

Description

The AR0502P6 is an uni-directional TVS diode 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 AR0502P6 has an ultralow capacitance with a typical value at 0.6pF, and complies with the IEC 61000-4-2 (ESD) with ±25kV air and ±20kV contact discharge. It is assembled into an ultrasmall 1.6x1.0x0.75mm lead-free DFN package. The small size, ultra-low capacitance and high ESD surge protection make AR0502P6 an ideal choice to protect cell phone, digital video interfaces and other high speed ports.

Features

Small package: 1.6x1.0x0.75mmUltra low capacitance: 0.6pF typical

Ultra low leakage: nA levelOperating voltage: 5V

• Low clamping voltage

6-pin leadless package

Protects two lines

• Complies with following standards:

IEC 61000-4-2 (ESD) immunity test
 Air discharge: ±25kV
 Contact discharge: ±20kV

– IEC61000-4-5 (Lightning) 5A (8/20μs)

RoHS Compliant

Mechanical Characteristics

Package: DFN1610-6

Case Material: "Green" Molding Compound.Terminal Connections: See Diagram Below

· Marking Information: See Below

Applications

Cellular Handsets and Accessories

USB Ports

Video Interface

MDDI Ports

Marking Information

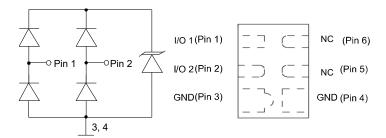
0522P ●

0522P = Device Marking Code Dot denotes Pin1

Ordering Information

Part Number	Packaging	Reel Size
AR0502P6	3000/Tape & Reel	7 inch

Dimensions and Pin Configuration



Circuit Schematic

PIN Schematic



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

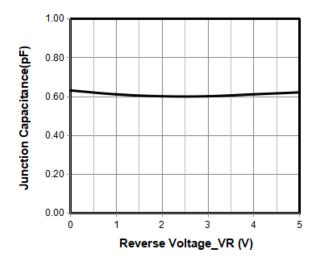
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20µs)	Ppk	75	W
Peak Pulse Current (8/20µs)	I PP	5	Α
ESD per IEC 61000-4-2 (Air)	VESD	±25	kV
ESD per IEC 61000-4-2 (Contact)		±20	
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

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

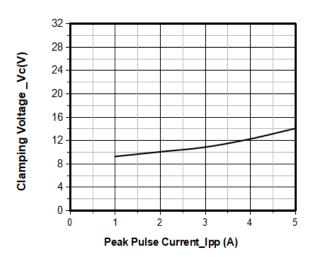
Parameter	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	
Breakdown Voltage	VBR	6			V	IT = 1mA
Reverse Leakage Current	I _R			0.5	μΑ	VRWM = 5V
Clamping Voltage	Vc			10	V	IPP = 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	Vc			15	V	IPP = 5A (8 x 20μs pulse), any I/O pin to ground
Junction Capacitance	CJ		0.3	0.4	pF	VR = 0V, f = 1MHz, between I/O pins
Junction Capacitance	Cı			0.8	pF	VR = 0V, f = 1MHz, any I/O pin to ground



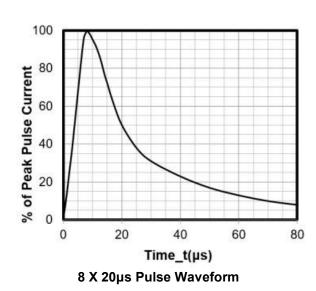
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

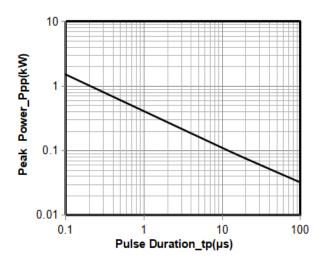


Junction Capacitance vs. Reverse Voltage

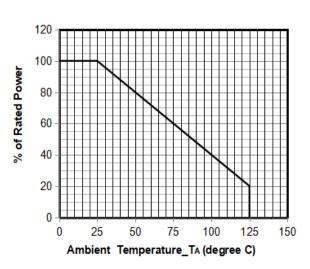


Clamping Voltage vs. Peak Pulse Current

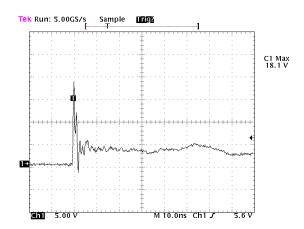




Peak Pulse Power vs. Pulse Time



Power Derating Curve



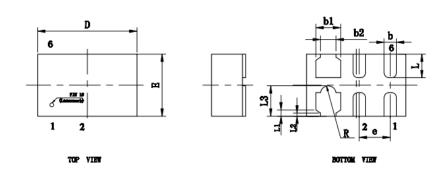
Note: Data is taken with a 10x attenuator

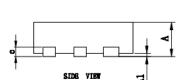
ESD Clamping Voltage

8 kV Contact per IEC61000-4-2



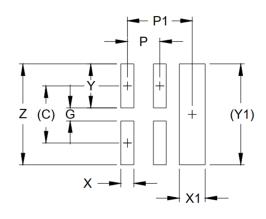
DFN1610-6 Package Outline Drawing





	MILLIMETERS		
SYM	MIN	NOM	MAX
Α	0.50	0.55	0.60
A1		0.02	0.05
b	0.15	0.20	0.25
b1	0.35	0.40	0.45
b2	0.20	0.25	0.30
С	0.10	0.15	0.20
D	1.55	1.60	1.65
Е	0.95	1.00	1.05
е	0.50BSC		
L	0.33	0.38	0.43
L1	0.100REF		
L2	0.05REF		
L3	0.49REF		
R	0.08	0.13	0.18

Suggested Land Pattern



DIMENSIONS				
DIM	INCHES	MILLIMETERS		
С	(.034)	(0.87)		
G	.007	0.19		
Р	.020	0.50		
P1	.039	1.00		
X	.008	0.20		
X1	.016	0.40		
Υ	.027	0.68		
Y1	(.061)	(1.55)		
Z	.061	1.55		

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