

Description

The AR0506P1-6 is a low capacitance TVS array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The AR0506P1-6 has a low capacitance with a typical value at 0.3pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 25\text{kV}$ air and $\pm 20\text{kV}$ contact discharge. The flow through style package allows for easy PCB layout and matched trace lengths necessary to maintain consistent impedance between high speed differential lines. The small size, low capacitance and high ESD surge protection make AR0506P1-6 an ideal choice to protect high speed ports.

Features

- Low operating voltage: 5V
- Low clamping voltage
- Flow-through package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{kV}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-5 (Lightning) 3A (8/20 μs)
- RoHS Compliant

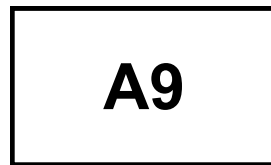
Mechanical Characteristics

- Package: DFN1006-6
- Lead Finish: Matte Tin
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

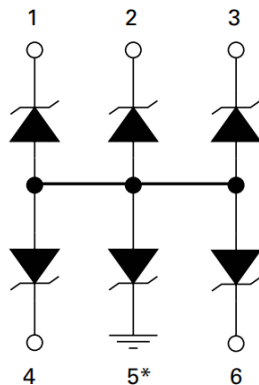
- Smart Phones
- Mobile Phones
- Wearable Technology

Marking Information



A9 = Device Marking Code

Dimensions and Pin Configuration



Ordering Information

Part Number	Packaging	Reel Size
AR0506P1-6	10000/Tape & Reel	7 inch

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

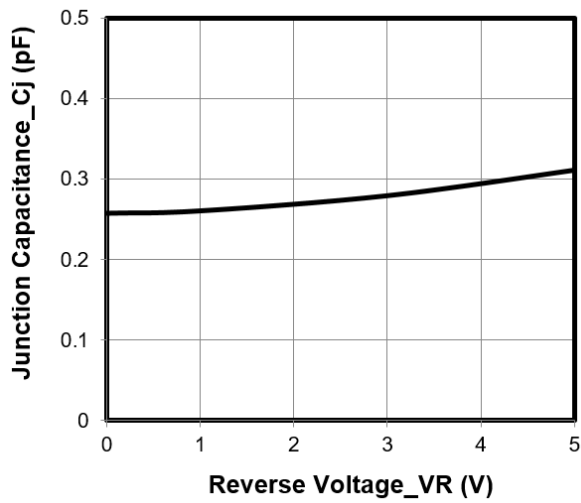
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	45	W
Peak Pulse Current (8/20 μs)	I _{PP}	3	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	± 25 ± 20	kV
Operating Temperature Range	T _J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

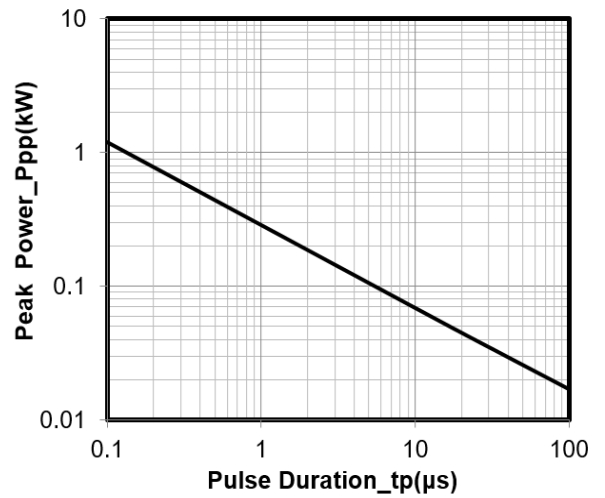
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5	V	
Breakdown Voltage	V _{BR}	6			V	I _T = 1mA
Reverse Leakage Current	I _R			0.5	μA	V _{RWM} = 5V
Clamping Voltage	V _C			11	V	I _{PP} = 1A (8 x 20 μs pulse), any I/O pin to ground
Clamping Voltage	V _C			15	V	I _{PP} = 3A (8 x 20 μs pulse) ,any I/O pin to ground
Junction Capacitance	C _J		0.3		pF	V _R = 0V, f = 1MHz, any I/O pin to ground

Note: Any pin can be used as GND.

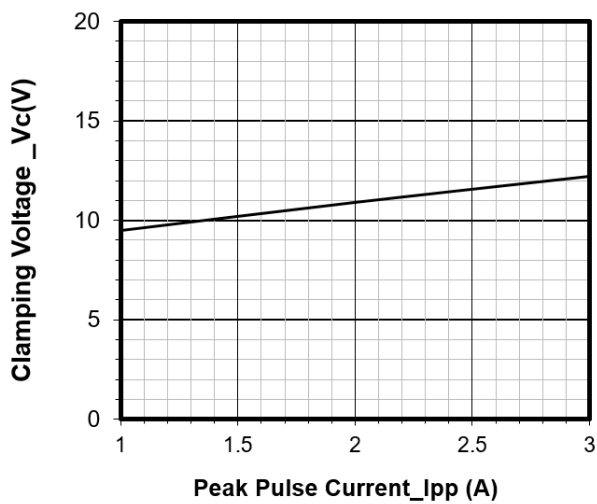
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



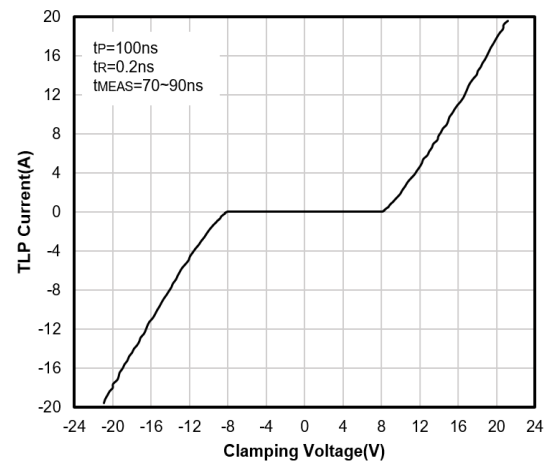
Junction Capacitance vs. Reverse Voltage



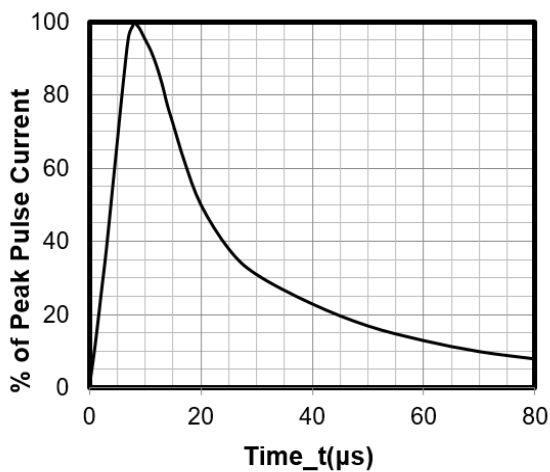
Peak Pulse Power vs. Pulse Time



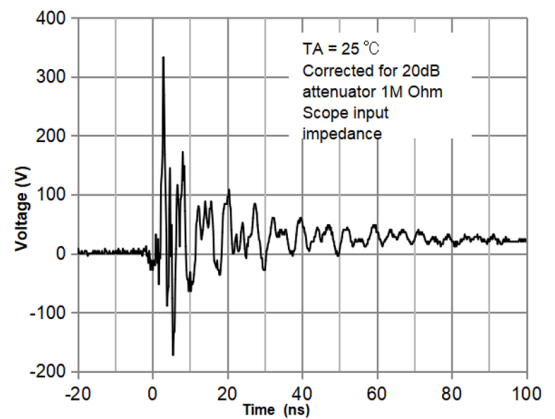
Clamping Voltage vs. Peak Pulse Current



TLP Curve

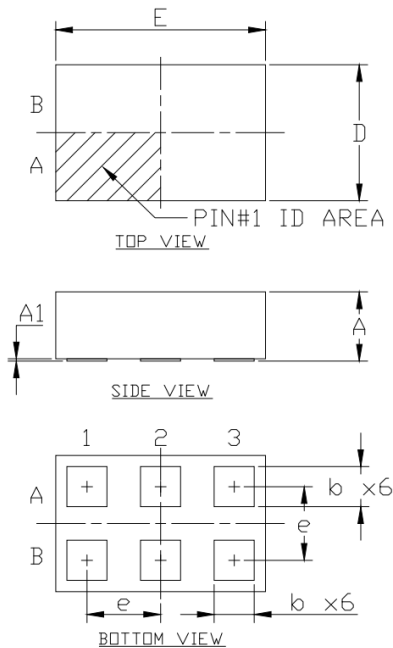


8 X 20μs Pulse Waveform



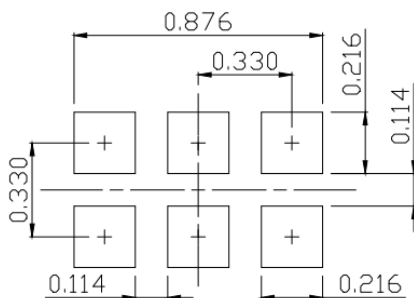
**ESD Clamping Voltage
8 kV Contact per IEC61000-4-2**

DFN1006-6 Package Outline Drawing



SYMBOL	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.450	0.550	0.0180	0.0220
A1	0.000	0.005	0.0000	0.0002
b	0.175	0.185	0.0069	0.0073
D	0.550	0.650	0.0220	0.0260
E	0.950	1.050	0.0370	0.0410
e	0.330		0.0130	

Suggested Land Pattern



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