SMDA05NQ

1-Line Uni-directional TVS Diode

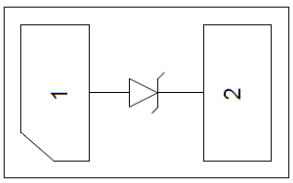
Features

- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 50A (8/20μs)
- RoHS Compliant
- AEC-Q101 qualified

Dimensions DFN1006



Pin Configuration



Applications

- Cell Phone Handsets andAccessories
- Microprocessor based equipment
- Personal DigitalAssistants(PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports
- Peripherals

Mechanical Characteristics

- Package: DFN1006
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel:10,000pcs
- Reel Size:7 inch
- Device Marking: 5V

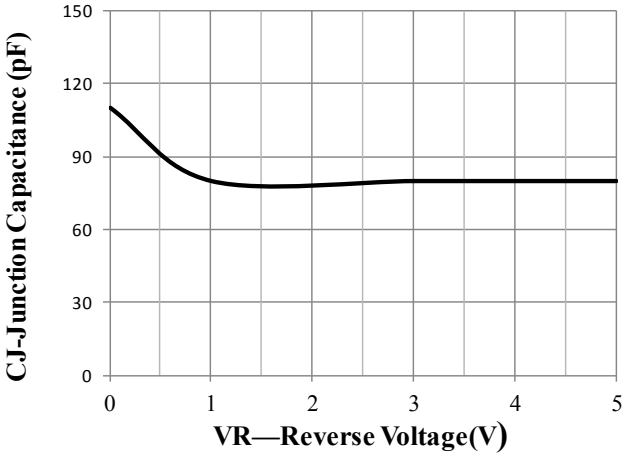
Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppp	500	W
ESD per IEC 61000−4−2 (Air)	V_{ESD}	± 30	kV
ESD per IEC 61000−4−2 (Contact)		± 30	
Operating Temperature Range	T_J	-55 to +125	℃
Storage Temperature Range	T_{STJ}	-55 to +150	℃

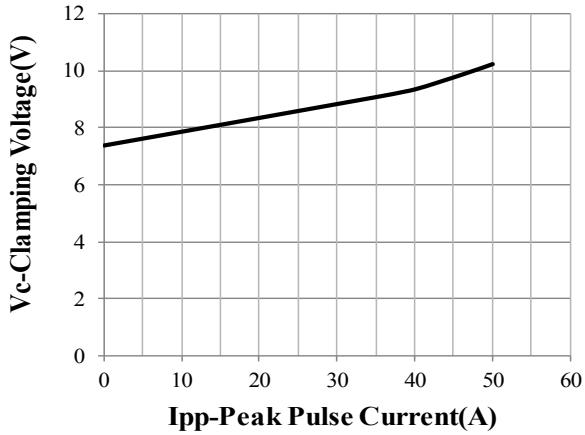
Electrical Characteristics(TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5. 0	V
Breakdown Voltage	V_{BR}	I_T = 1mA	5.5	6.0	7. 5	V
Reverse Leakage Current	I_R	V_{RWM} = 5.0V			0.5	μA
Clamping Voltage	V_C	I_{PP} = 40A (8-20μs;GND-IO)		6.5	8.5	V
Clamping Voltage	V_C	I_{PP} = 50A (8-20μs.IO-GND)		9.0	10.5	V
Junction Capacitance	C_J	VR = 0V, f = 1MHz		110	130	pF

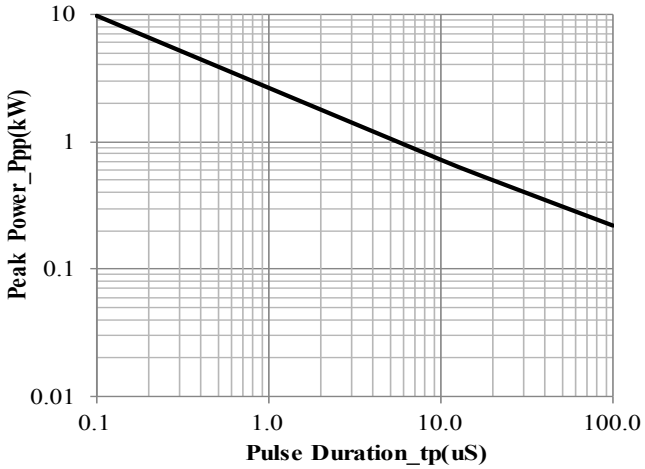
Typical Performance Characteristics(TA=25°C unless otherwise specified)



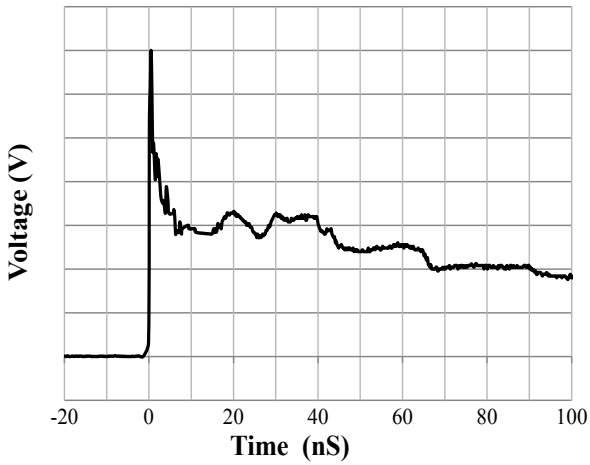
Junction Capacitance vs. Reverse Voltage



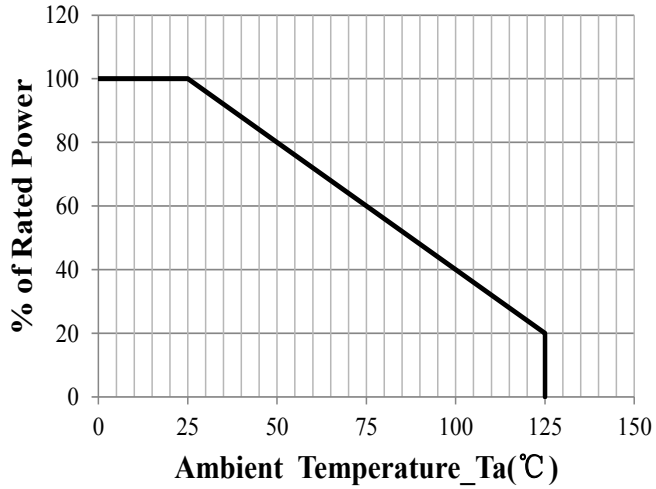
Clamping Voltage vs. Peak Pulse Current



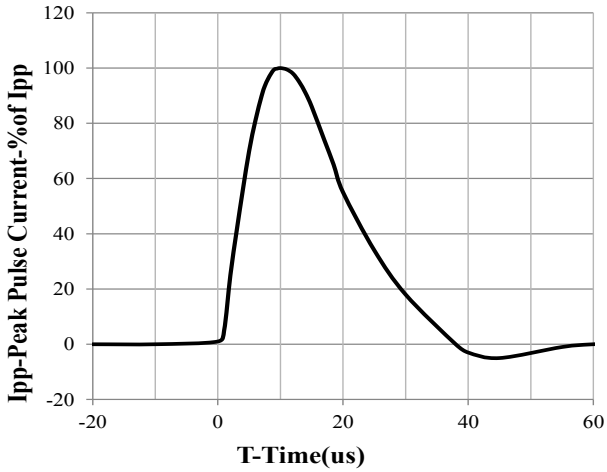
Peak Pulse Power vs. Pulse Time



IEC61000−4−2 Pulse Waveform

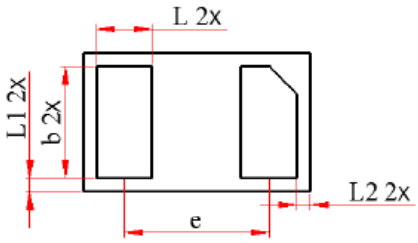


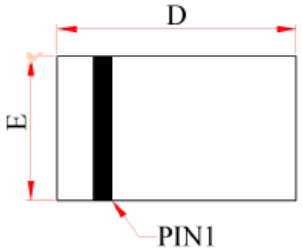
Power Derating Curve

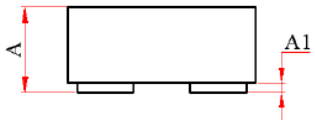


8 X 20us Pulse Waveform

DFN1006 Package Outline Drawing

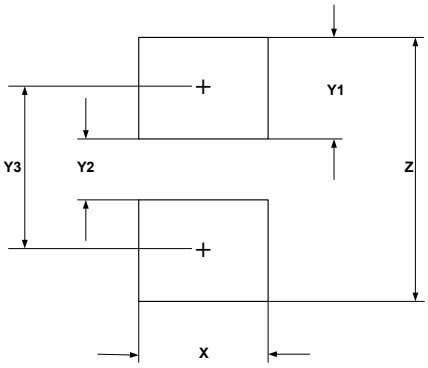






Symbol	Dimension In Millimeters			Dimension In Inches		
	Normal	Min	Max	Normal	Min	Max
A	--	0.400	0.500	--	0.016	0.020
A1	--	--	0.055	--	--	0.002
D	1.020	0.990	1.050	0.040	0.039	0.041
E	0.620	0.590	0.650	0.024	0.023	0.026
b	0.500	0.450	0.550	0.020	0.018	0.022
L	0.250	0.200	0.300	0.010	0.008	0.012
L1	0.060	0.020	0.100	0.002	0.001	0.004
L2	0.060	0.020	0.100	0.002	0.001	0.004
e	0.650 BSC			0.026 BSC		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052

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Shanghai Leiditech Electronic Technology Co., Ltd.
Email: sale1@leiditech.com
Tel : +86- 021 50828806
Fax : +86- 021 50477059