ESDR0544M

Transient Voltage Suppressors

Low Capacitance ESD Protection for High Speed Data

The ESDR0544M transient voltage suppressor is designed to protect high speed data lines from ESD. Ultra−low capacitance and low ESD clamping voltage make this device an ideal solution for protecting voltage sensitive high speed data lines. The flow−through style package allows for easy PCB layout and matched trace lengths necessary to maintain consistent impedance between high speed differential lines such as HDMI.

Features

- Low Capacitance (0.9 pF Max Between I/O Lines and Ground)
- ESD Rating of Class 3B (Exceeding 8 kV) per Human Body model and Class C (Exceeding 400 V) per Machine Model
- Protection for the Following IEC Standards:
  IEC 61000−4−2 (8 kV Contact)
- UL Flammability Rating of 94 V−0
- This is a Pb−Free Device

Typical Applications

- HDMI
- DVI
- Display Port
- MDDI
- eSATA

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Operating Junction Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	T_{stg}	−55 to +150	°C
Lead Solder Temperature − Maximum (10 Seconds)	T_L	260	°C
IEC 61000−4−2 Contact (ESD)	ESD	8.0	kV

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

See Application Note AND8308/D for further description of survivability specs.

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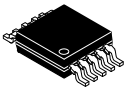
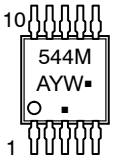
http://onsemi.com

MARKING DIAGRAM



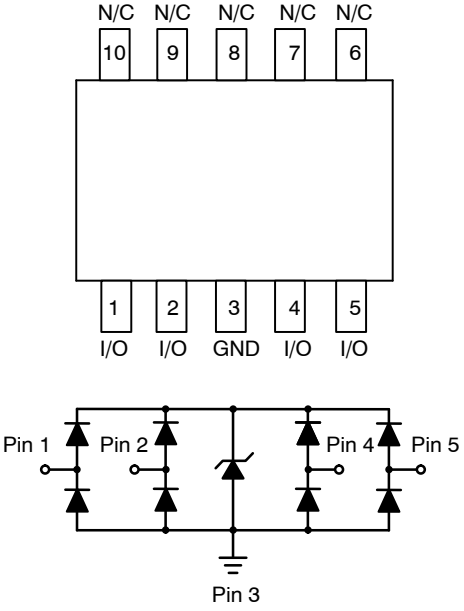
Micro−10
DM SUFFIX
CASE 846B



A = Assembly Location
Y = Year
W = Work Week
▪ = Pb−Free Package

(Note: Microdot may be in either location)

PIN CONFIGURATION AND SCHEMATIC



ORDERING INFORMATION

Device	Package	Shipping
ESDR0544MDMR4G	Micro−10 (Pb−Free)	1000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

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ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

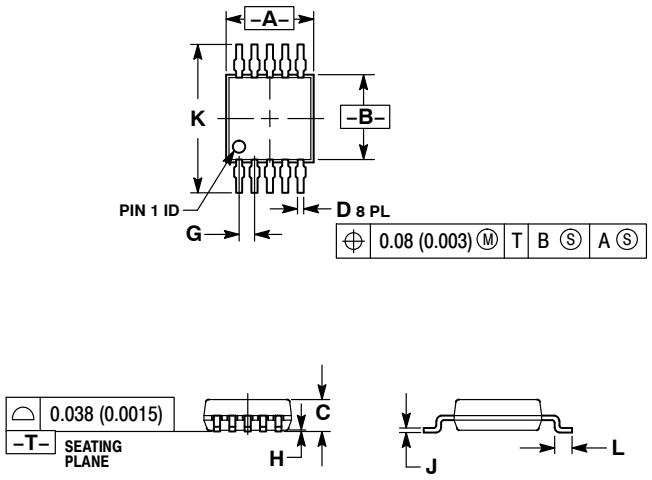
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	(Note 1)			5.0	V
Breakdown Voltage	V_{BR}	I_T = 1 mA, (Note 2)	6.0			V
Reverse Leakage Current	I_R	V_{RWM} = 5 V			1.0	μA
Junction Capacitance	C_J	V_R = 0 V, f = 1 MHz between I/O Pins and GND		0.7	0.9	pF
Junction Capacitance	C_J	V_R = 0 V, f = 1 MHz between I/O Pins		0.3	0.7	pF

1. TVS devices are normally selected according to the working peak reverse voltage (V_{RWM}), which should be equal or greater than the DC or continuous peak operating voltage level.
2. V_{BR} is measured at pulse test current I_T.

ESDR0544M

PACKAGE DIMENSIONS

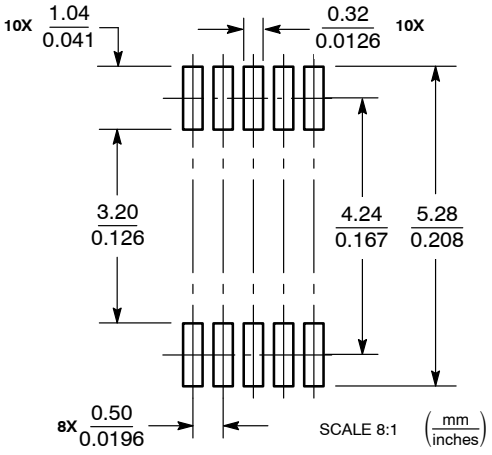
Micro−10
CASE 846B−03
ISSUE D



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION “A” DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS OR GATE BURRS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.
4. DIMENSION “B” DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.25 (0.010) PER SIDE.
5. 846B−01 OBSOLETE. NEW STANDARD 846B−02

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	2.90	3.10	0.114	0.122
B	2.90	3.10	0.114	0.122
C	0.95	1.10	0.037	0.043
D	0.20	0.30	0.008	0.012
G	0.50 BSC		0.020 BSC	
H	0.05	0.15	0.002	0.006
J	0.10	0.21	0.004	0.008
K	4.75	5.05	0.187	0.199
L	0.40	0.70	0.016	0.028

SOLDERING FOOTPRINT*



*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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