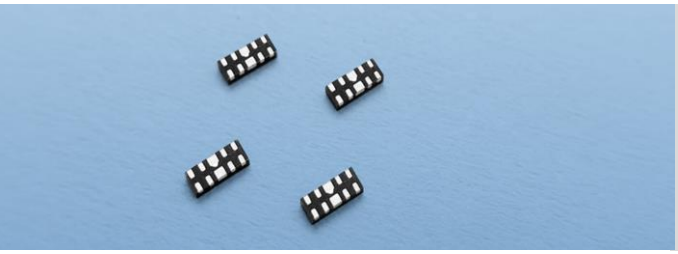
Together We Make It Safe!

DA TECHNOLOGY



TVS Protection Array (TPA)

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DCN: DA0018-00
Rev: A

TVS Protection Array TPA1006L1

- DFN1006
- 100W

Features

- 100Watts peak pulse power (tp = 8/20μs)
- Tiny DFN1006 package
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant
- Low clamping voltage
- Low leakage current
- Low capacitance
- Protection one data/power line to:
  IEC 61000-4-2 ±10kV contact ±15kV air
  IEC 61000-4-4 (EFT) 40A (5/50ns)
  IEC 61000-4-5 (Lightning) 4A (8/20μs)

Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation

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DFN1006 100W

Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{PP}	100	W
Peak Pulse Current (t_P = 8/20μS)	I_{PP}	4	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±15 ±10	KV
Junction Temperature Range	T_J	-55~125	℃
Storage Temperature Range	T_{STG}	-55~125	℃

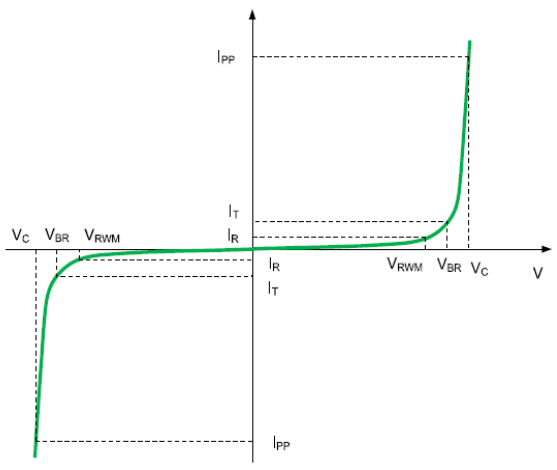
Note: 1. Ratings at 25℃ ambient temperature unless otherwise specified.

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Stand-off Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6.0	7.5		V	I_T = 1mA
Reverse Leakage Current	I_R		0.1	0.5	μA	V_{RWM} = 5V
Clamping Voltage	V_C			20	V	I_{PP} = 4A (8 x 20μs pulse)
Junction Capacitance	C_J		0.5	0.6	pF	V_R = 0V, f = 1MHz

I-V Curve Characteristics

Bidirectional



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DFN1006 100W

Symbol	Parameter	Explanation
(1) I_{PP}	**Peak pulse current**	The maximum surge current that flows though the TVS
(2) V_{BR}	**Breakdown voltage**	The Voltage that flows though the TVS at a specified test current (I_T)
(3) I_T	**Test current**	A specified test current that flows though the TVS
(4) V_{RWM}	**Stand-off voltage**	Maximum voltage that can be applied to the TVS without operation
(5) I_R	**Leakage current @ V_R**	Current measured at V_R
(6) V_C	**Clamping voltage**	Peak voltage measured across the suppressor at a specified Ipp (peak impulse current)

Fig1. Pulse Waveform

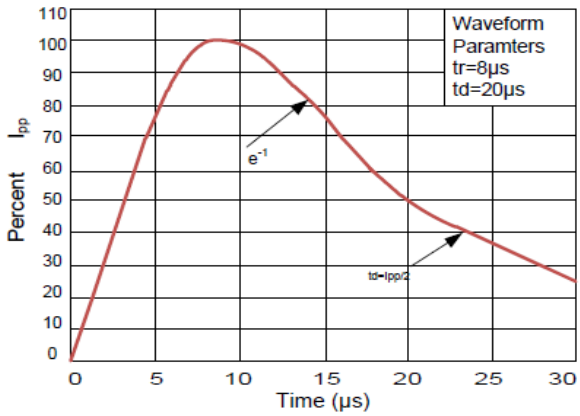


Fig2. Power Derating Curve

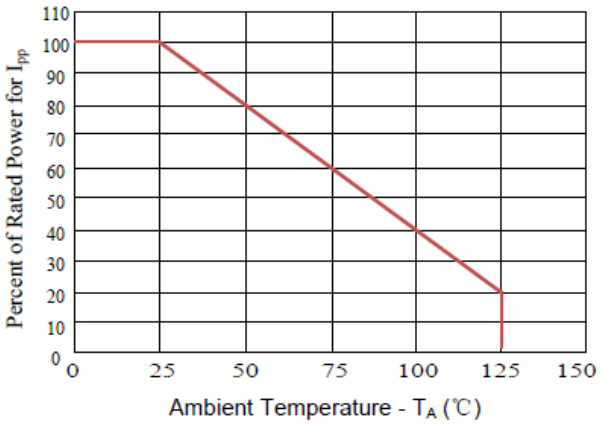


Figure 3. Clamping Voltage vs. I_{pp}

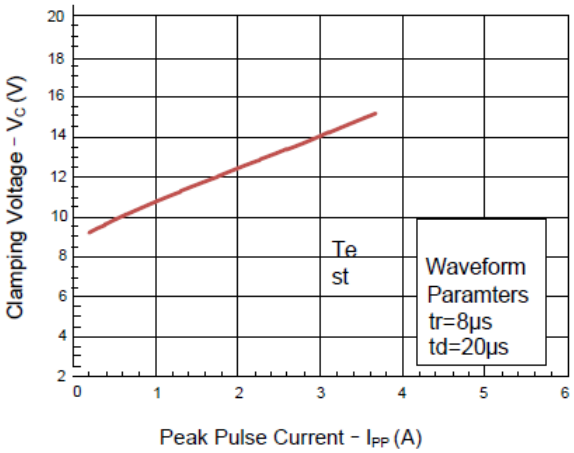
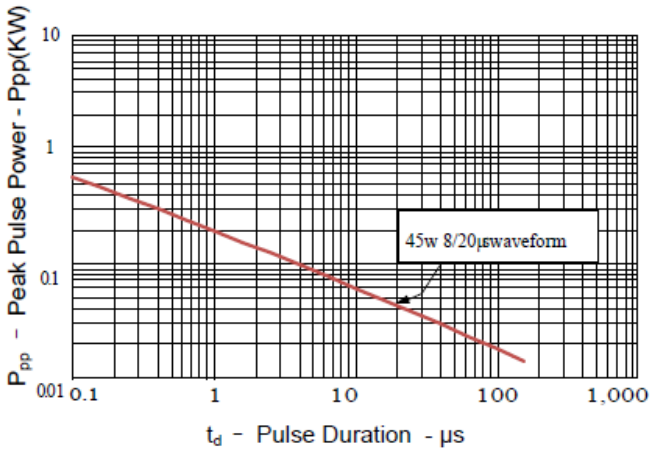
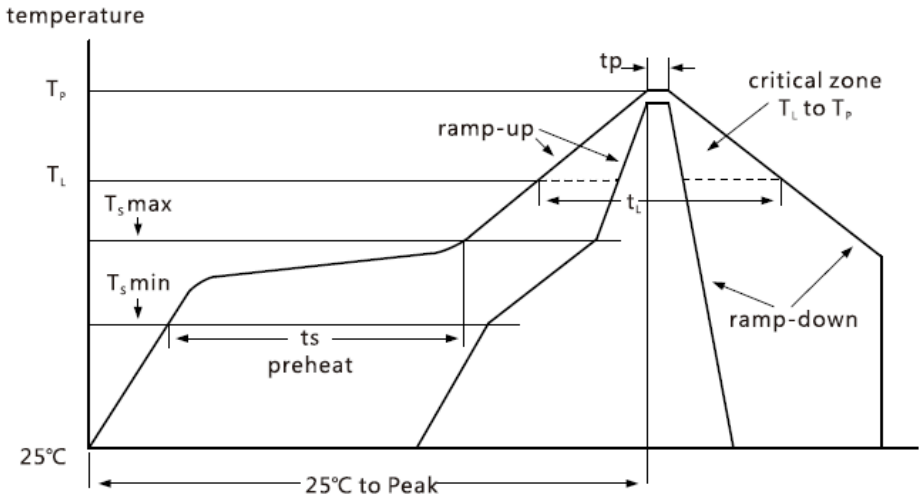


Figure 4. Peak Pulse Power Rating Curve

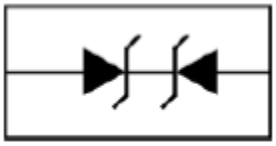


Reflow Soldering Profile



Reflow Profile Feature	SnPb eutectic assembly	Pb-free assembly
Average ramp-uprate ($T_s$max to T_p)	3°C/s maximum	3°C/s maximum
Preheat		
Temperature minimum ($T_s$min)	100°C	150°C
Temperature maximum ($T_s$max)	150°C	200°C
Time ($T_s$min to $T_s$max)	60 s to 120 s	60 s to 180 s
Time maintained above		
Temperature (T_L)	183°C	217°C
Time (t_L)	60 s to 150 s	60 s to 150 s
Peak/classification temperature (T_P)	235°C	260°C
Number of allowed reflow cycles	3	3
Time within 5 °C of actual peak temperature (tp)	10 s to 30 s	10 s to 30 s
Ramp-down rate	6°C/s maximum	6°C/s maximum
Time 25 °C to peak temperature	6 minutes maximum	8 minutes maximum

Product Marking and Configuration



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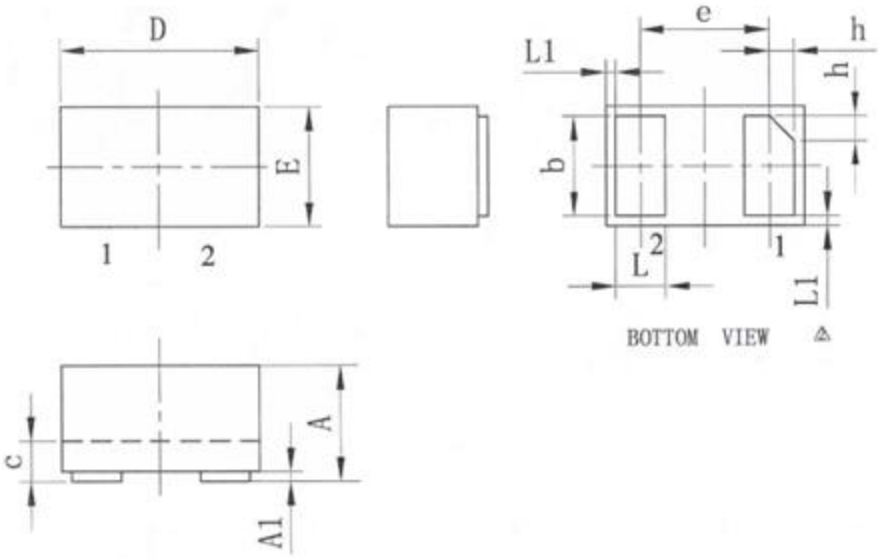
DFN1006 100W

Package Dimension (DFN1006-2L) Unit: mm



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0	0.02	0.05
b	0.45	0.50	0.55
c	0.12	0.15	0.18
D	0.95	1.00	1.05
e	0.65BSC		
E	0.55	0.60	0.65
L	0.20	0.25	0.30
L1	0.05REF		
h	0.07	0.12	0.17
载体尺寸 (单位)	20*20		

Packaging

Part	Component Package	Quantity	Packaging Option
TPA1006L1	DFN1006	10kpcs	Tape & Reel