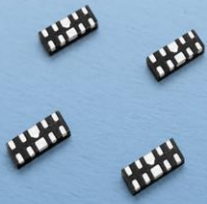


Together We Make It Safe!



TVS Protection Array (TPA)





TVS Protection Array TPA1006H

- DFN1006-2L
- Low Clamping Voltage

Features

- 35A Peak pulse current per line ($t_p = 8/20\mu s$)
- DFN1006-2L package
- Response time is typically $< 1\text{ ns}$
- Protect one I/O or power line
- Low clamping Voltage
- RoHS compliant
- Transient protection for data lines to IEC 61000-4-2(ESD) $\pm 15\text{KV(air)}$, $\pm 8\text{KV(contact)}$



Configuration

Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Current ($t_p = 8/20\mu s$)	I_{PP}	35	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 15	KV
ESD per IEC 61000-4-2 (Contact)		± 8	
Junction Temperature Range	T_J	-45~125	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-45~150	$^{\circ}\text{C}$

Note: 1. Ratings at 25 $^{\circ}\text{C}$ ambient temperature unless otherwise specified.

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Stand-off Voltage	V_{RWM}			4.5	V	
Breakdown Voltage	V_{BR}	4.6			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			1	μA	$V_{RWM} = 4.5\text{V}$
Clamping Voltage	V_C			15	V	$I_{PP} = 20\text{A}$ (8 x 20 μs pulse)
Clamping Voltage	V_C			18	V	$I_{PP} = 35\text{A}$ (8 x 20 μs pulse)
Junction Capacitance	C_J		80	110	pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$

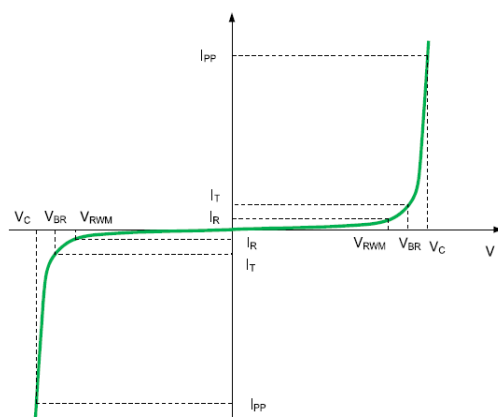
TVS Protection Array TPA1006H

DFN1006-2L Low Clamping Voltage

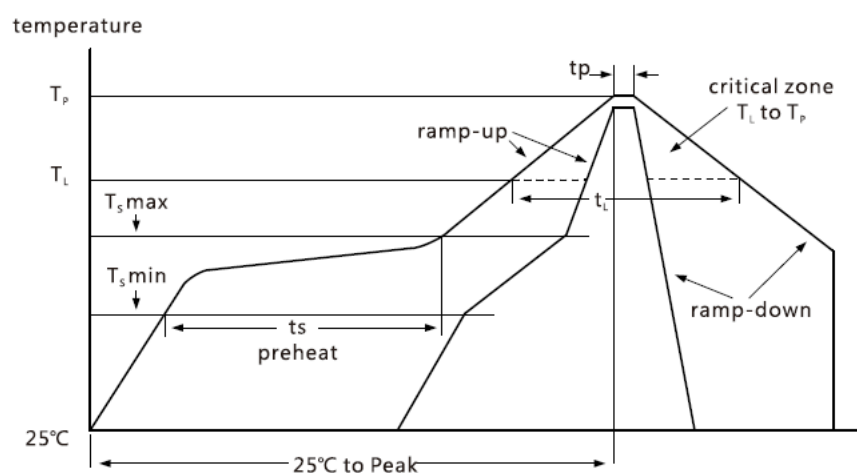
Symbol	Parameter	Explanation
(1) I_{PP}	Peak pulse current	The maximum surge current that flows through the TVS
(2) V_{BR}	Breakdown voltage	The Voltage that flows through the TVS at a specified test current (I_T)
(3) I_T	Test current	A specified test current that flows through the TVS
(4) V_{RWM}	Stand-off 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 I_{pp} (peak impulse current)

I-V Curve Characteristics

Bidirectional



Reflow Soldering Profile

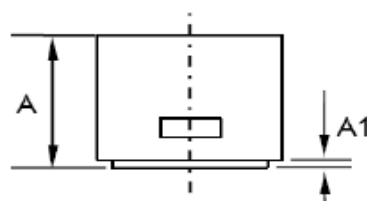
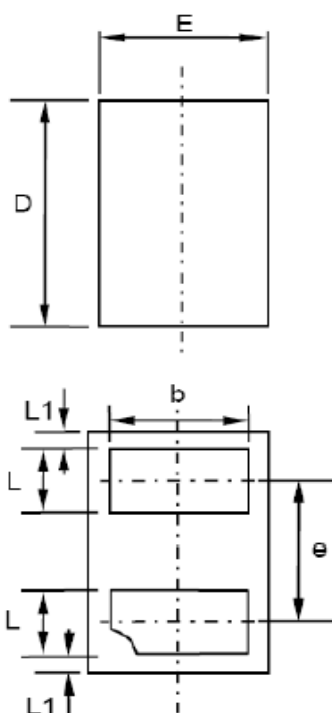


TVS Protection Array TPA1006H

DFN1006-2L Low Clamping Voltage

Reflow Profile Feature	SnPb eutectic assembly	Pb-free assembly
Average ramp-up rate ($T_s\text{max}$ to T_p)	3°C/s maximum	3°C/s maximum
Preheat		
Temperature minimum ($T_{s\text{min}}$)	100°C	150°C
Temperature maximum ($T_{s\text{max}}$)	150°C	200°C
Time ($T_{s\text{min}}$ to $T_{s\text{max}}$)	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 (t_p)	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

Package Dimension (DFN1006-2L) Unit: mm



DFN1006-2L (unit: mm)		
Dim.	Min.	Max.
A	0.34	0.50
A1	0.00	0.05
D	0.95	1.08
E	0.55	0.68
b	0.40	0.60
e	0.65 TYP.	
L	0.20	0.30
L1	0.05 REF.	

Layout Dimension Unit: mm

