

FEATURES

- | 45 Watts Peak Pulse Power per Line (tp=8/20μs)
- | Protects one data or power line
- | Working voltages : 5 V
- | Low leakage current
- | Low clamping voltage
- | Low capacitance

APPLICATIONS

- | USB3.0, HDMI2.0, Thunderbolt
- | Notebooks, Desktops, and Servers
- | Portable Instrumentation



DFN0603



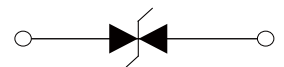
Marking

IEC COMPATIBILITY

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

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)	45	Watts
T_J	Operating Temperature Range	-55 to +125	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

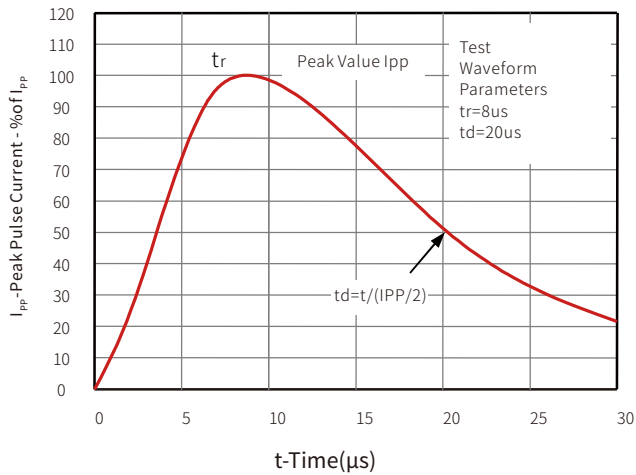
ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
V_{RWM}	Reverse Stand-off Voltage				5	V
V_{BR}	Reverse Breakdown Voltage	$I_T=1mA$	6			V
V_H	Holding Voltage	$I_T=I_H$		2.1		V
I_H	Holding Current			6		mA
I_R	Reverse Leakage Current	$V_{RWM}=5V, T=25^{\circ}C$			100	nA
V_T	Trigger Voltage		8			V
V_C	Clamping Voltage	$I_{PP}=3A, tp=8/20\mu s$		3.5		V
V_C	Clamping Voltage	$I_{PP}=9A, tp=8/20\mu s$		5		V
V_C	Clamping Voltage	$I_{PP}=8A, tp=TLP(Notes1)$		3.4		V
V_C	Clamping Voltage	$I_{PP}=16A, tp=TLP(Notes1)$		4		V
I_{PP}	Peak Pulse Current	$tp=8/20\mu s$			9	A
C_J	Off State Junction Capacitance	$V_R=0V, f=1MHz$		0.5		pF

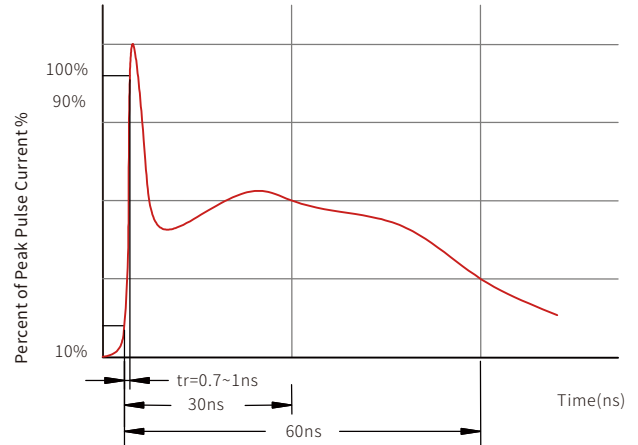
Note1: Non-repetitive current pulse, Transmission Line Pulse (TLP) tr=0.2ns, tp = 100 ns; square pulse

CHARACTERISTIC CURVES

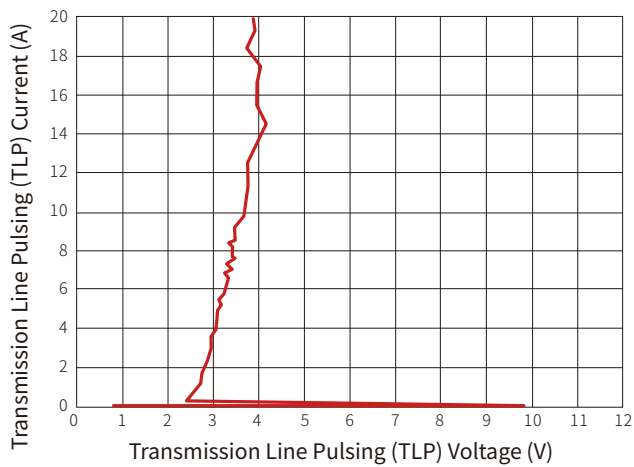
8/20 μ s Pulse Waveform



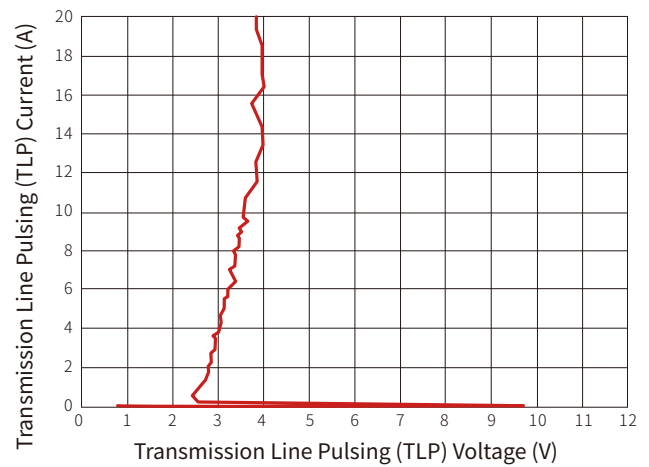
ESD Pulse Waveform (according to IEC 61000-4-2)



Positive TLP Curve

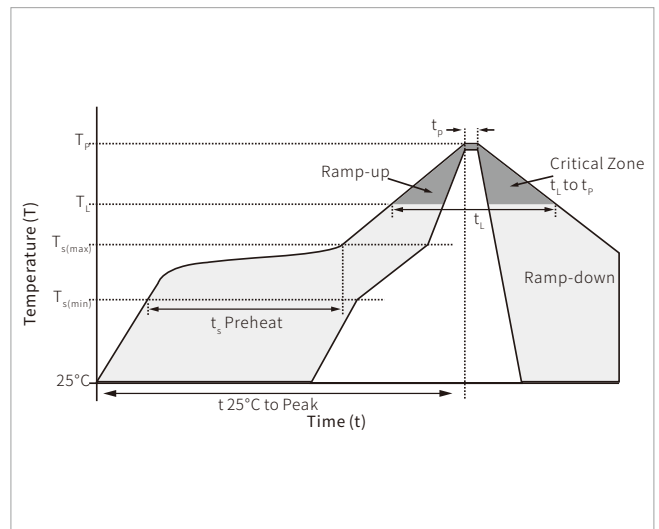


Negative TLP Curve

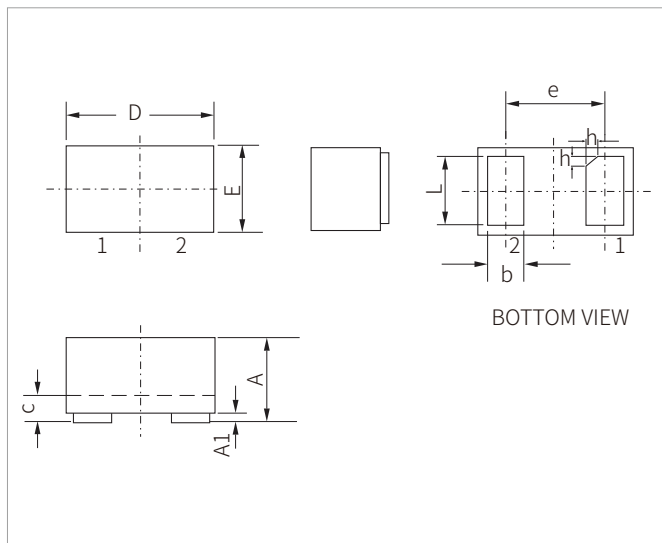


SOLDERING PARAMETERS

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

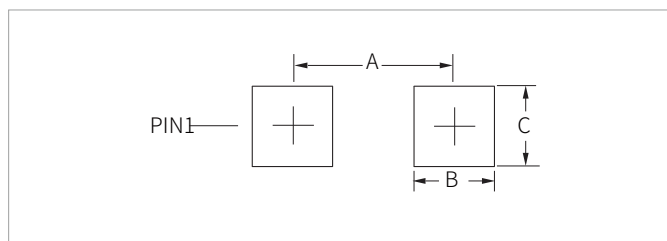


DFN0603 PACKAGE INFORMATION



Ref.	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.28	0.30	0.36	0.011	0.012	0.014
A1	0	0	0.05	0	0	0.002
b	0.13	0.18	0.24	0.005	0.007	0.009
c	0.05	-	0.15	0.002	-	0.006
D	0.55	0.60	0.70	0.022	0.024	0.028
e	0.35BSC			0.014BSC		
E	0.25	0.30	0.35	0.010	0.012	0.014
L	0.20	0.25	0.30	0.008	0.010	0.012
h	0	-	0.10	0	-	0.004

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
A	0.38	0.015
B	0.23	0.009
C	0.30	0.012

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SE06F10B5.0MA-SP	DFN0603	10000PCS	7"

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