

ULTRA LOW CAPACITANCE MULTI-LINE STEERING DIODE ARRAY**DESCRIPTION**

The MMAD1108 is a low distortion steering diode. This device is 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 MMAD1108 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 device provides low capacitance, which insures signal integrity up to 900MHz, while complete isolation between adjacent diodes keeps cross-talk to a minimum. The MMAD1108 is available in a SO-16 package and meets the IEC 61000-4-2, IEC 61000-4-4 and IEC 61000-4-5 requirements.

FEATURES

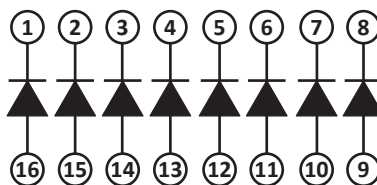
- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 12A, 8/20 μ s - Level 1(Line-Gnd) & Level 2(Line-Line)
- 500 Milliwatt Continuous Power Dissipation
- Monolithic Design
- ESD Protection > 25 kilovolts
- Protects up 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 JEDEC SO-16 Package
- Approximate Weight: 0.15 grams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 16mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

PIN CONFIGURATION**8 LINES OF PROTECTION**

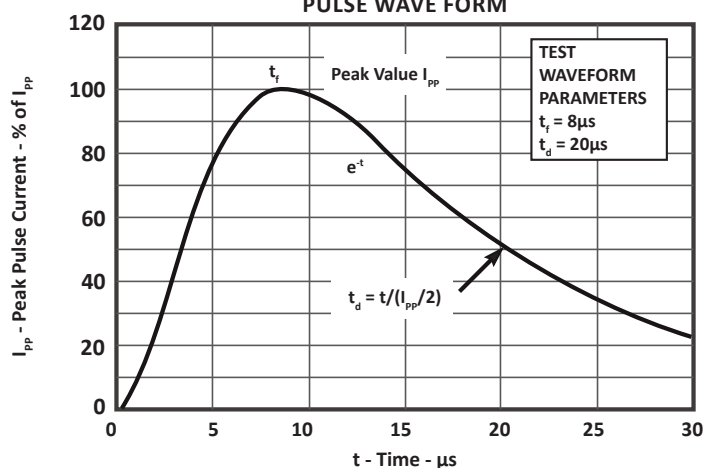
TYPICAL DEVICE CHARACTERISTICS

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
MMAD1108	50	12	1.2	0.1	5

 FIGURE 1
 PULSE WAVE FORM


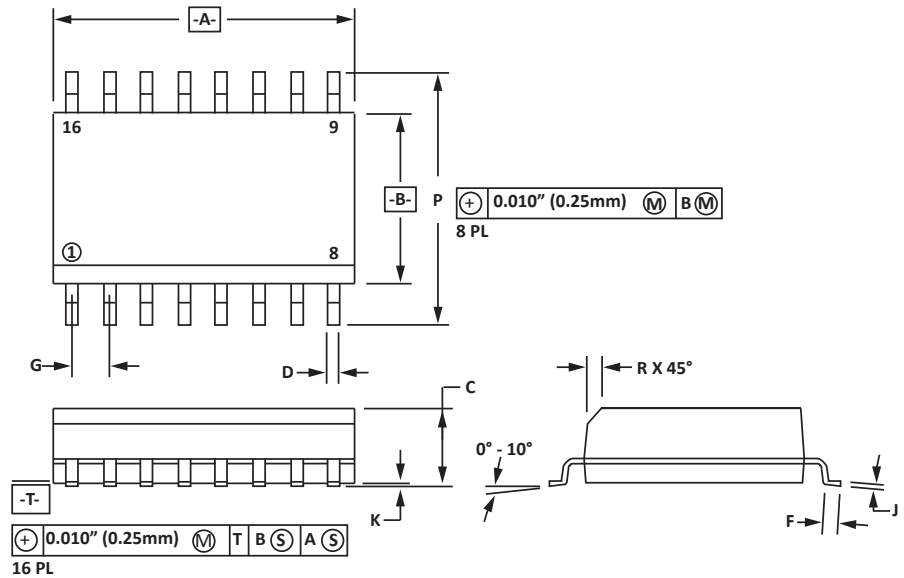
SO-16 PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.80	10.00	0.386	0.393
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.05 BSC	
J	0.18	0.25	0.007	0.009
K	0.10	0.25	0.004	0.008
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

NOTES

1. -T- = Seating plane and datum surface.
2. Dimensions "A" and "B" are datum.
3. Dimensions "A" and "B" do not include mold protrusion.
4. Maximum mold protrusion is 0.015" (0.380mm) per side.
5. Dimensioning and tolerances per ANSI Y14.5M, 1982.
6. Dimensions are exclusive of mold flash and metal burrs.

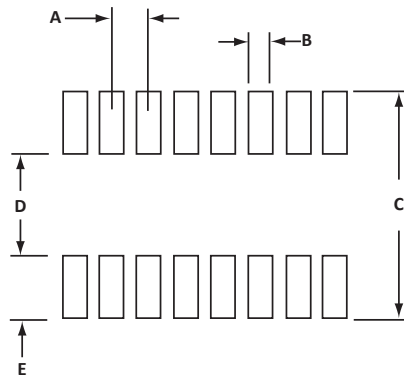


PAD LAYOUT DIMENSIONS

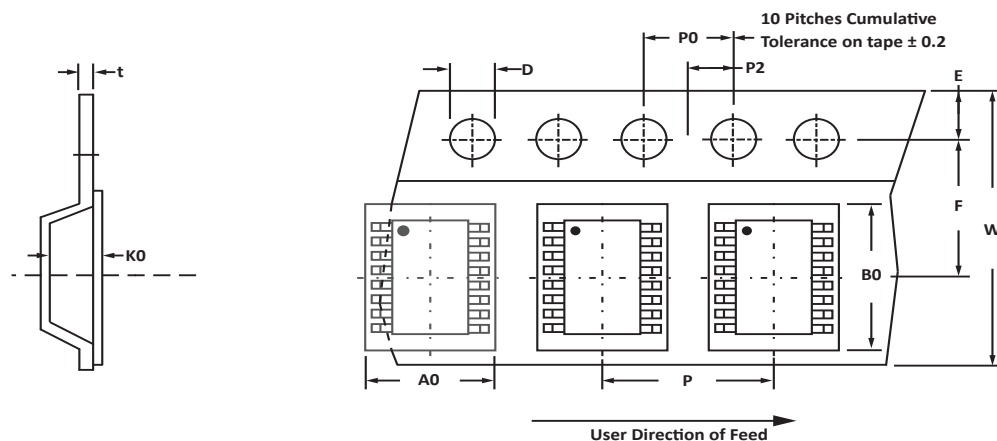
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.14	1.40	0.045	0.055
B	0.64	0.89	0.025	0.035
C	6.22	-	0.245	-
D	3.94	4.17	0.155	0.165
E	1.02	1.27	0.040	0.050

NOTES

1. Controlling dimension: inches.



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	16mm	6.50 ± 0.10	10.30 ± 0.10	2.10 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	16.00 ± 0.30	4.00 ± 0.12	2.00 ± 0.10	8.00 ± 0.10	0.25

NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T7 = 7" Reel - 1,000 pieces per 16mm tape.
4. Suffix - T13 = 13" Reel - 2,500 pieces per 16mm tape.
5. Bulk product shipped in tubes of 48 pieces per tube.
6. Marking on Part - part number, date code, logo and pin one defined by dot on top of package.

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
MMAD1108	-LF	-T7	1,000	7"	48
MMAD1108	-LF	-T13	2,500	13"	48

This device 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.

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