

## FEATURES

- | 72Watts peak pulse power (tp = 8/20μs)
- | Bidirectional configurations
- | Solid-state silicon-avalanche technology
- | Working voltages : 5.0V
- | Low leakage current
- | Low capacitance: Cj = 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



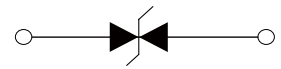
Marking

## IEC COMPATIBILITY

- | IEC61000-4-2 (ESD) ±25kV (air), ±25kV (contact)
- | IEC61000-4-4 (EFT) 40A (5/50ns)

## APPROVALS

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



Schematic Symbol

## THERMAL CONSIDERATIONS

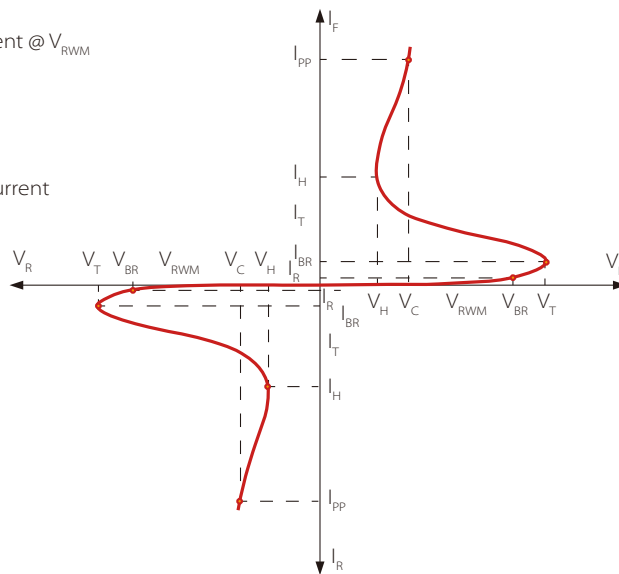
Symbol	Parameter	Value	Unit
$P_{pp}$	Peak Pulse Power (tp=8/20μs waveform)	72	Watts
$T_J$	Operating Temperature Range	-55 to +125	°C
$T_{STG}$	Storage Temperature Range	-55 to +125	°C

## ELECTRICAL CHARACTERISTICS

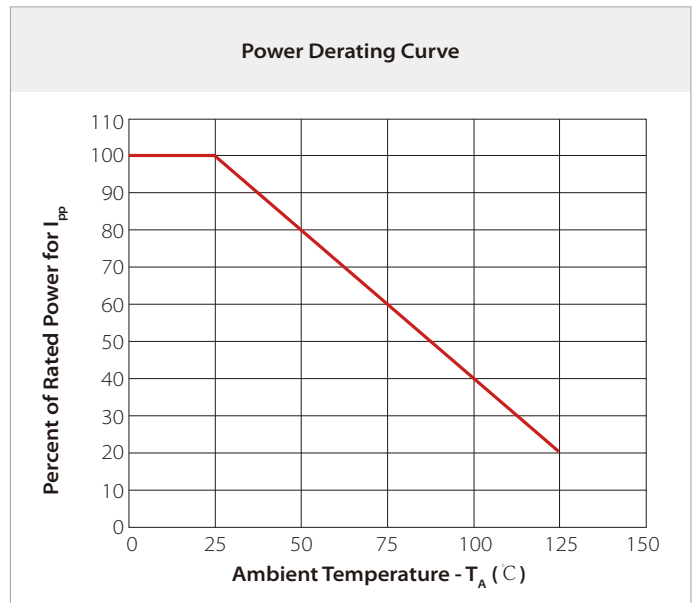
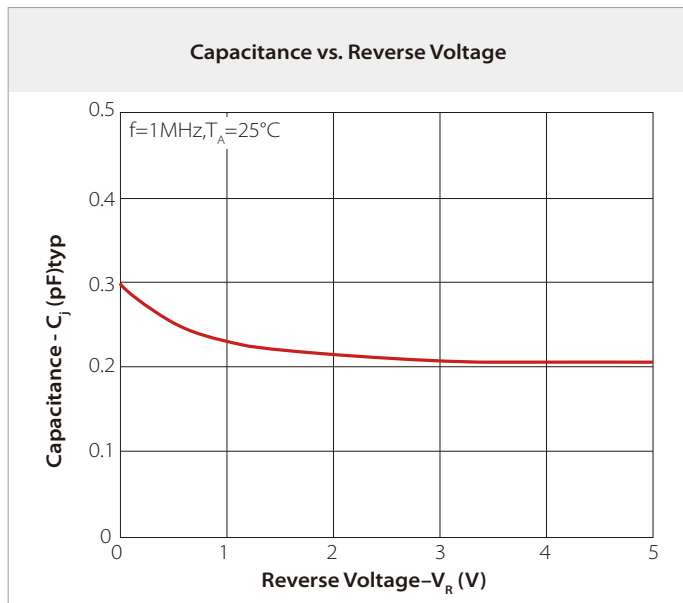
Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
$V_{RWM}$	Reverse Stand-off Voltage				5	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T=1\text{mA}$	6	7		V
$V_H$	Holding Voltage		2		3.5	V
$I_R$	Reverse Leakage Current	$V_{RWM}=5.0\text{V}$			0.5	uA
$V_C$	Clamping Voltage	$I_{pp}=9\text{A}, tp=8/20\mu\text{s}$		7	8	V
$V_{CL}$	ESD Clamping Voltage	$I_{TLP}=4\text{A}$ $tp=0.2/100\text{ns}$		3.7		V
$V_{CL}$	ESD Clamping Voltage	$I_{TLP}=16\text{A}$ $tp=0.2/100\text{ns}$		8		V
$I_{pp}$	Peak Pulse Current	$tp=8/20\mu\text{s}$			9	A
$R_{dyn}$	ESD Dynamic Resistance	$T_{LP}=0.2/100\text{ns}$		0.35		Ω
$C_J$	Off State Junction Capacitance	$V_R=0\text{V}, f=1\text{MHz}$		0.30	0.40	pF

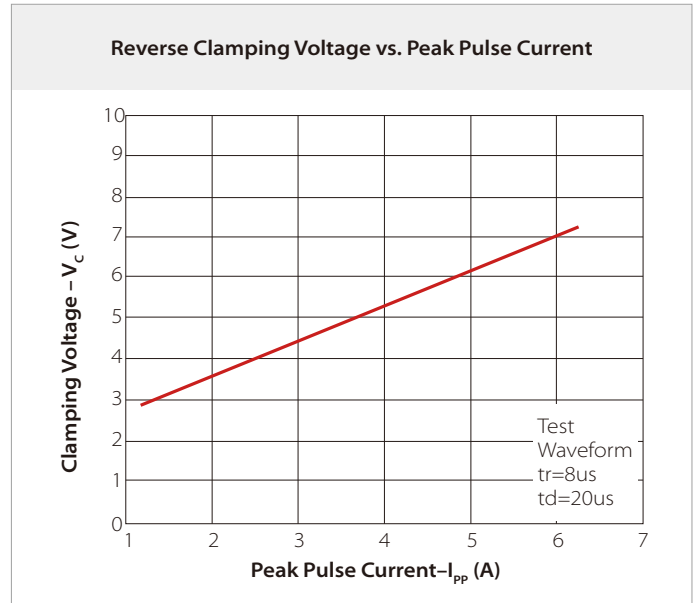
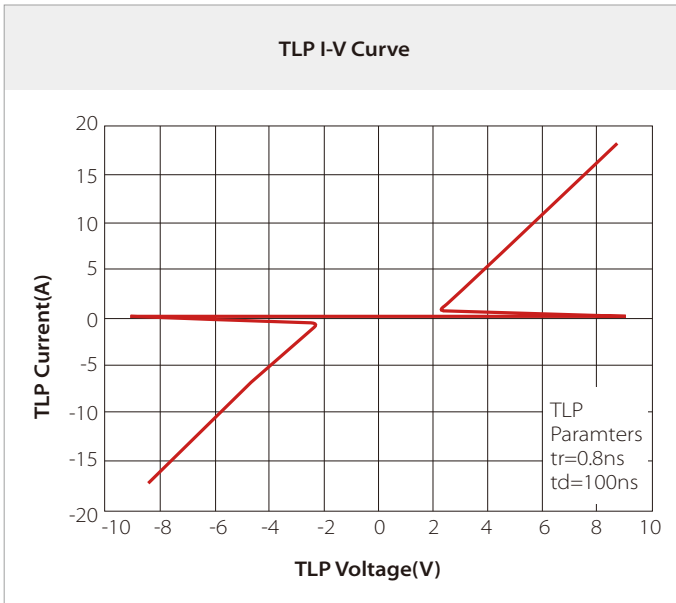
## ELECTRICAL PARAMETERS (T<sub>A</sub> = 25°C)

- V<sub>RWM</sub> ..... Reverse Working Voltage Max.
- I<sub>R</sub> ..... Maximum Reverse Leakage Current @ V<sub>RWM</sub>
- V<sub>T</sub> ..... Trigger Voltage
- V<sub>H</sub> ..... Holding Voltage
- I<sub>H</sub> ..... Holding Current
- V<sub>BR</sub> ..... Reverse Breakdown Voltage
- I<sub>pp</sub> ..... Maximum Reverse Peak Pulse Current
- V<sub>C</sub> ..... Clamping Voltage @ I<sub>pp</sub>



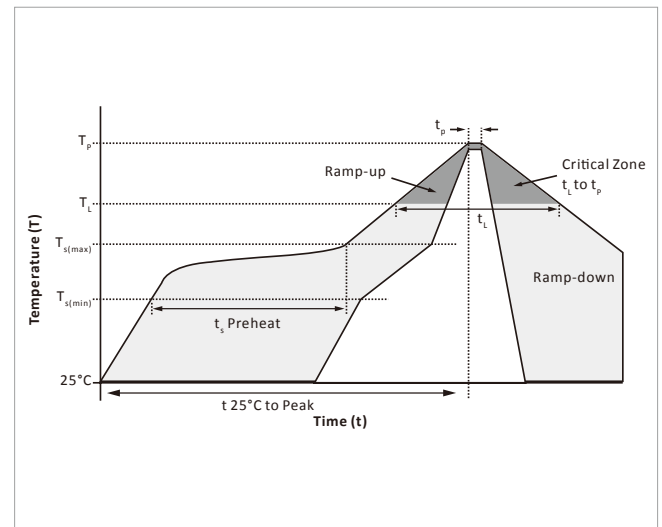
## CHARACTERISTIC CURVES



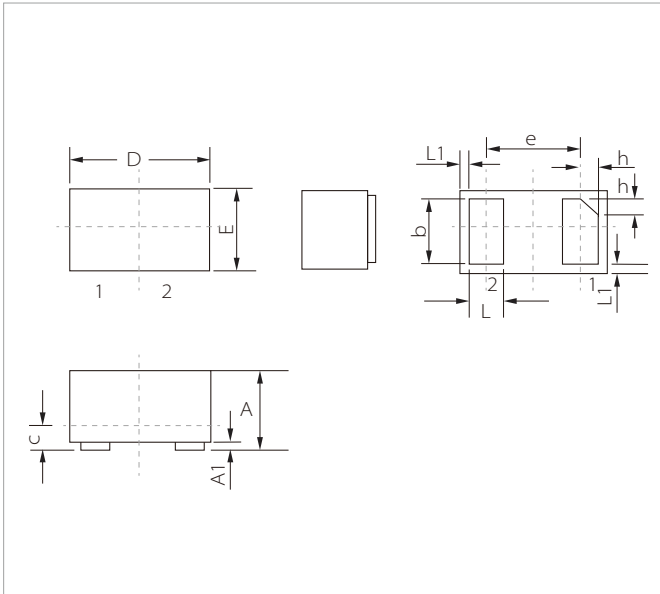


## SOLDERING PARAMETERS

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) ( $t_p$ )	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

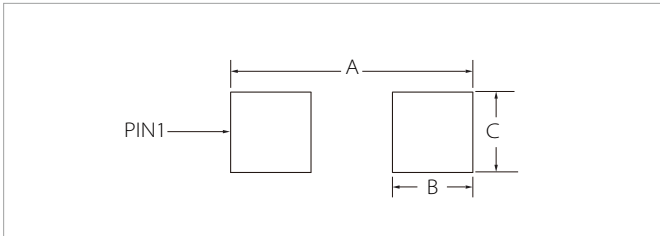


## DFN1006 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.35	0.50	0.014	0.020
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	0.95	1.05	0.037	0.041
e	0.65BSC		0.026BSC	
E	0.55	0.70	0.022	0.027
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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