TPSE16F200U7.0A

Electrostatic Discharge Protection Device

FEATURES

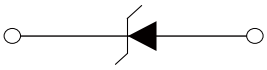
- 1600W Peak Pulse Power per Line (tp=8/20μs)
- Protects one Unidirectional I/O line
- Working voltages :7 V
- Low Clamping Voltage
- Meet AEC-Q101 Requirements

APPLICATIONS

- Automotive Applications
- Industrial Equipment
- Integrated Magnetics / RJ-45 Connectors
- Industrial controls
- Cellular handsets & accessories
- Portable instrumentation
- Color LCD Protection
- Notebooks & handhelds

DFN1610

Marking



Schematic Symbol

IEC COMPATIBILITY

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

APPROVALS

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

THERMAL CONSIDERATIONS

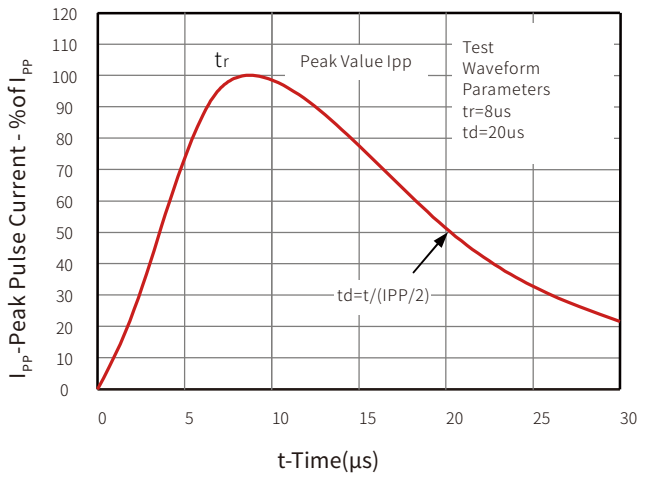
Symbol	Parameter	Value	Unit
P_{pp}	Peak Pulse Power (tp=8/20μs waveform)	1600	Watts
T_J	Operating Temperature Range	-55 to +125	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

ELECTRICAL CHARACTERISTICS

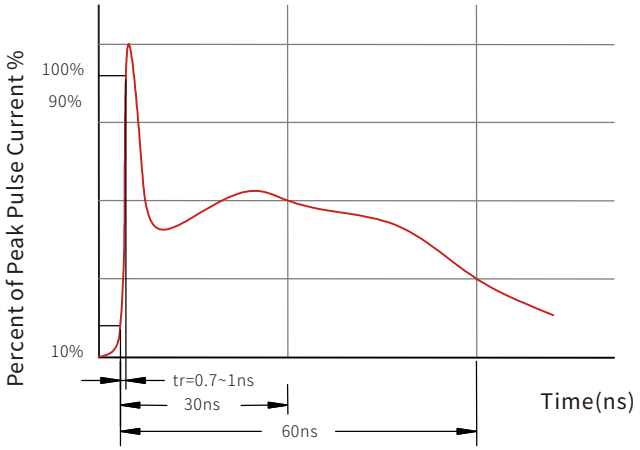
Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
V_{RWM}	Reverse Stand-off Voltage				7	V
V_{BR}	Reverse Breakdown Voltage	I_T=1mA	8.4			V
I_R	Reverse Leakage Current	V_{RWM}=7V			1	μA
V_C	Clamping Voltage	I_{PP}=1A,tp=8/20μs			10.5	V
V_C	Clamping Voltage	I_{PP}=50A,tp=8/20μs			17.5	V
V_C	Clamping Voltage	I_{PP}=80A,tp=8/20μs			20	V
I_{PP}	Peak Pulse Current	tp=8/20μs			80	A
C_J	Off State Junction Capacitance	V_R=0V, f=1MHz		740		pF

CHARACTERISTIC CURVES

8/20μs Pulse Waveform

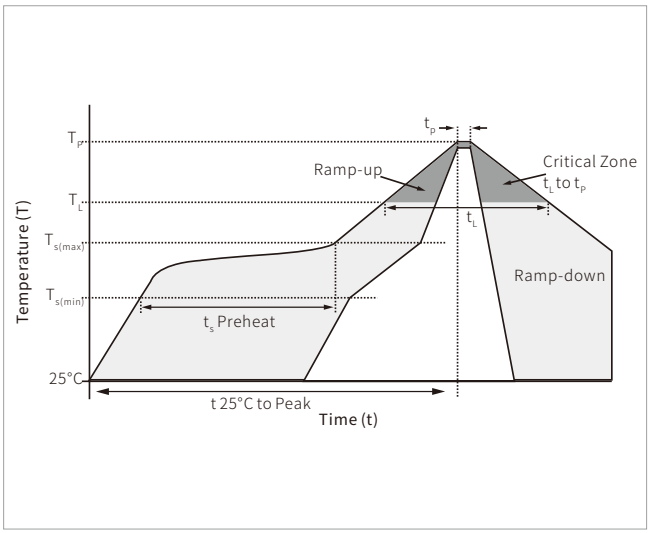


ESD Pulse Waveform (according to IEC 61000-4-2)

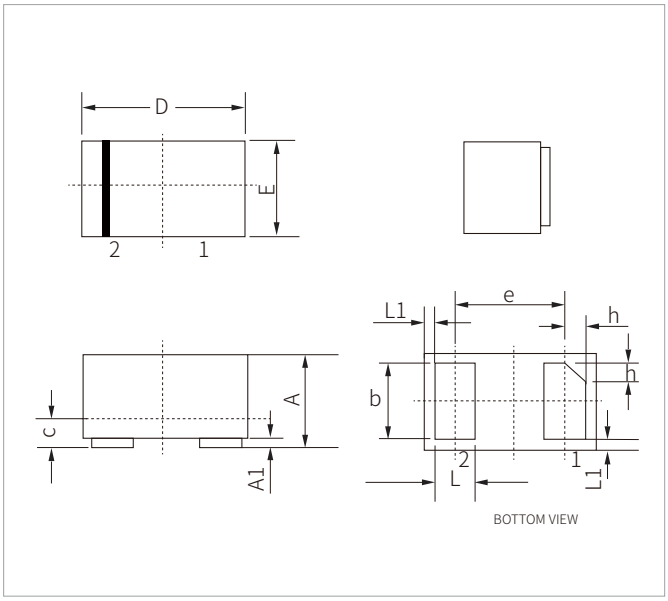


SOLDERING PARAMETERS

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

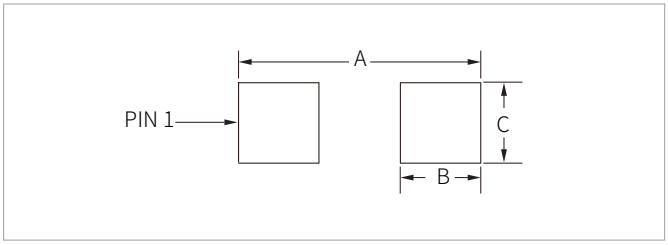


DFN1610 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.40	0.60	0.016	0.024
A1	0	0.05	0	0.002
b	0.75	0.85	0.030	0.033
c	0.10	0.20	0.004	0.008
D	1.55	1.65	0.061	0.065
e	1.10TYP		0.043TYP	
E	0.95	1.05	0.037	0.041
L	0.35	0.45	0.014	0.018
L1	0.05REF		0.002REF	
h	0.15	0.25	0.006	0.010

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
A	1.85	0.073
B	0.625	0.025
C	1.00	0.039

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
TPSE16F200U7.0A	DFN1610	3000PCS	7”

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