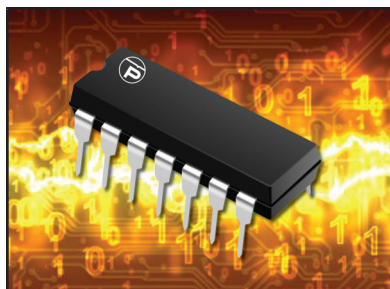


ULTRA LOW CAPACITANCE MULTI-LINE STEERING DIODE ARRAY



14 PIN DIP PACKAGE

DESCRIPTION

The PMAD Series are a low distortion steering diodes. These devices are intended for use in high frequency analog or digital data I/O ports for protection against Electrostatic Discharge (ESD) and Electrical Fast Transients (EFT). The PMAD Series is connected between rail-to-rail voltage bus or rail-to-ground for clamping and diverting overvoltage transients for the protection of sensitive network interface circuits.

This series provides low capacitance, which insures signal integrity up to 900MHz, while complete isolation between adjacent diodes keeps cross-talk to a minimum. The PMAD Series is available in a 14 pin DIP and meets the IEC 61000-4-2, IEC 61000-4-4 and IEC 61000-4-5 requirements.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 24A, 8/20 μ s - Level 2(Line-Gnd) & Level 3(Line-Line)
- 500 Milliwatt Continuous Power Dissipation
- ESD Protection > 25 kilovolts
- Protects up to 7 to 8 I/O Lines
- Working Voltage > 50 Volts
- Low Leakage Current < 0.1 μ A
- Ultra Low Capacitance: 5pF per Diode
- RoHS Compliant
- REACH Compliant

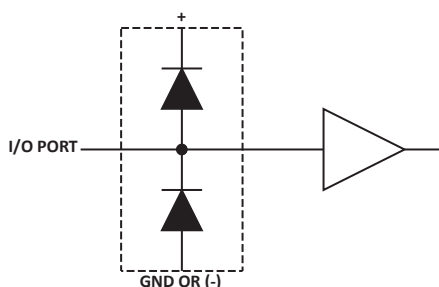
APPLICATIONS

- High Frequency Data Lines
- RS-232 & RS-422 Interface Networks
- Ethernet 10/100 Base T
- Computer I/O Ports

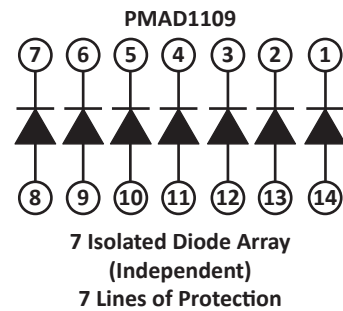
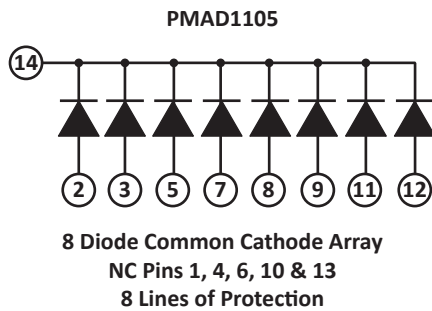
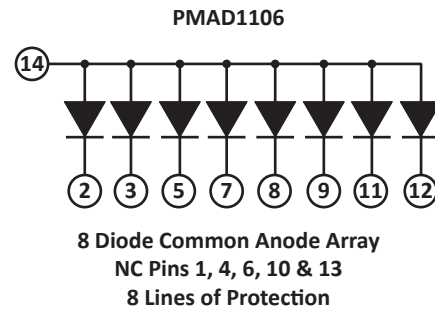
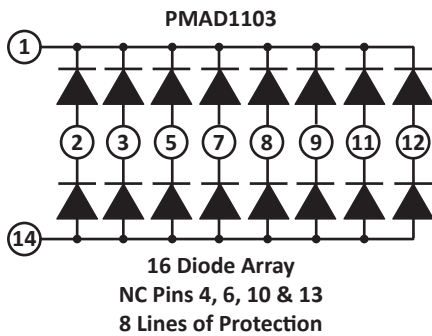
MECHANICAL CHARACTERISTICS

- Molded 14 Pin Dual-In-Line (DIP) Package
- Approximate Weight: 1.2 grams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- Flammability Rating UL 94V-0

CIRCUIT DIAGRAM



PIN IDENTIFICATION AND CONFIGURATION



TYPICAL DEVICE CHARACTERISTICS

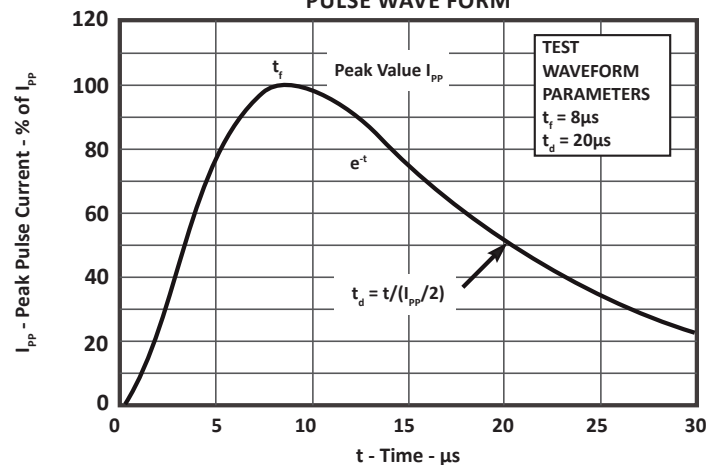
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Continuous Power Dissipation	P_{PK}	500	Milliwatts
Continuous Forward Current (Single Diode)	I_P	400	mA
Repetitive Peak Forward Current @ $t_p = 5\mu s$, $F = 50kHz$	I_{FRM}	700	mA
Operating Temperature	T_A	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

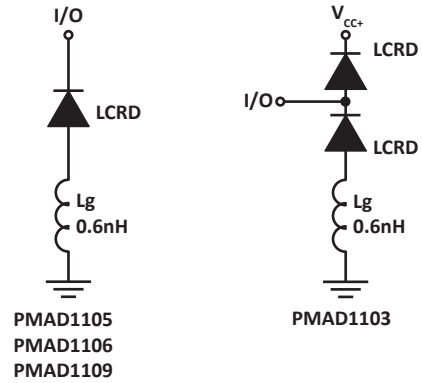
PART NUMBER	REPETITIVE PEAK REVERSE VOLTAGE @ 10 μA V_{RRM} VOLTS	MAXIMUM FORWARD PEAK PULSE CURRENT @ 8/20 μs I_{FM} AMPS	MAXIMUM FORWARD VOLTAGE @ 100mA V_F VOLTS	MAXIMUM REVERSE LEAKAGE CURRENT V_{RRM} @ 40V I_R μA	MAXIMUM CAPACITANCE (Per Diode) @4V, 1MHz C_j pF
PMAD1103	50	40	1.2	0.1	5
PMAD1105	50	40	1.2	0.1	5
PMAD1106	50	40	1.2	0.1	5
PMAD1109	50	40	1.2	0.1	5

FIGURE 1
PULSE WAVE FORM



SPICE MODEL

FIGURE 1
SPICE MODEL



LCRD - Low Capacitance Rectifier Diode
Lg - Lead Inductance

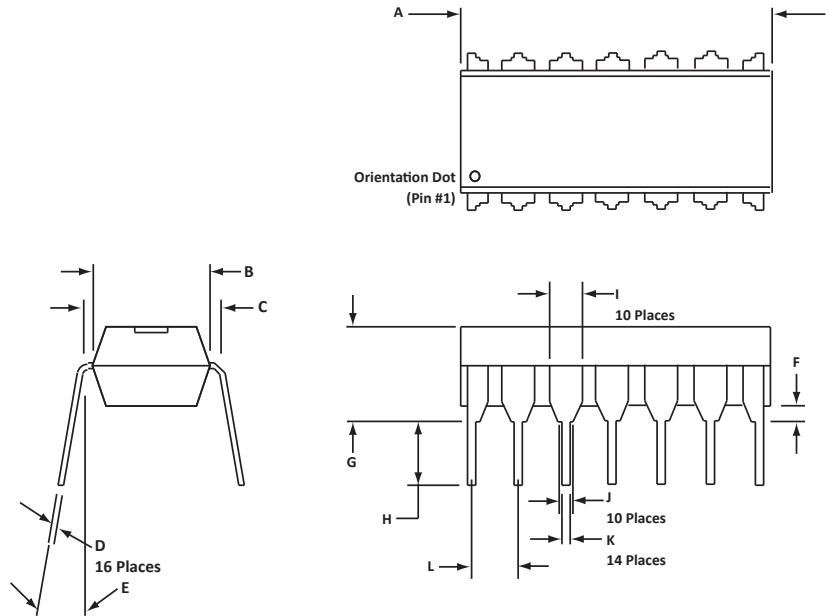
TABLE 1 - SPICE PARAMETERS		
PARAMETER	UNIT	LCRD
BV	V	200
IBV	μA	0.01
C_{jo}	pF	5
I_s	A	1E-13
Vj	V	0.6
M	-	0.33
N	-	1
R_s	Ohms	0.31
TT	s	1E-9
EG	eV	1.11

14 PIN DIP PACKAGE INFORMATION

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	18.16	19.56	0.715	0.770
B	6.10	6.60	0.240	0.260
C	7.37	7.87	0.290	0.310
D	0.20	0.38	0.008	0.015
E	0°	10°	0°	10°
F	0.38	1.01	0.015	0.039
G	3.69	4.69	0.145	0.185
H	2.92	3.43	0.115	0.135
I	1.02	1.78	0.040	0.070
J	1.32	2.41	0.052	0.095
K	0.38	0.53	0.015	0.021
L	2.54		0.100	

NOTES

- Dimensions are exclusive of mold flash and metal burrs.
- Dimension "L" is between centers.



ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PMADxxxx	-LF	n/a	n/a	n/a	25

NOTES

- Marking on Part - logo, part number, date code and pin one defined by dot on top of package.
- This series is only available in a lead-free configuration.

COMPANY INFORMATION

COMPANY PROFILE

In business more than 25 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers LED wafer die for ESD protection and related high frequency products. ProTek Devices is ISO 9001:2015 certified.

CONTACT US

Corporate Headquarters

2929 South Fair Lane
Tempe, Arizona 85282
USA

By Telephone

General: 602-431-8101
Sales: & Marketing: 602-414-5109
Customer Service: 602-414-5114
Product Technical Support: 602-414-5107

By Fax

General: 602-431-2288

By E-mail:

Asia Sales: asiasales@protekdevices.com
Europe Sales: europesales@protekdevices.com
U.S. Sales: ussales@protekdevices.com
Distributor Sales: distysales@protekdevices.com
Customer Service: service@protekdevices.com
Technical Support: support@protekdevices.com

ProTek Devices (Asia Pacific) Pte. Ltd.

8 Ubi Road 2, #06-19
Zervex
Singapore - 408538
Tel: +65-67488312
Fax: +65-67488313

Web

www.protekdevices.com

COPYRIGHT © ProTek Devices 2000 - This literature is subject to all applicable copyright laws and is not for resale in any manner.

SPECIFICATIONS: ProTek reserves the right to change the electrical and or mechanical characteristics described herein without notice.

DESIGN CHANGES: ProTek reserves the right to discontinue product lines without notice and that the final judgement concerning selection and specifications is the buyer's and that in furnishing engineering and technical assistance. ProTek assumes no responsibility with respect to the selection or specifications of such products. ProTek makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ProTek assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability without limitation special, consequential or incidental damages.

LIFE SUPPORT POLICY: ProTek Devices products are not authorized for use in life support systems without written consent from the factory.