

FEATURES

- | 63W Peak Pulse Power per Line (tp=8/20μs)
- | Protects one data or power line
- | Fast turn-on and low clamping voltage
- | Response Time is Typically < 1 ns
- | Working voltages : 24 V
- | Solid-state silicon-avalanche and active circuit triggering technology
- | Meet MSL level 1
- | Meet AEC-Q101 Requirements

APPLICATIONS

- | USB2.0 and USB3.0
- | HDMI1.3 and HDMI1.4
- | SATA and eSATA
- | IEEE 1394, DVI, PCI Express
- | Notebooks, Desktops, and Servers
- | Portable Instrumentation



DFN1006



Marking



Schematic Symbol

IEC COMPATIBILITY

- | IEC61000-4-2 (ESD) ±15kV (air), ±15kV (contact)
- | IEC61000-4-4 (EFT) 40A (5/50ns)

APPROVALS

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

THERMAL CONSIDERATIONS

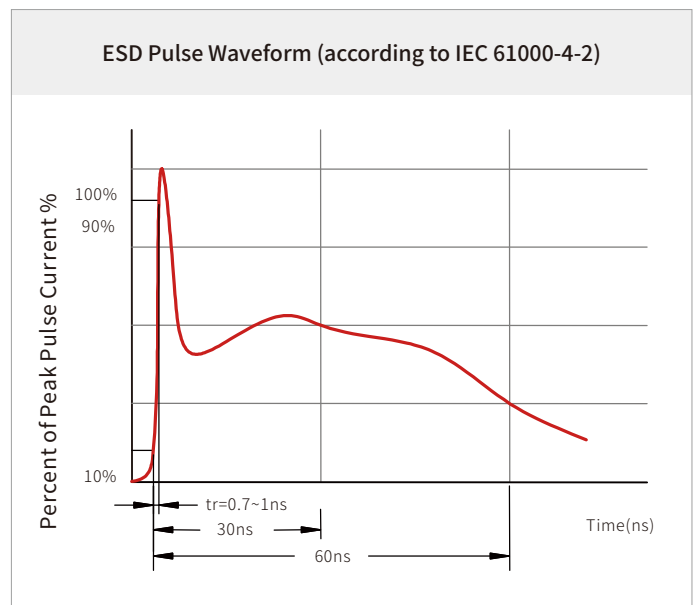
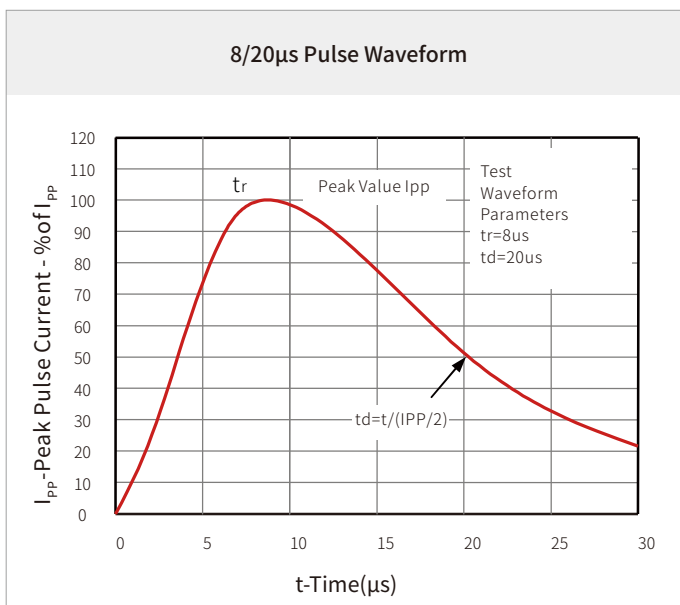
Symbol	Parameter	Value	Unit
P _{pp}	Peak Pulse Power (tp=8/20μs waveform)	63	Watts
T _J	Operating Temperature Range	-55 to +125	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C

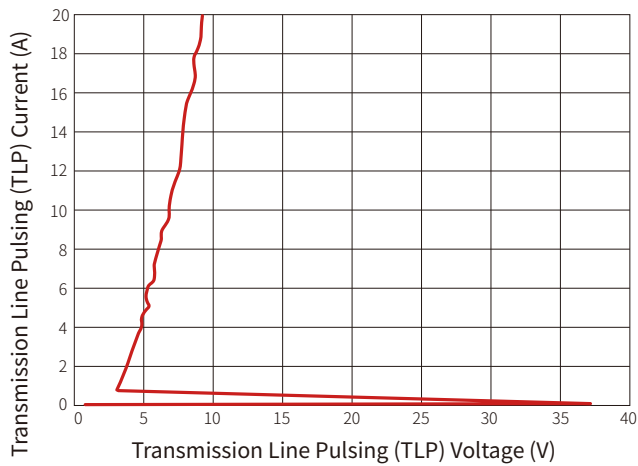
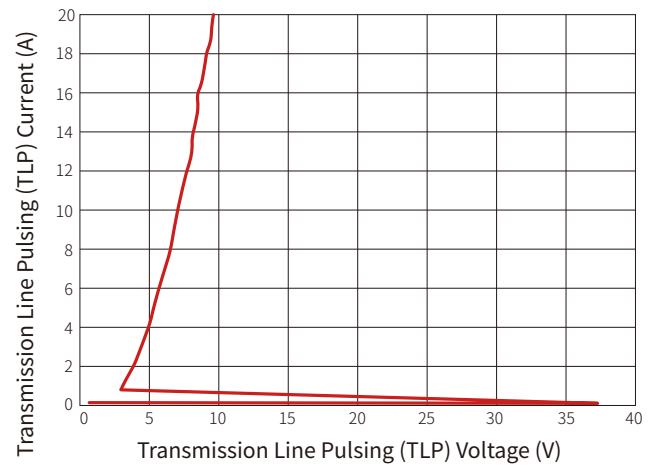
ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
V_{RWM}	Reverse Stand-off Voltage				24.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T=1mA$	25.5		50.0	V
V_H	Holding Voltage	$I_T=I_H$		2.0		V
I_H	Holding Current			4.5		mA
I_R	Reverse Leakage Current	$V_{RWM}=24V$		1.0	100	nA
V_C	Clamping Voltage	$I_{PP}=3A, tp=8/20\mu s$			4.0	V
V_C	Clamping Voltage	$I_{PP}=9A, tp=8/20\mu s$			7.0	V
V_C	Clamping Voltage	$I_{PP}=4A$ $tp=TLP(Notes1)$		4.8		V
V_C	Clamping Voltage	$I_{PP}=16A$ $tp=TLP(Notes1)$		8.0		V
R_{DYN}	Dynamic resistance	$tp=100ns(Notes1)$		0.26		Ω
I_{PP}	Peak Pulse Current	$tp=8/20\mu s$			9	A
C_J	Off State Junction Capacitance	$V_R=0V, f=1MHz$		0.30		pF

Note1: Non-repetitive current pulse, Transmission Line Pulse (TLP) $tr=0.2ns$,
 $tp=100ns$; square pulse. RDYN is calculated from 4A to 16A

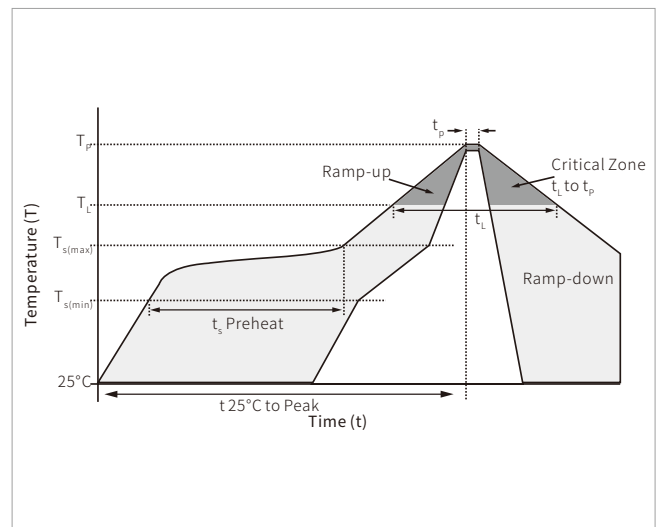
CHARACTERISTIC CURVES



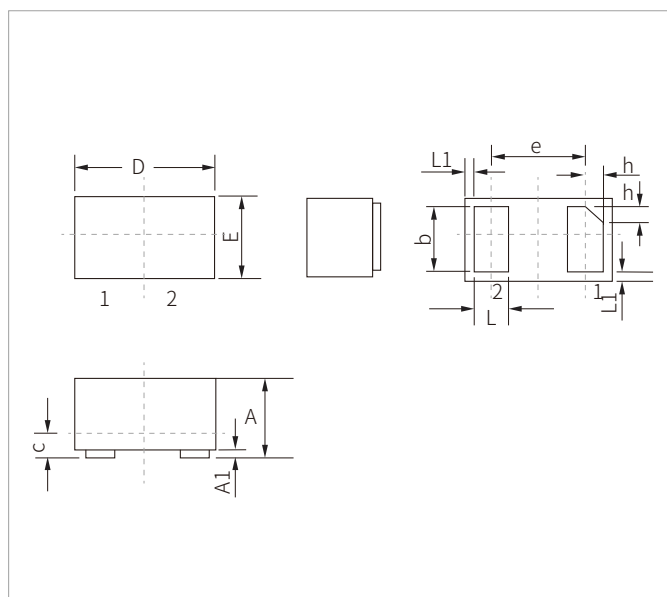
Positive TLP Curve

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

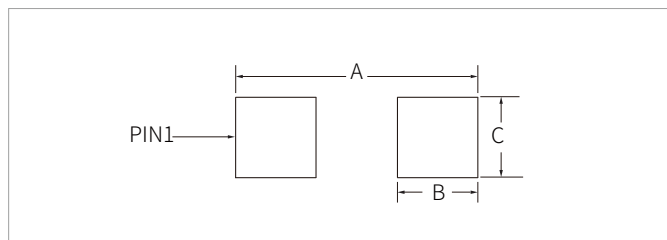


DFN1006 PACKAGE INFORMATION



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
TPSE10F10B24MA-SP	DFN1006	10000PCS	7"

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By QR Code

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