

FEATURES

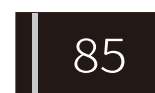
- | 1300W Peak Pulse Power per Line (tp=8/20μs)
- | Protect one I/O line or one power line
- | Fast turn-on and low clamping voltage
- | Solid-state silicon-avalanche and active circuit triggering technology

APPLICATIONS

- | Mini LED / Micro LED
- | Power line protection
- | Low speed data line protection
- | Panel modules
- | Portable devices
- | Peripheral products



DFN1610



Marking

IEC COMPATIBILITY

- | IEC61000-4-2 (ESD) ±20kV (air), ±20kV (contact)
- | IEC61000-4-4 (EFT) 60A (5/50ns)
- | IEC 61000-4-5 (Lightning) 10A (8/20μs)

APPROVALS

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



Schematic Symbol

THERMAL CONSIDERATIONS

Symbol	Parameter	Value	Unit
P_{pp}	Peak Pulse Power (tp=8/20μs waveform)	1300	Watts
T_J	Operating Temperature Range	-55 to +150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

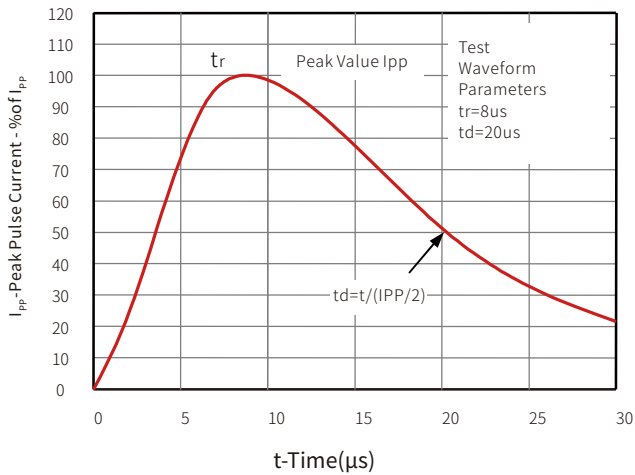
ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
V_{RWM}	Reverse Stand-off Voltage				85	V
V_{BR}	Reverse Breakdown Voltage	$I_T=1mA$	95			V
I_R	Reverse Leakage Current	$V_{RWM}=85V$			0.5	μA
V_F	Forward Voltage	$I_F=15mA$	0.5		1	V
V_C	Clamping Voltage	$I_{pp}=5A, tp=8/20\mu s$		115		V
V_C	Clamping Voltage	$I_{pp}=10A, tp=8/20\mu s$		130		V
V_{CL-ESD}	ESD Clamping Voltage (Note 1)	IEC 61000-4-2 +8kV($I_{TLF}=16A$), T=25°C, contact mode, pin-1 to pin-2.		117		V
$R_{dynamic}$	ESD Dynamic Turn-on Resistance	IEC 61000-4-2 0~+8kV, T=25°C, contact mode, pin-1 to pin-2.		0.8		Ω
I_{PP}	Peak Pulse Current	tp=8/20μs			10	A
C_J	Off State Junction Capacitance	$V_R=0V, f=1MHz$		100		pF

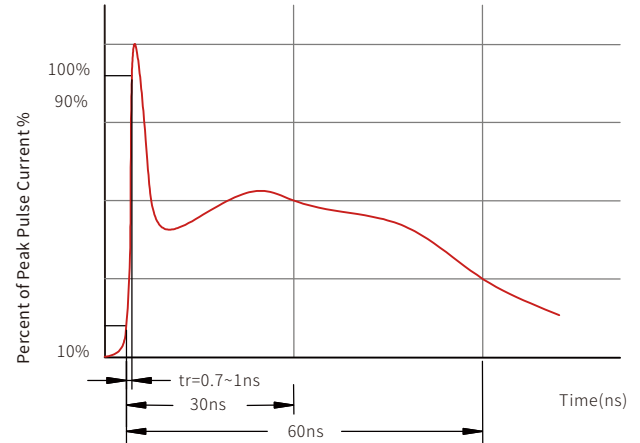
Note 1: ESD Clamping Voltage was measured by Transmission Line Pulsing (TLP) System.
 TLP conditions: $Z_0=50\Omega$, tp= 100ns, tr= 1ns.

CHARACTERISTIC CURVES

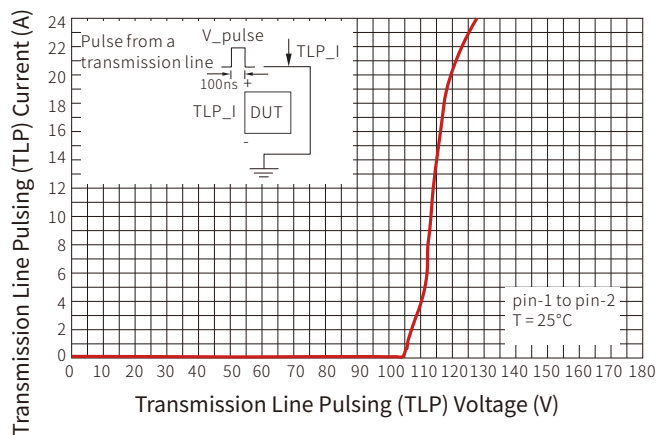
8/20 μ s Pulse Waveform



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

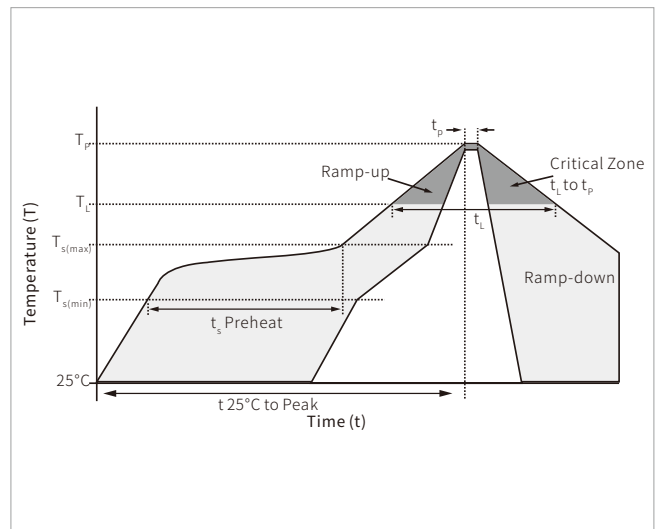


Transmission Line Pulsing (TLP) Measurement

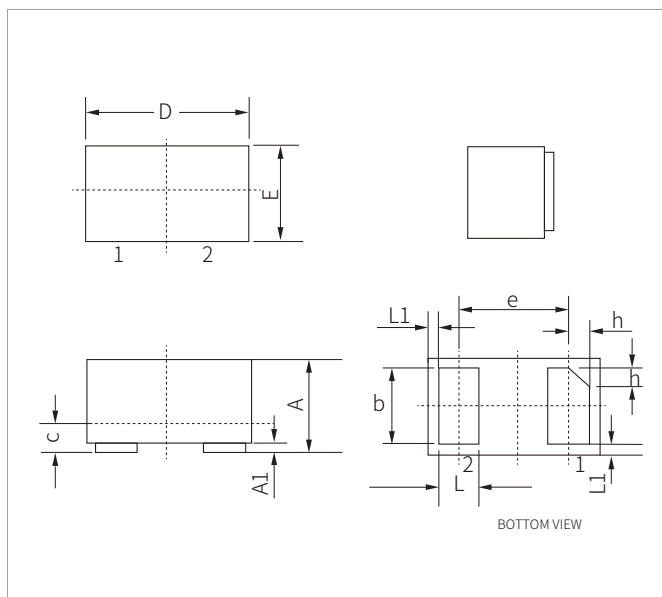


SOLDERING PARAMETERS

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

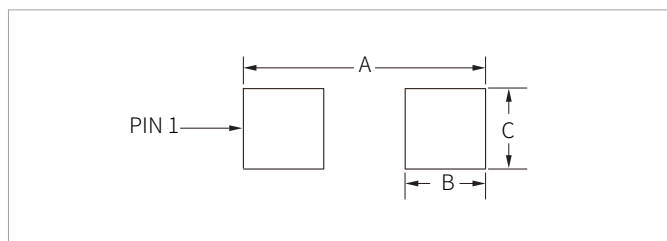


DFN1610 PACKAGE INFORMATION



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
SE16F130U85A	DFN1610	10000PCS	7"

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