

FEATURES

- | 40Watts peak pulse power (tp = 8/20μs)
- | Bidirectional configurations
- | Solid-state silicon-avalanche technology
- | Working voltages : 3.3 V
- | Low leakage current: 5nA typ

APPLICATIONS

- | USB 3.0 and USB3.1
- | Ultra-high-speed data lines
- | Very sensitive interface lines
- | Notebooks, Desktops, and Servers
- | Portable Instrumentation



DFN0603



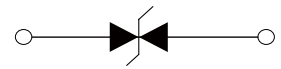
Marking

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



Schematic Symbol

THERMAL CONSIDERATIONS

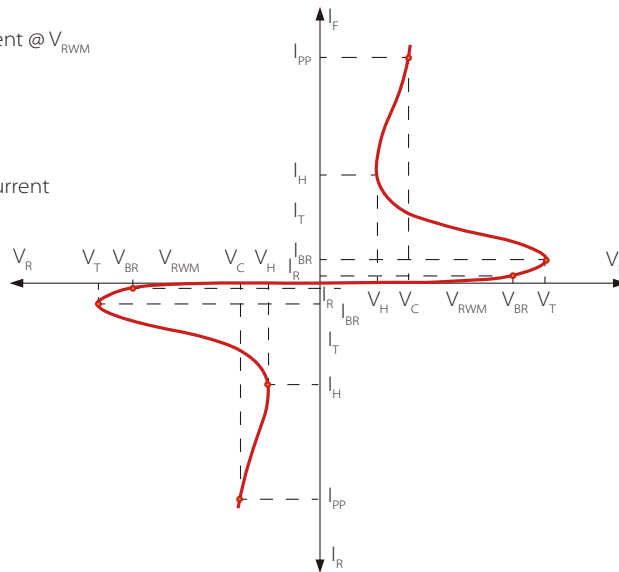
Symbol	Parameter	Value	Unit
P_{PP}	Peak Pulse Power (tp=8/20μs waveform)	40	Watts
T_J	Operating Temperature Range	-55 to +125	°C
T_{STG}	Storage Temperature Range	-55 to +125	°C

ELECTRICAL CHARACTERISTICS

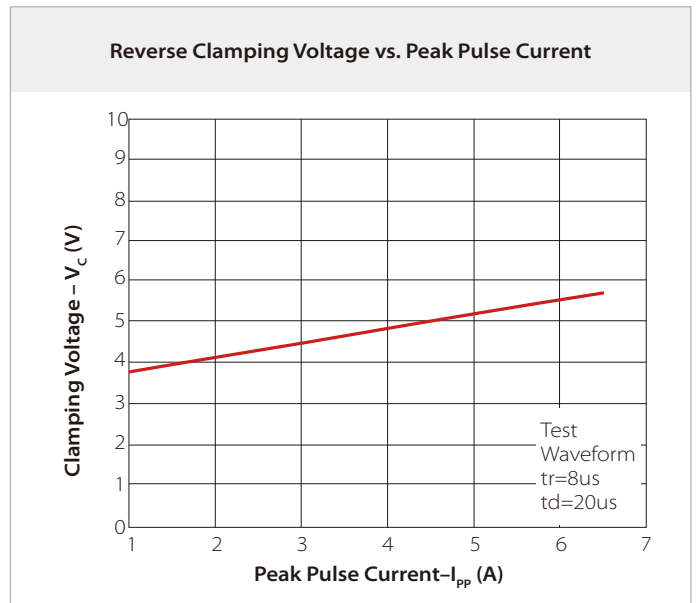
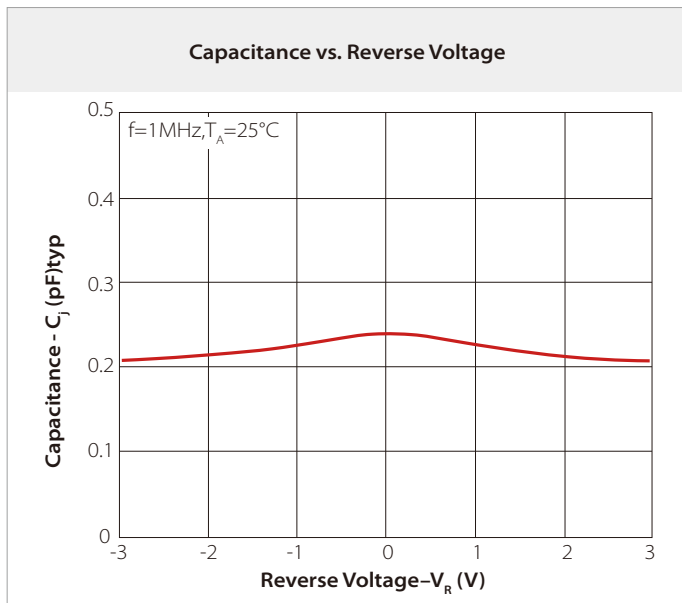
Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
V_{RWM}	Reverse Stand-off Voltage				3.3	V
V_{BR}	Reverse Breakdown Voltage	$V_T=1\text{mA}$	4.0	7.8		V
V_H	Holding Voltage	$I_H=50\text{mA}$	2.0		3.3	V
I_R	Reverse Leakage Current	$V_{RWM}=3.3\text{V}, T=25^\circ\text{C}$		5	200	nA
V_C	Clamping Voltage	$I_{pp}=6\text{A}, t_p=8/20\mu\text{s}$		5.5	6.5	V
V_C	ESD Clamping Voltage	$I_{TLP}=4\text{A}$ $t_p=0.2/100\text{ns}$		5.8		V
V_C	ESD Clamping Voltage	$I_{TLP}=16\text{A}$ $t_p=0.2/100\text{ns}$		9.4	11.8	V
I_{pp}	Peak Pulse Current	$t_p=8/20\mu\text{s}$			6	A
R_{dyn}	dynamic resistance	$TLP=0.2/100\text{ns}$		0.3	0.5	Ω
C_j	Off State Junction Capacitance	$V_R=0\text{V}, f=1\text{MHz}$		0.22	0.32	pF

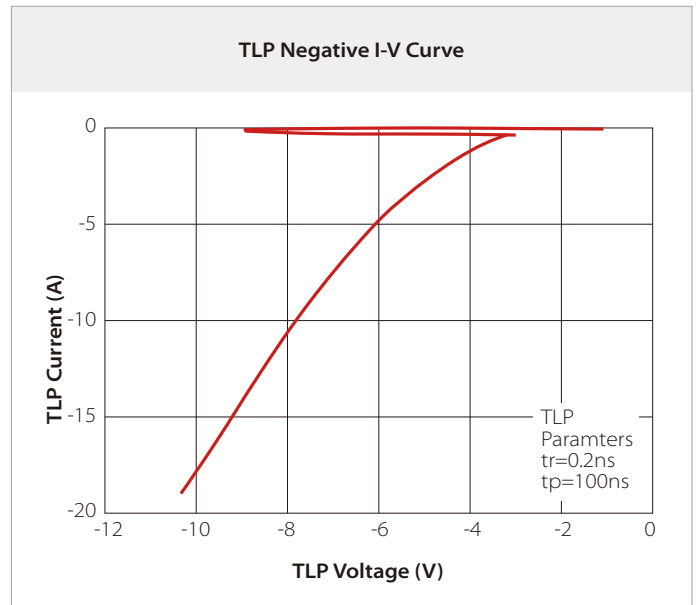
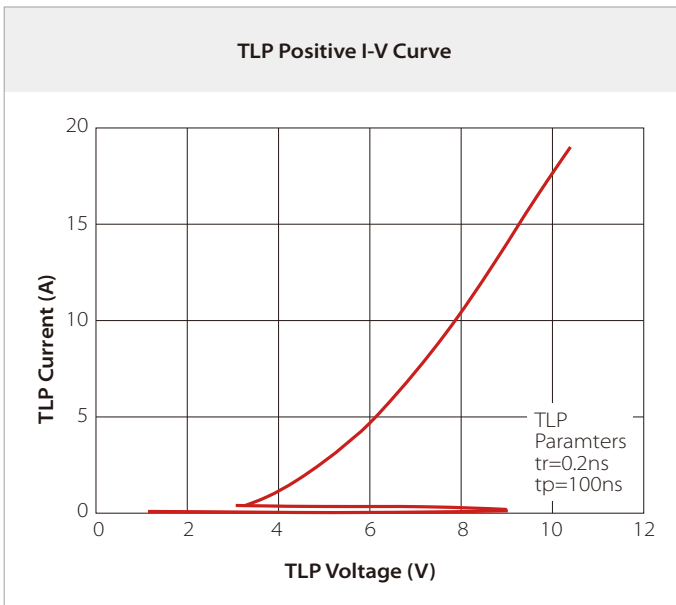
ELECTRICAL PARAMETERS (T_A = 25°C)

- V_{RWM} Reverse Working Voltage Max.
- I_R Maximum Reverse Leakage Current @ V_{RWM}
- V_T Trigger Voltage
- V_H Holding Voltage
- I_H Holding Current
- V_{BR} Reverse Breakdown Voltage
- I_{pp} Maximum Reverse Peak Pulse Current
- V_C Clamping Voltage @ I_{pp}



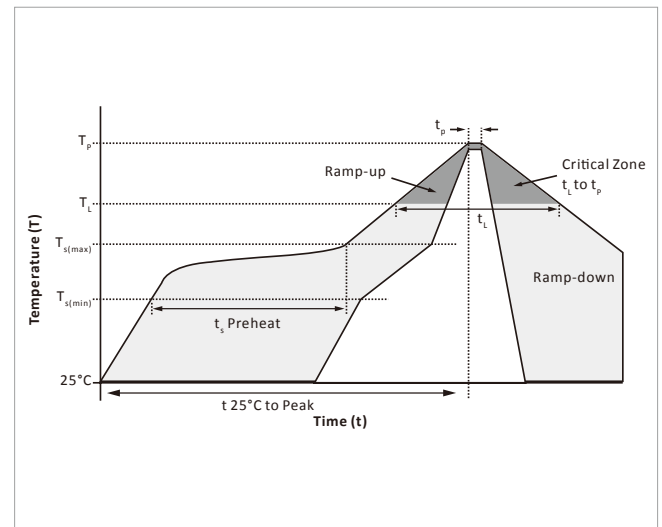
CHARACTERISTIC CURVES



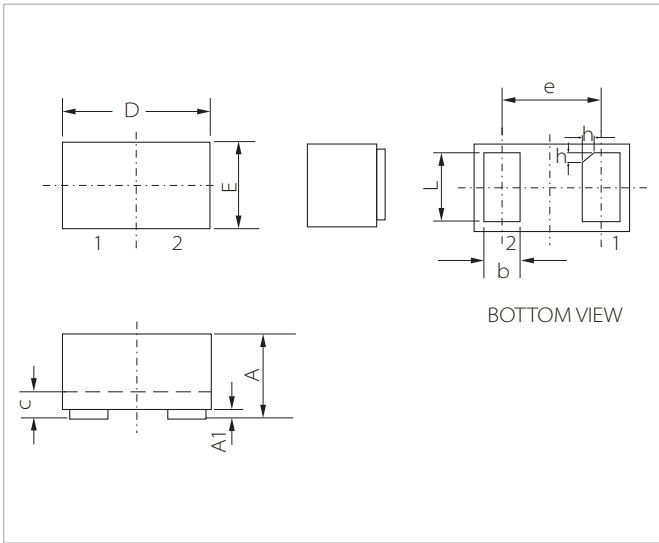


SOLDERING PARAMETERS

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

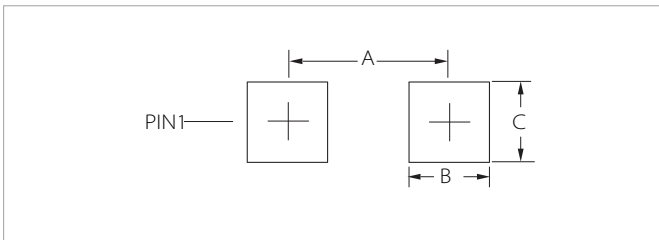


DFN0603 PACKAGE INFORMATION



Ref.	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.28	0.30	0.34	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	0.65	0.022	0.024	0.026
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
SE06F10B3.3MA-SP	DFN0603	15000PCS	7"

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