

FEATURES

- | 50Watts peak pulse power ($t_p = 8/20\mu s$)
- | Low clamping voltage
- | Working voltage: 5.0V
- | Low leakage current
- | Protecting one bi-directional lines
- | Ultra Low Junction capacitance: 0.25pF Typ
- | Meet AEC-Q101 Requirements

APPLICATIONS

- | Control & monitoring systems
- | Portable electronics
- | Servers, notebooks, and desktop PCs
- | Set-top box
- | Communication systems
- | PoE



DFN1006



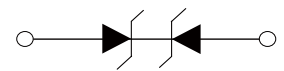
Marking

IEC COMPATIBILITY

- | IEC61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 15kV$ (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

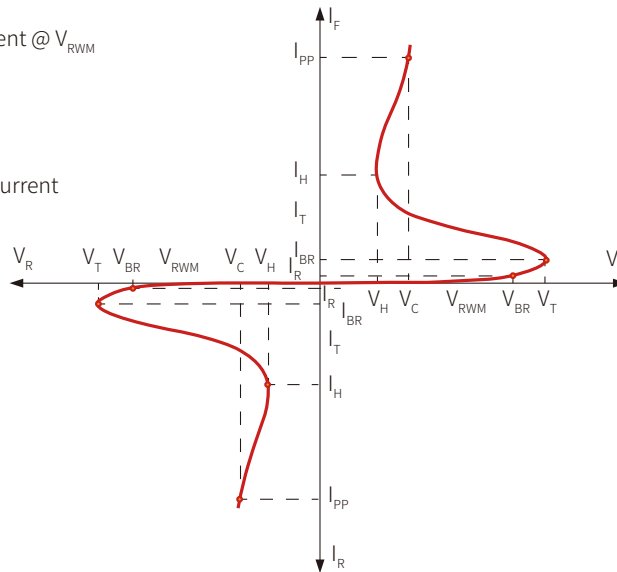
Symbol	Parameter	Value	Unit
P_{pp}	Peak Pulse Power ($t_p=8/20\mu s$ waveform)	50	Watts
T_J	Operating Temperature Range	-40 to +125	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
V_{RWM}	Reverse Stand-off Voltage				5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T=1mA$	5.5	8.0		V
I_R	Reverse Leakage Current	$V_{RWM}=5.0V$			100	nA
V_{CL}	Clamping Voltage	$I_{pp}=1A, t_p=8/20\mu s$		2.5	3.0	V
V_{CL}	Clamping Voltage	$I_{pp}=8A, t_p=8/20\mu s$		5.2	6.0	V
I_{PP}	Peak Pulse Current	$t_p=8/20\mu s$			8	A
C_J	Off State Junction Capacitance	$V_R=0V, f=1MHz$		0.25		pF

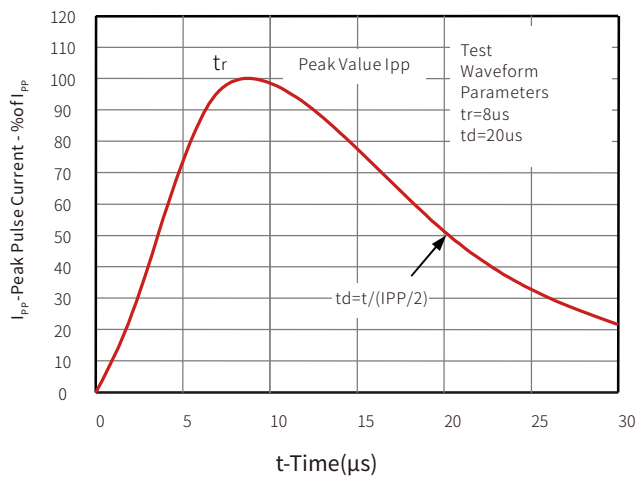
ELECTRICAL PARAMETERS ($T_A = 25^\circ\text{C}$)

- 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}

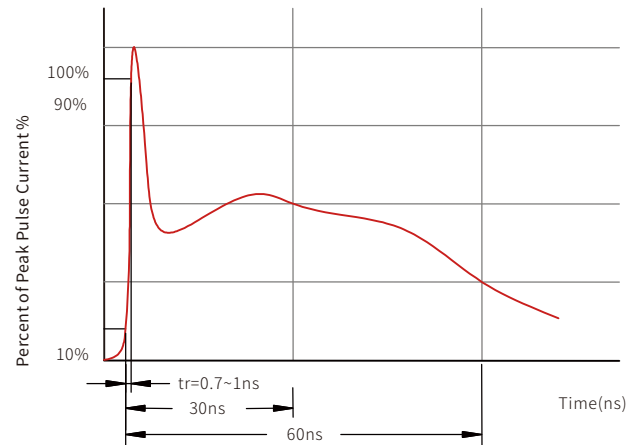


CHARACTERISTIC CURVES

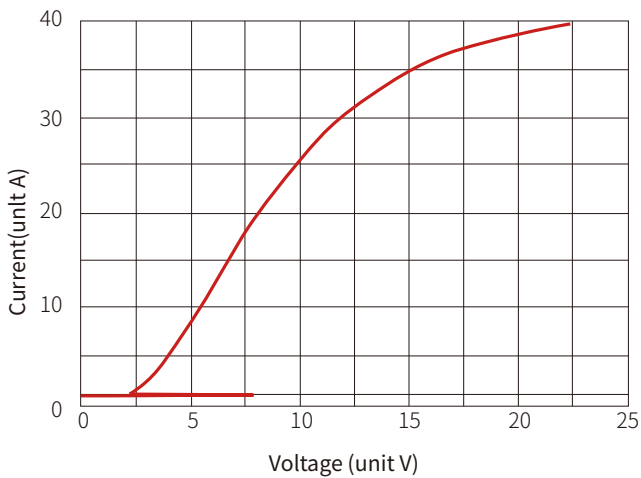
8/20 μs Pulse Waveform



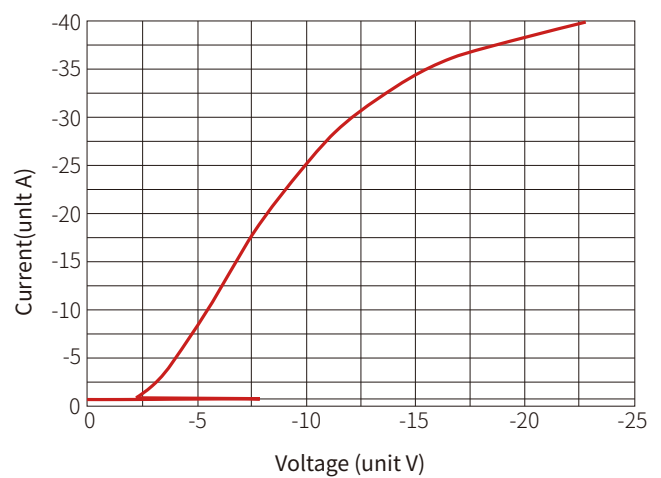
ESD Pulse Waveform (according to IEC 61000-4-2)



TLP Curve: IO-IO(V+)

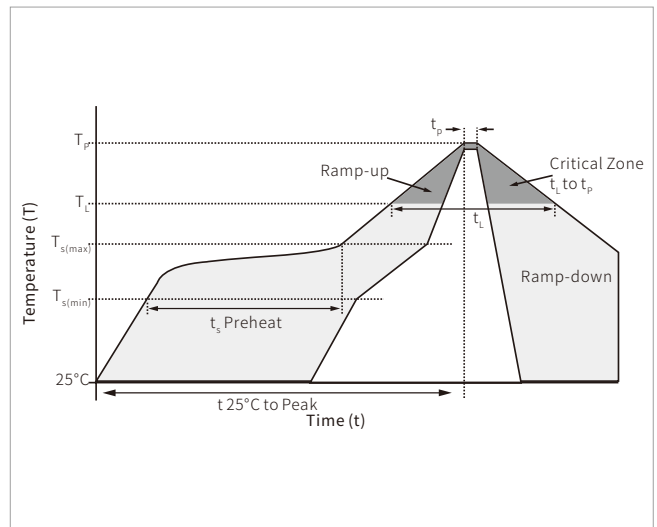


TLP Curve: IO-IO(V-)

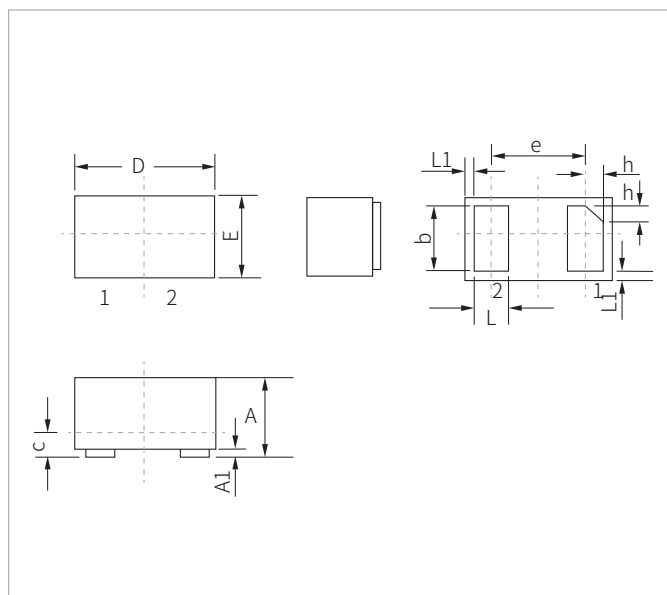


SOLDERING PARAMETERS

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

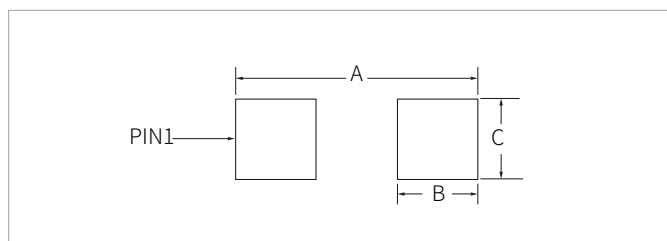


DFN1006 PACKAGE INFORMATION



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
TPSE10F10B5.0MA-SP	DFN1006	10000PCS	7"

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