

Small Signal Product

Ultra Low Capacitance ESD Protection Array

FEATURES

- Meet IEC61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- Meet IEC61000-4-4 (EFT) rating. 40A (5/50ns)
- Protects two directional I/O lines
- Working voltage: 5V
- Low leakage, low operating and clamping voltage
- Ultra low capacitance
- Pb free version and RoHS compliant
- Packing code with suffix "G" means green compound (halogen-free)

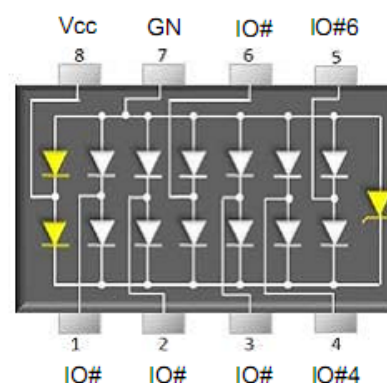


MSOP-08



MECHANICAL DATA

- Case: MSOP-08 small outline plastic package
- Terminal: Matte tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- Molding Compound Flammability Rating: UL 94V-0
- High temperature soldering guaranteed : 260°C/10s
- Weight: 25 $\pm$ 0.5 mg
- Marking code: UC68M



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak Pulse Power (tp=8/20μs waveform)	P _{PP}	200	W
Peak Pulse Current (tp=8/20μs)	I _{PP}	6	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 15	KV
ESD per IEC 61000-4-2 (Contact)		± 8	
Junction and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

PARAMETER		SYMBOL	MIN	MAX	UNIT
Reverse Stand-Off Voltage		V _{RWM}	-	5	V
Reverse Breakdown Voltage	I _R = 1 mA	V _(BR)	6.5	-	V
Reverse Leakage Current	V _R = 5 V	I _R	-	0.5	μA
Clamping Voltage	I _{PP} = 1 A	V _C	-	9.8	V
	I _{PP} = 6 A		-	15	
Junction Capacitance	V _R = 0 V , f = 1.0 MHz	C _J	0.5		pF

Small Signal Product

RATINGS AND CHARACTERISTICS CURVES

($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 Admissible Power Dissipation Curve

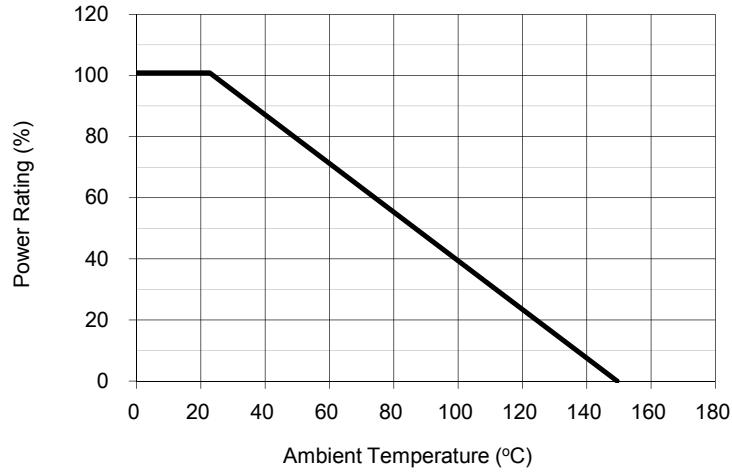


Fig. 2 Pulse Waveform

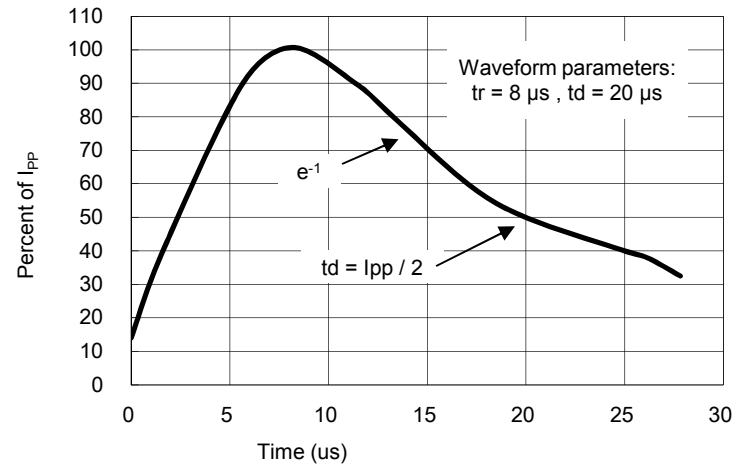


Fig. 3 Clamping Voltage VS. Peak Pulse Current

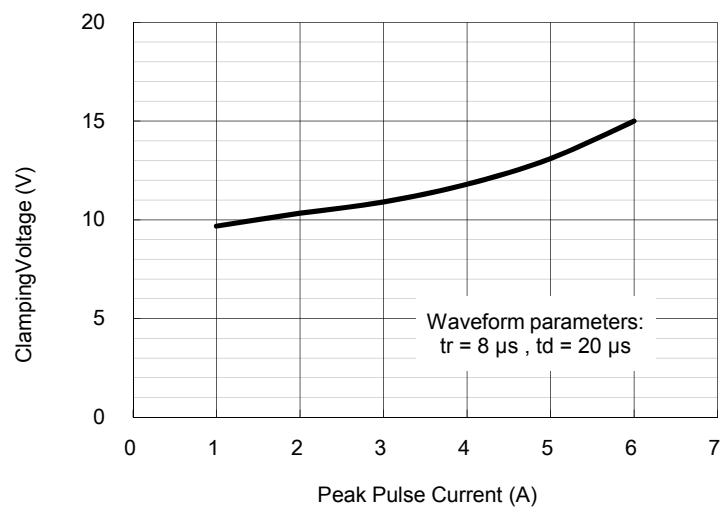
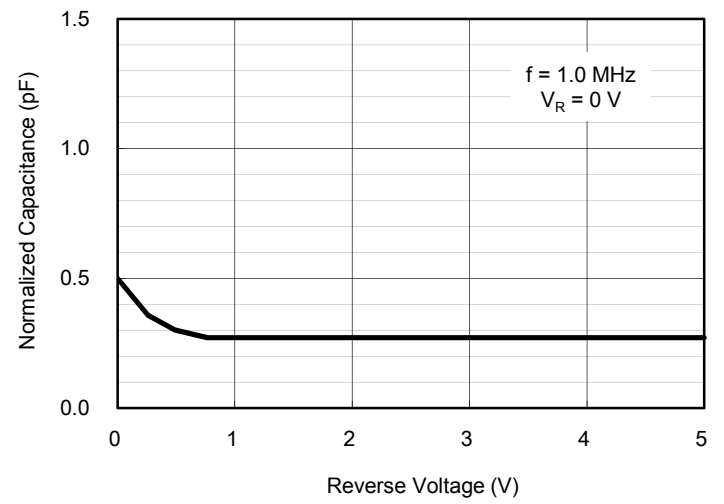


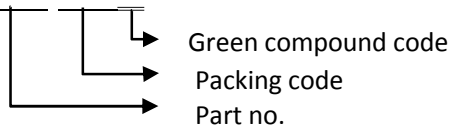
Fig. 4 Typical Junction Capacitance



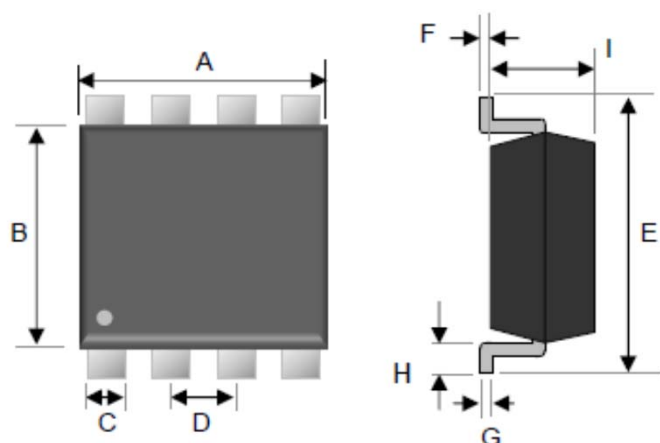
Small Signal Product

ORDER INFORMATION (EXAMPLE)

TESDM5V0A RMG

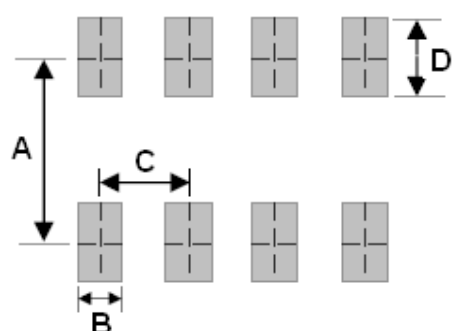


PACKAGE OUTLINE DIMENSIONS
MSOP-08



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.90	3.10	0.114	0.122
B	2.90	3.10	0.114	0.122
C	0.22	0.38	0.009	0.015
D	0.65 REF		0.0256 REF	
E	4.75	5.05	0.187	0.199
F	-	0.25	-	0.010
G	0.13	0.23	0.005	0.009
H	0.40	0.66	0.016	0.026
I	0.75	0.95	0.030	0.037

SUGGEST PAD LAYOUT



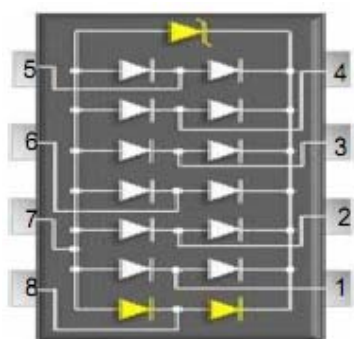
DIM.	Unit (mm)	Unit (inch)
	Typ.	Typ.
A	4.80	0.189
B	0.41	0.016
C	0.65	0.026
D	1.02	0.040

Note: 1. The suggested land pattern dimensions have been provided for reference only, as actual pad layouts may vary depending on application.

Small Signal Product

APPLICATIONS INFORMATION

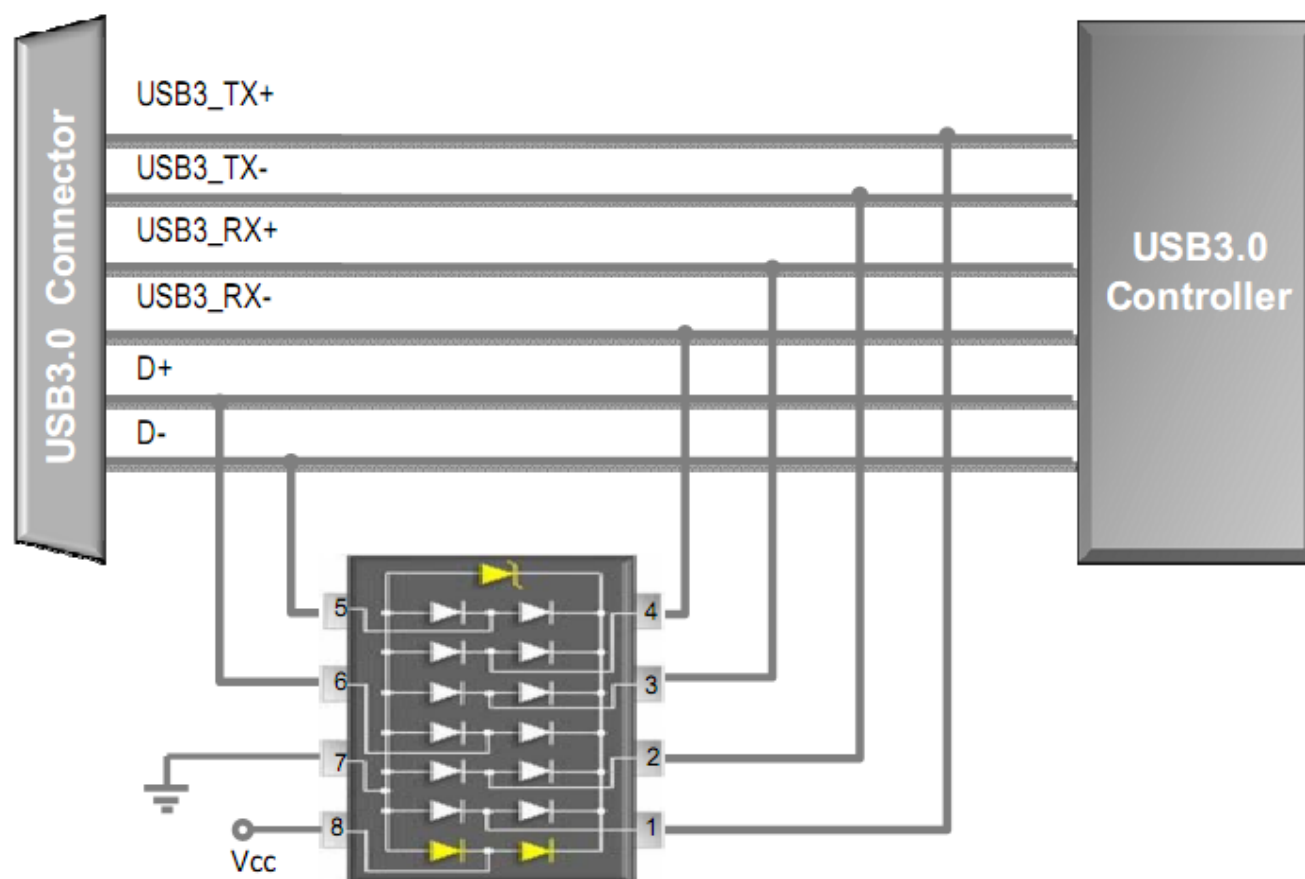
- Applications for Microprocess based equipment
- IEEE1394 Firewire Ports
- ATM Interfaces
- High Definition Multi-Media Interface(HDMI)
- Digital Video Interface (DVI)
- Video Graphs Cards
- Designed for protection of high-speed interfaces such as USB3.0
- Ultra low capacitance between the pairs while being rated to handle $>\pm 8\text{kV}$, ESD contact discharges and $>\pm 15\text{kV}$ air discharge
- TESDM5V0A is ultra low capacitance ESD protection array designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD, CDE (Cable Discharge Events), and EFT(electrical fast transients)



Pin	Definition
1, 2, 3, 4, 5, 6	I/O Lines
7	Ground
8	Vcc

TYPICAL APPLICATION

Schematic Diagram for USB 3.0 Protection



Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.