

ESD11L5.0DT5G

Transient Voltage Suppressors

ESD Protection Diodes with Ultra-Low Capacitance

The ESD11L5.0DT5G is designed to protect voltage sensitive components from damage due to ESD in applications that require ultra low capacitance to preserve signal integrity. Excellent clamping capability, low leakage and fast response time are combined with an ultra low diode capacitance of 0.5 pF to provide best in class protection from IC damage due to ESD. The ultra small SOT-1123 package is ideal for designs where board space is at a premium. The ESD11L5.0DT5G can be used to protect two uni-directional lines or one bi-directional line. When used to protect one bi-directional line, the effective capacitance is 0.25 pF. Because of its low capacitance, it is well suited for protecting high frequency signal lines such as USB2.0 high speed and antenna line applications.

Specification Features:

- Low Capacitance 0.5 pF Typical
- Low Clamping Voltage
- Small Body Outline Dimensions:
0.039" x 0.024" (1.0 mm x 0.6 mm)
- Low Body Height: 0.015" (0.37 mm)
- Stand-off Voltage: 5 V
- Low Leakage
- Response Time is Typically < 1.0 ns
- IEC61000-4-2 Level 4 ESD Protection
- This is a Pb-Free Device

Mechanical Characteristics:

CASE: Void-free, transfer-molded, thermosetting plastic

Epoxy Meets UL 94 V-0

LEAD FINISH: 100% Matte Sn (Tin)

MOUNTING POSITION: Any

QUALIFIED MAX REFLOW TEMPERATURE: 260°C

Device Meets MSL 1 Requirements

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Contact		±10	kV
Total Power Dissipation on FR-5 Board (Note 1) @ T _A = 25°C	P _D	150	mW
Storage Temperature Range	T _{stg}	-55 to +150	°C
Junction Temperature Range	T _J	-55 to +125	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260	°C

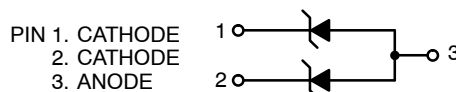
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0 x 0.75 x 0.62 in.



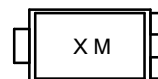
ON Semiconductor®

<http://onsemi.com>



SOT-1123
CASE 524AA

MARKING DIAGRAM



X = Specific Device Code
M = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
ESD11L5.0DT5G	SOT-1123 (Pb-Free)	8000/Tape & Reel

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

DEVICE MARKING INFORMATION

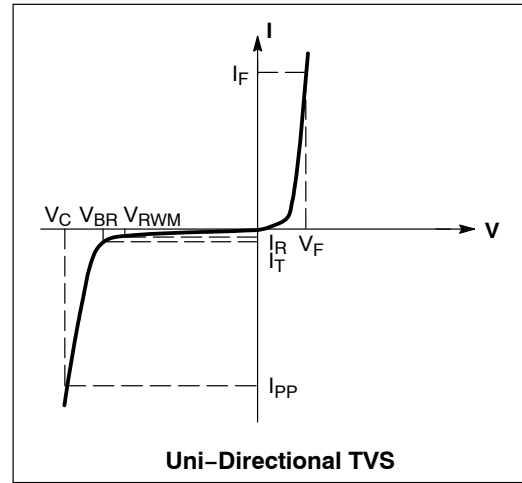
See specific marking information in the device marking column of the Electrical Characteristics tables starting on page 2 of this data sheet.

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ELECTRICAL CHARACTERISTICS

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

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{pk}	Peak Power Dissipation
C	Capacitance @ $V_R = 0\text{ V}$ and $f = 1.0\text{ MHz}$



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 1.1\text{ V Max.}$ @ $I_F = 10\text{ mA}$ for all types)

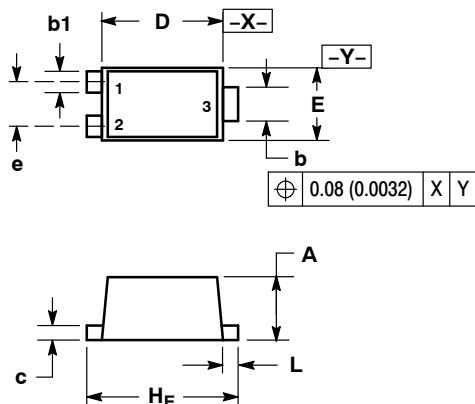
Device	Device Marking	V_{RWM} (V)	I_R (μA) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)	I_T	C (pF), uni-directional (Note 3)		C (pF), bi-directional (Note 4)	
		Max	Max	Min	mA	Typ	Max	Typ	Max
ESD11L5.0DT5G	6	5.0	1.0	5.4	1.0	0.5	0.9	0.25	0.45

2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C .
3. Uni-directional capacitance at $f = 1\text{ MHz}$, $V_R = 0\text{ V}$, $T_A = 25^\circ\text{C}$ (pin1 to pin 3; pin 2 to pin 3).
4. Bi-directional capacitance at $f = 1\text{ MHz}$, $V_R = 0\text{ V}$, $T_A = 25^\circ\text{C}$ (pin1 to pin 2).

ESD11L5.0DT5G

PACKAGE DIMENSIONS

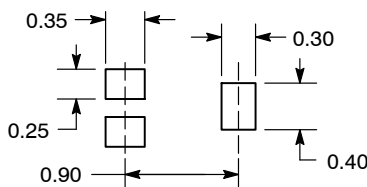
SOT-1123
CASE 524AA-01
ISSUE B



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETERS.
 3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.34	0.37	0.40	0.013	0.015	0.016
b	0.15	0.22	0.28	0.006	0.009	0.011
b1	0.10	0.15	0.20	0.004	0.006	0.008
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
e	0.35	---	0.40	0.014	---	0.016
HE	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006

SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

*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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