8/20μs)
- Protects Two High Speed I/O Lines
- Low Clamping Voltage

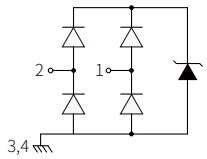
APPLICATIONS

- Digital Visual Interface
- USB Ports
- PCI Express
- Serial ATA
- Firewire Ports
- GaAs Photodetector Protection
- HBT Power Amp Protection
- Infiniband Transceiver Protection



DFN1610-6L

Marking



Schematic Symbol

IEC COMPATIBILITY

- IEC61000-4-2 (ESD) ±20kV (air), ±15kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

THERMAL CONSIDERATIONS

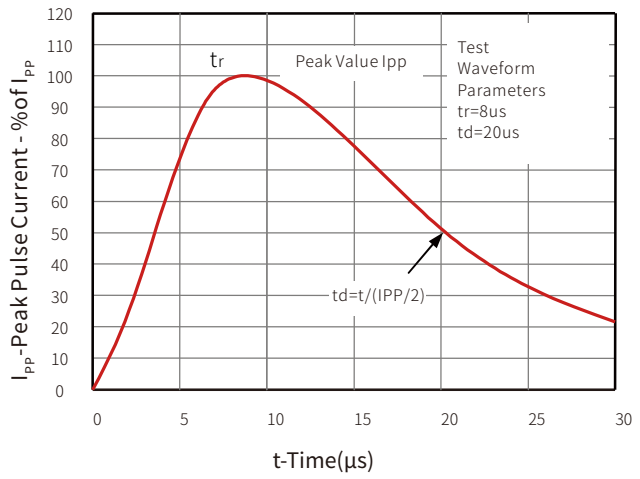
Symbol	Parameter	Value	Unit
P_{pp}	Peak Pulse Power (tp=8/20μs waveform)	40	Watts
T_J	Operating Temperature Range	-55 to +125	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

ELECTRICAL CHARACTERISTICS

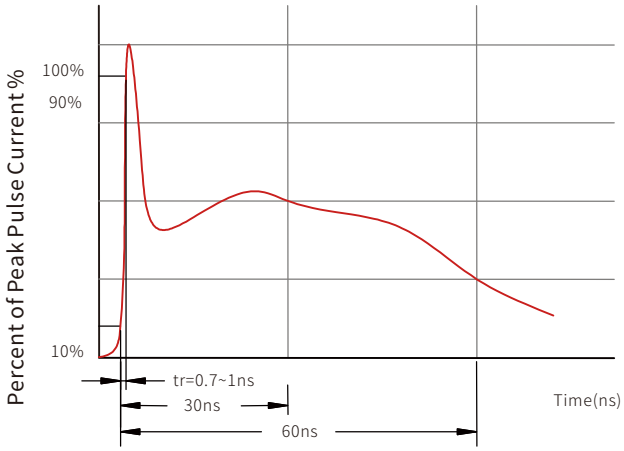
Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
V_{RWM}	Reverse Stand-off Voltage				3.3	V
V_{BR}	Reverse Breakdown Voltage	I_T=1mA	6.2			V
I_R	Reverse Leakage Current	V_{RWM}=3.3V			1	μA
V_C	Clamping Voltage	I_{PP}=4.5A,tp=8/20μs			9	V
I_{PP}	Peak Pulse Current	tp=8/20μs			4.5	A
C_J	Off State Junction Capacitance	V_R=0V, f=1MHz I/O-I/O		0.4		pF

CHARACTERISTIC CURVES

8/20μs Pulse Waveform

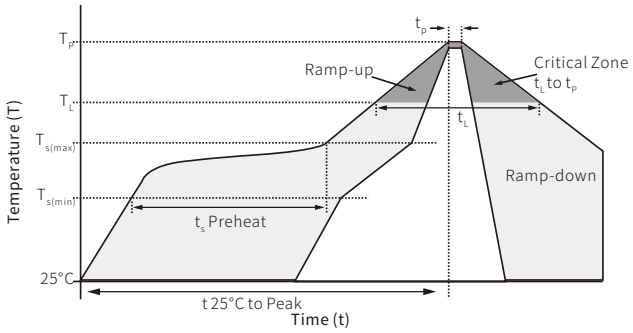


ESD Pulse Waveform (according to IEC 61000-4-2)

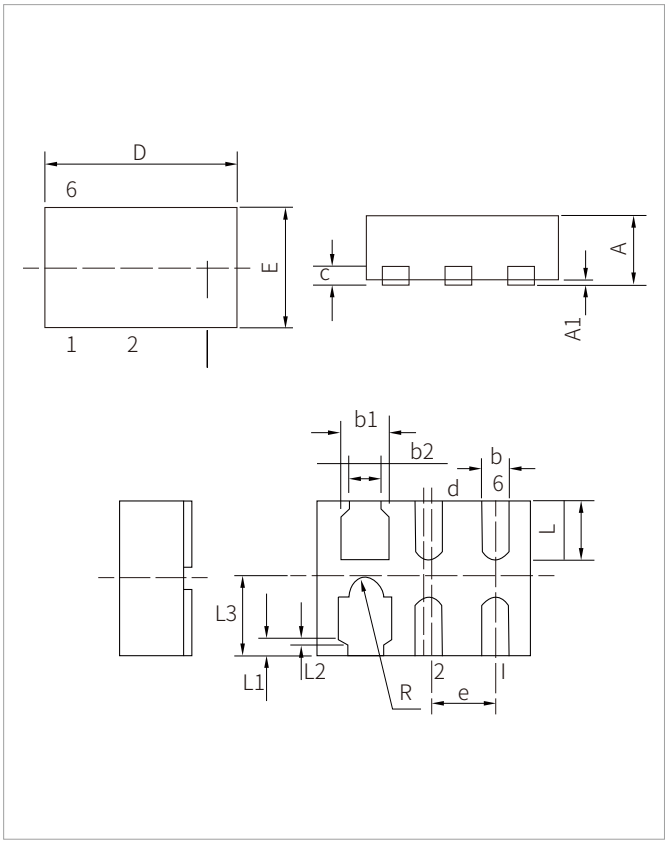


SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
	$T_{S(max)}$ to T_L - Ramp-up Rate	3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes max.
Do not exceed		260°C

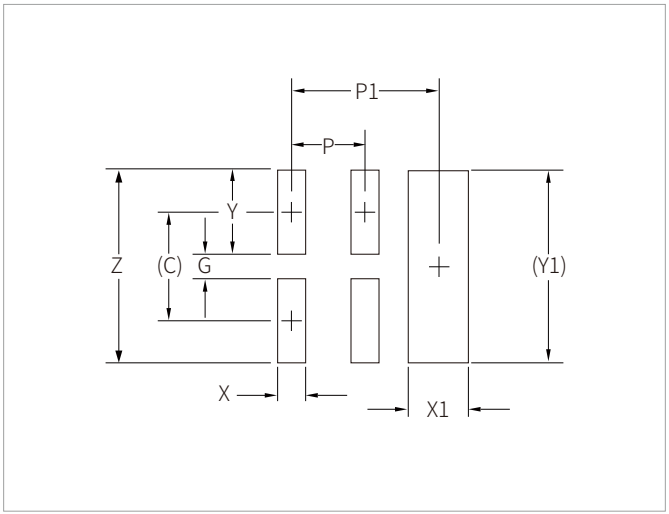


DFN1610-6L PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.40	0.60	0.016	0.024
A1	0	0.05	0	0.002
b	0.15	0.25	0.006	0.010
b1	0.35	0.45	0.014	0.018
b2	0.20	0.30	0.008	0.012
c	0.10	0.20	0.004	0.008
d	0.05TYP		0.002	
D	1.50	1.70	0.060	0.067
e	0.50BSC		0.020BSC	
E	0.90	1.10	0.035	0.043
L	0.30	0.45	0.012	0.018
L1	0.10REF		0.004REF	
L2	0.05REF		0.002REF	
L3	0.49REF		0.019REF	
R	0.08	0.18	0.003	0.007

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
C	0.875	0.034
G	0.20	0.008
P	0.50	0.020
P1	1.00	0.039
X	0.20	0.008
X1	0.40	0.016
Y	0.675	0.027
Y1	1.55	0.061
Z	1.55	0.061

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SE16P6F10B3.3MA	DFN1610-6L	3000PCS	7”

Headquarters
No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline
400-021-5756

Web
Https://www.semiware.com

Sales Center
Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service
Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support
Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions
Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

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To find your local partner within Semiware' s global website: www.semiware.com