

## SO-16, EIGHT LINES, BI-DIRECTIONAL, TVS DIODE ARRAY

### PRODUCT DESCRIPTION

The UMD16LCXXB series of Monolithic Transient Voltage Suppressors are designed for applications where voltage transients caused by electrostatic discharge(ESD) and other induced voltage surges can permanently damage voltage sensitive components. These TVS diodes are characterized by their high surge capability extremely fast response time and low on-resistance. The UMD16LCXXB series consists of bi-directional diode arrays with low input capacitances and is specifically designed to protect multiple or single data lines with each channel being electrically independent for multiple I/O port protection. These monolithic diode array networks can be used to protect combinations of 8 unidirectional or bi-directional lines. They provide ESD and surge protection for sensitive power and I/O ports.

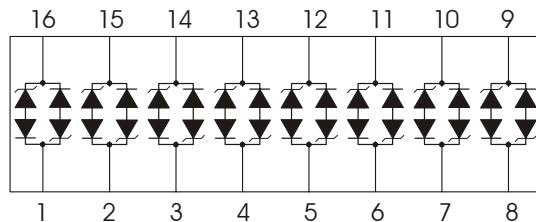
### FEATURES

- ※ 500 Watts peak pulse power ( $tp=8/20\mu s$ )
- ※ ESD and Transient protection for data, signal and Vcc bus to IEC 1000-4-2. IEC 1000-4-4. IEC 1000-4-5
- ※ Protects up to 8 bi-directional lines
- ※ Standoff voltages from 5 to 15V
- ※ Low capacitance for high speed interfaces
- ※ Low clamping voltage
- ※ ESD protection >8kV (contact)

### APPLICATIONS

- ※ ESD & surge protection for power lines & I/O ports
- ※ TTL and MOS Bus Lines
- ※ RS-232, RS-422 and RS-485 data lines
- ※ High speed logic
- ※ High speed data & video transmission

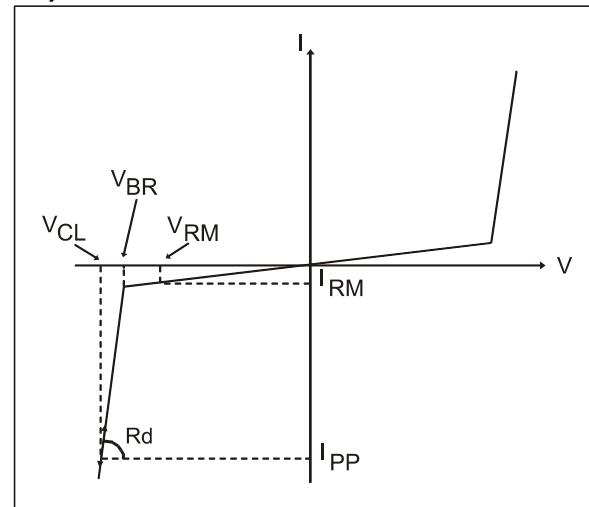
### ELECTRICAL SCHEMATIC & PIN CONFIGURATION



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### ELECTRICAL CHARACTERISTICS (T<sub>amb</sub> = 25°C)

Symbol	Parameter
V <sub>RM</sub>	Stand-off voltage
V <sub>BR</sub>	Breakdown voltage
V <sub>CL</sub>	Clamping voltage
I <sub>RM</sub>	Leakage current
I <sub>PP</sub>	Peak pulse current
$\alpha T$	Voltage temperature coefficient
C	Capacitance
R <sub>d</sub>	Dynamic resistance
V <sub>F</sub>	Forward voltage drop



### ABSOLUTE MAXIMUM RATING @ 25°C

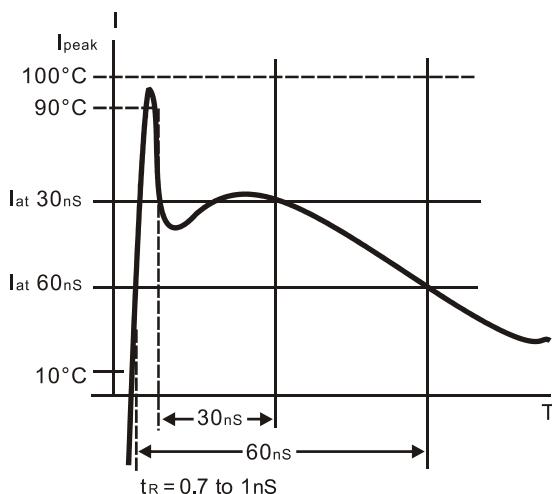
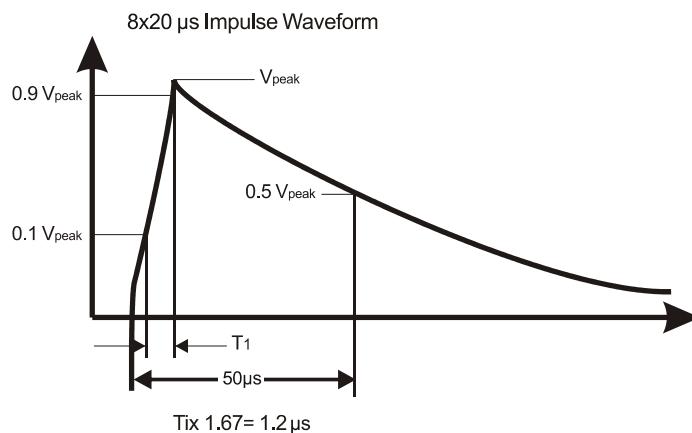
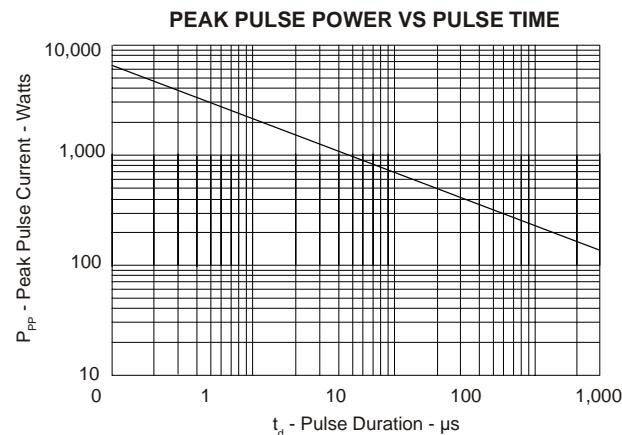
Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu s$ )	P <sub>pp</sub>	500	Watts
Operating Temperature	T <sub>J</sub>	-55 to +150	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C

### ELECTRICAL CHARACTERISTICS

	Reverse Stand-off Voltage	Min V <sub>br</sub> @ 1mA	Max Clamping Voltage @I <sub>pp</sub> =1A	Max Clamping Voltage @I <sub>pp</sub> =10A	Leakage Current @ VRWM	Max. Cap. @0V, 1 MHz
	V <sub>RM</sub>	V <sub>BR</sub> (min)	V <sub>c</sub>	V <sub>c</sub>	I <sub>R</sub>	C <sub>j</sub>
	Volts	Volts	Volts	Volts	μA	pf
<b>UMD16LC05B</b>	5	6	9.8	12.5	20	15
<b>UMD16LC08B</b>	8	8.5	13.4	16.6	10	15
<b>UMD16LC12B</b>	12	13.3	19.0	23.5	2	15
<b>UMD16LC15B</b>	15	16.7	25.5	29.5	2	15

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### TYPICAL CHARACTERISTICS



Level	First Peak Current (A)	Peak Current at 30 ns (A)	Peak Current at 60 ns (A)	Test Voltage (Contact Discharge) (kV)	Test Voltage (Air Discharge) (kV)
1	7.5	4	8	2	2
2	15	8	4	4	4
3	22.5	12	6	6	8
4	30	16	8	8	15

**IEC 1000-4-2 ESD WAVEFORM & DISCHARGE PARAMETERS**

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### PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE		PACKAGE DIMENSIONS		
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.80	10.01	0.386	0.394
B	3.81	3.99	0.150	0.157
C	1.52	1.73	0.060	0.068
D	0.36	0.48	0.014	0.019
F	0.58	0.74	0.023	0.029
G	1.27 BSC	1.27 BSC	0.05 BSC	0.05 BSC
J	0.18	0.25	0.007	0.010
K	0.10	0.20	0.004	0.008
P	5.84	6.20	0.230	0.244
R	0.25	0.41	0.010	0.016
MOUNTING PAD		NOTES		
		1. - T - = Seating Plane and Datum Surface. 2. Dimensions "A" and "B" are Datum. 3. Dimensions "A" and "B" do not include mold protrusions. 4. Maximum mold protrusion is 0.015" (0.380 mm) per side. 5. Dimensioning and tolerances per ANSI Y14.5M, 1982.		

### ORDERING INFORMATION

Ordering Part Number	Package	T & P	Polarity
UMD16LC05B through UMD16LC15B	SO - 16	EIA - 481	Bi-Directional

### TAPE & REEL SPECIFICATIONS

Ordering Part Number	Diode Size (in mm)	Qty Per Tube
UMD16LC05B through UMD16LC15B	9.9mm ± 0.1x 6.0mm± 0.2	48 pcs/Tube