

FEATURES

- | 72Watts peak pulse power ($t_p = 8/20\mu s$)
- | Bidirectional configurations
- | Solid-state silicon-avalanche technology
- | Working voltages : 5.0 V
- | Low leakage current
- | Low capacitance: $C_j = 0.3pF$ typ

APPLICATIONS

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



DFN1006



Marking

IEC COMPATIBILITY

- | IEC61000-4-2 (ESD) $\pm 25kV$ (air), $\pm 25kV$ (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

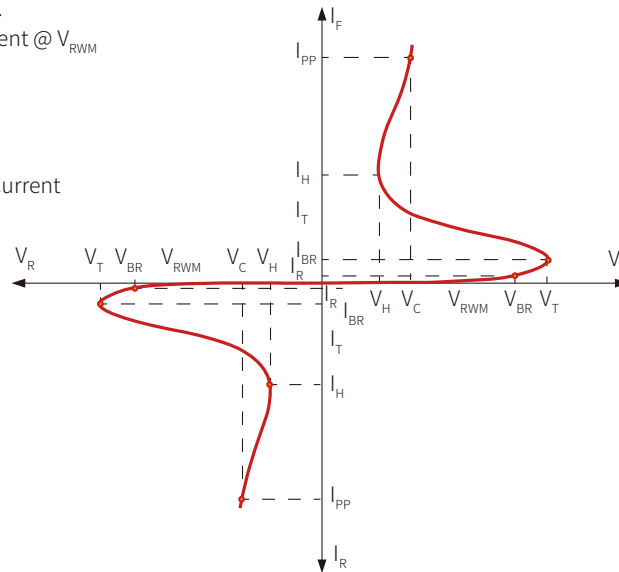
Symbol	Parameter	Value	Unit
P_{pp}	Peak Pulse Power ($t_p=8/20\mu s$ waveform)	72	Watts
T_J	Operating Temperature Range	-55 to +125	$^{\circ}C$
T_{STG}	Storage Temperature Range	-55 to +125	$^{\circ}C$

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	7		V
V_H	Holding Voltage		2		3.5	V
I_R	Reverse Leakage Current	$V_{RWM} = 5.0V$			0.5	μA
V_C	Clamping Voltage	$I_{PP} = 9A, t_p = 8/20\mu s$		7	8	V
V_{CL}	ESD Clamping Voltage	$I_{TLP} = 4A$ $t_p = 0.2/100ns$		3.7		V
V_{CL}	ESD Clamping Voltage	$I_{TLP} = 16A$ $t_p = 0.2/100ns$		8		V
I_{PP}	Peak Pulse Current	$t_p = 8/20\mu s$			9	A
R_{dyn}	ESD Dynamic Resistance	$T_{LP} = 0.2/100ns$		0.35		Ω
C_J	Off State Junction Capacitance	$V_R = 0V, f = 1MHz$		0.30	0.40	pF

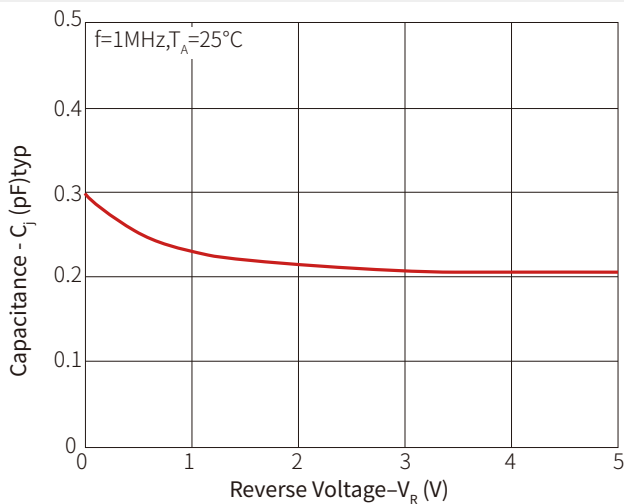
ELECTRICAL PARAMETERS ($T_A = 25^\circ\text{C}$)

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}

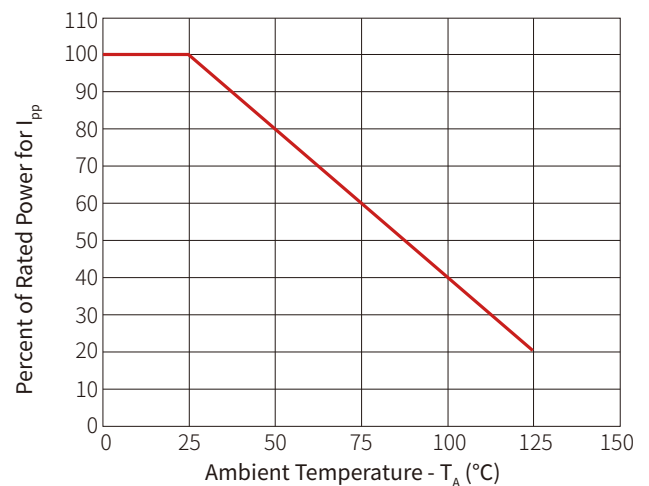


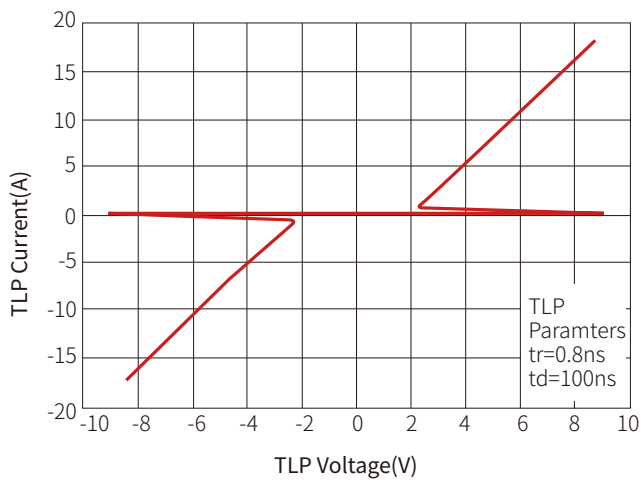
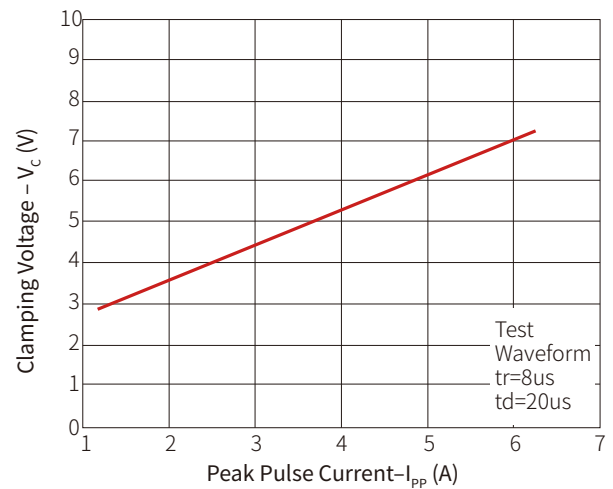
CHARACTERISTIC CURVES

Capacitance vs. Reverse Voltage



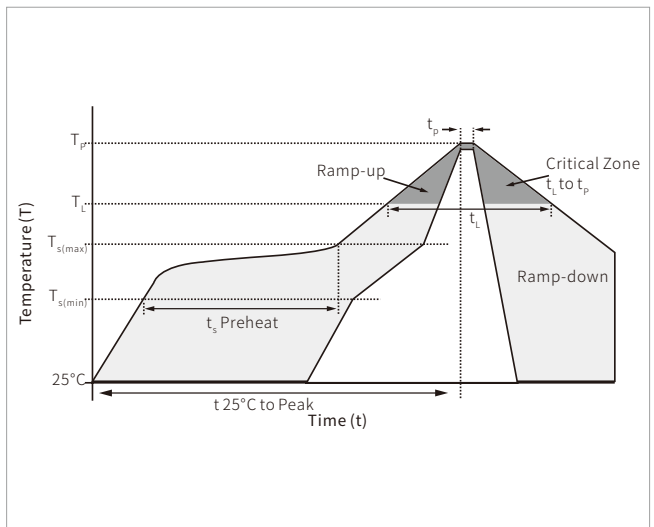
Power Derating Curve



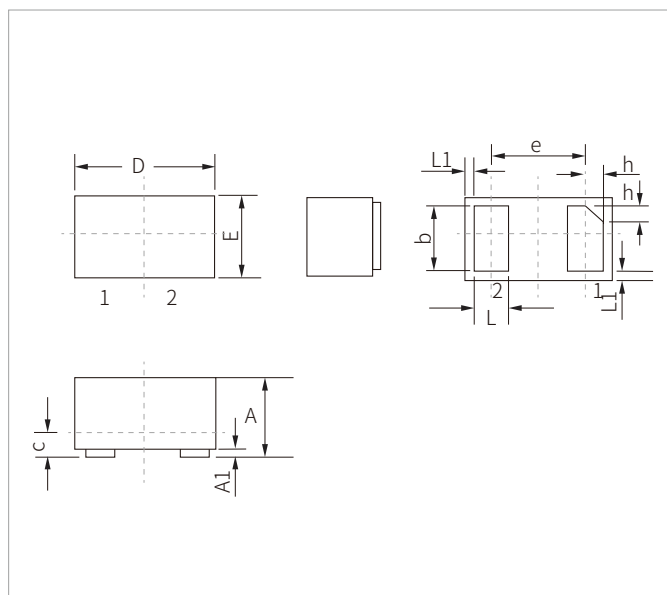
TLP I-V Curve

Reverse Clamping Voltage vs. Peak Pulse Current


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

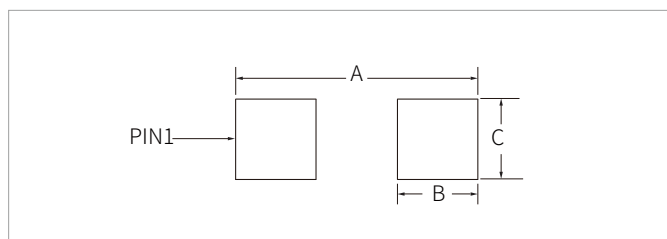


DFN1006 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.40	0.60	0.016	0.024
A1	0	0.05	0	0.002
b	0.40	0.55	0.016	0.022
c	0.12	0.18	0.005	0.007
D	0.90	1.10	0.035	0.043
e	0.65BSC		0.026BSC	
E	0.55	0.75	0.022	0.030
L	0.20	0.35	0.008	0.014
L1	0.05REF		0.002REF	
h	0.07	0.17	0.003	0.007

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
A	1.20	0.047
B	0.47	0.019
C	0.60	0.024

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SE10F10B5.0MA-SP	DFN1006	10000PCS	7"

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