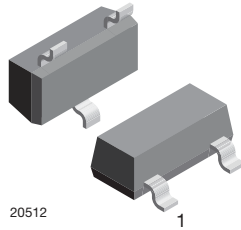
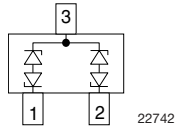
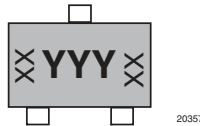


Bidirectional Symmetrical (BiSy) Low Capacitance, Dual-Line ESD Protection Diode in SOT-23


MARKING (example only)


YYY = type code (see table below)

XX = date code

DESIGN SUPPORT TOOLS AVAILABLE

FEATURES

- For CAN applications
- Small SOT-23 package
- 2-line ESD protection
- Working range ± 16 V
- Low leakage current $I_R < 0.05 \mu\text{A}$
- Low load capacitance $C_D < 18.5 \text{ pF}$
- ESD immunity acc. IEC 61000-4-2 ± 30 kV contact discharge ± 30 kV air discharge
- ESD capability according to AEC-Q101: human body model: class H3B: > 8 kV
- e3 - pins plated with tin (Sn)
- AEC-Q101 qualified available
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

ORDERING INFORMATION							
PART NUMBER (EXAMPLE)	ENVIRONMENTAL AND QUALITY CODE				PACKAGING CODE		ORDERING CODE (EXAMPLE)
	AEC-Q101 QUALIFIED	RoHS-COMPLIANT + LEAD (Pb)-FREE TERMINATIONS		TIN PLATED	3K PER 7" REEL (8 mm TAPE) 15K/BOX = MOQ	10K PER 13" REEL (8 mm TAPE) 10K/BOX = MOQ	
		STANDARD	GREEN				
VCAN16A2-03S	-	E	-	3	-08	-	VCAN16A2-03S-E3-08
VCAN16A2-03S	H	E	-	3	-08	-	VCAN16A2-03SHE3-08
VCAN16A2-03S	-	E	-	3	-	-18	VCAN16A2-03S-E3-18
VCAN16A2-03S	H	E	-	3	-	-18	VCAN16A2-03SHE3-18

PACKAGE DATA						
DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
VCAN16A2-03S	SOT-23	16A	8.8 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C

ABSOLUTE MAXIMUM RATINGS					
PARAMETER	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Peak pulse current	$T_A = 25 \text{ }^\circ\text{C}$, acc. IEC 61000-4-5; $t_p = 8/20 \mu\text{s}$; single shot		I_{PPM}	5	A
Peak pulse power	$T_A = 25 \text{ }^\circ\text{C}$; pin 1 or 2 to pin 3; acc. IEC 61000-4-5; $t_p = 8/20 \mu\text{s}$; single shot		P_{PP}	145	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses, $T_A = 25 \text{ }^\circ\text{C}$		V_{ESD}	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses, $T_A = 25 \text{ }^\circ\text{C}$			± 30	kV
Operating temperature	Junction temperature		T_J	-55 to +150	$^\circ\text{C}$
Storage temperature			T_{STG}	-55 to +150	$^\circ\text{C}$



ELECTRICAL CHARACTERISTICS (pin 1 to 3, 3 to 1, 2 to 3, or 3 to 2) ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	$N_{channel}$	-	-	2	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}	-	-	16	V
Reverse voltage	At $I_R = 0.05\text{ }\mu\text{A}$	V_R	16	-	-	V
Reverse current	At $V_{RWM} = 16\text{ V}$	I_R	-	-	0.05	μA
Reverse breakdown voltage	At $I_R = 1\text{ mA}$	V_{BR}	17.1	18.6	20	V
Reverse clamping voltage	At $I_{PP} = 1\text{ A}$; $t_p = 8/20\text{ }\mu\text{s}$	V_C	-	20	23	V
	At $I_{PP} = I_{PPM} = 5.2\text{ A}$; $t_p = 8/20\text{ }\mu\text{s}$	V_C	-	25	28	V
Capacitance	At $V_R = 0\text{ V}$, $f = 1\text{ MHz}$	C_D	15	16.7	18.5	pF
	Diode capacitance matching at $V_R = 0\text{ V}$, $T_J = -40\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$ / C_{D13} vs. C_{D23}	C_D	-	-	1	pF

TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

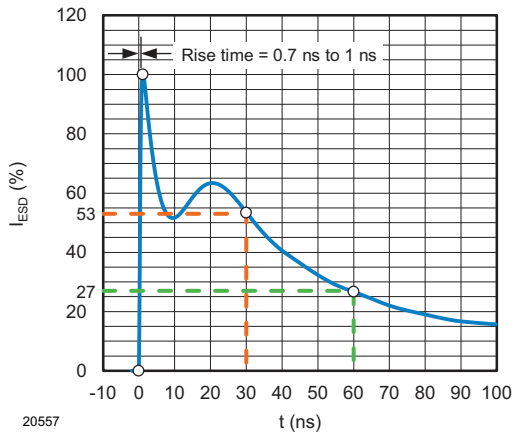


Fig. 1 - ESD Discharge Current Wave Form acc. IEC 61000-4-2 (330 Ω / 150 pF)

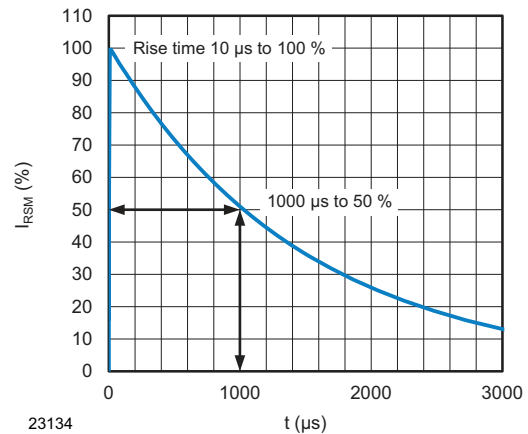


Fig. 3 - 10/1000 μs Peak Pulse Current Wave Form

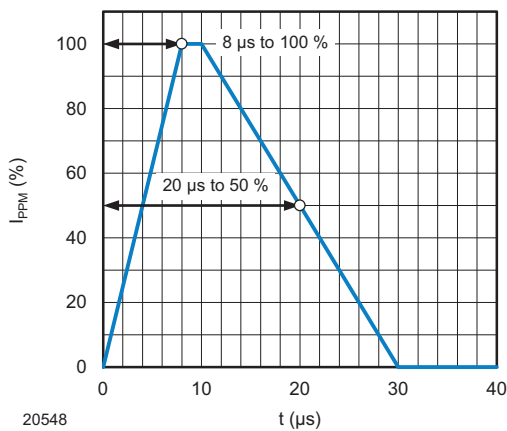


Fig. 2 - 8/20 μs Peak Pulse Current Wave Form acc. IEC 61000-4-5

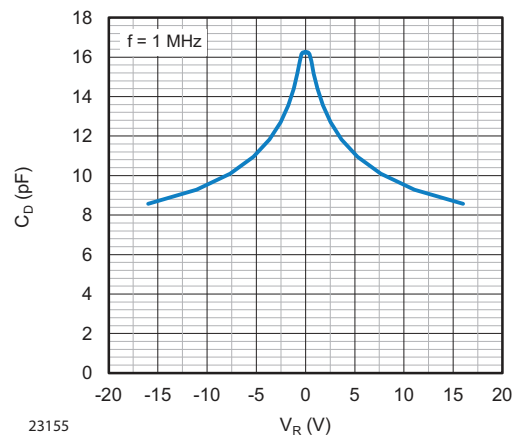


Fig. 4 - Typical Capacitance C_D vs. Reverse Voltage V_R

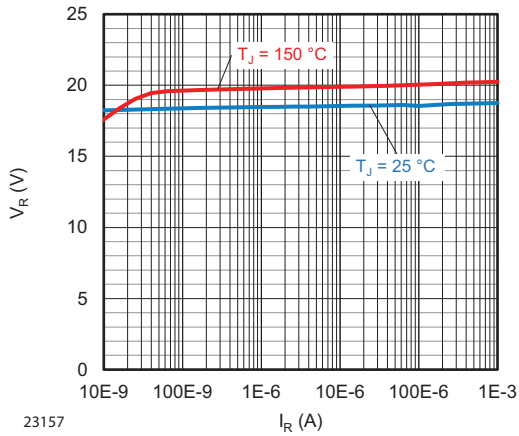


Fig. 5 - Typical Reverse Voltage V_R vs. Reverse Current I_R

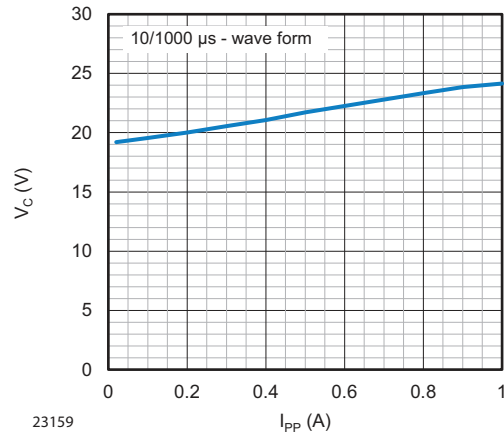


Fig. 7 - Typical Peak Clamping Voltage V_{C-TLP} vs. Peak Pulse Current I_{TLP}

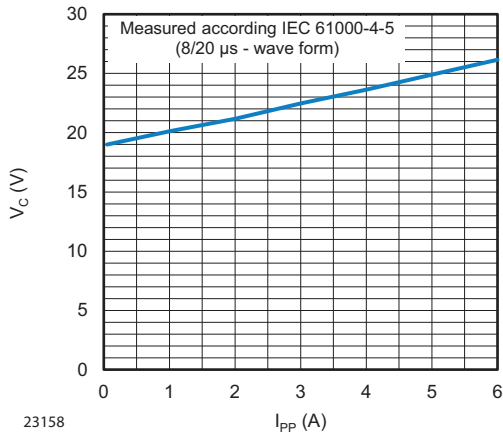


Fig. 6 - Typical Peak Clamping Voltage V_C vs. Peak Pulse Current I_{PP}

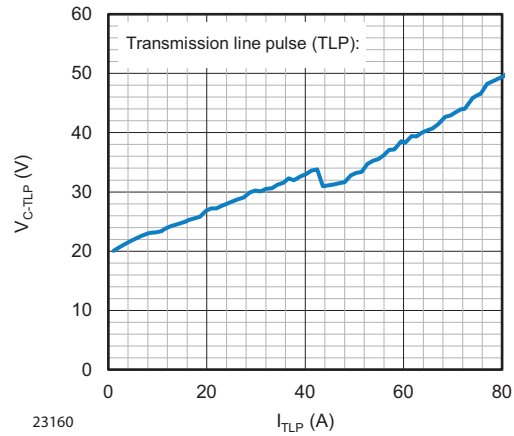
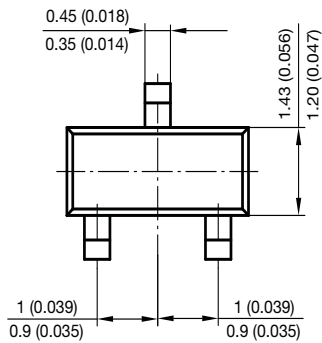
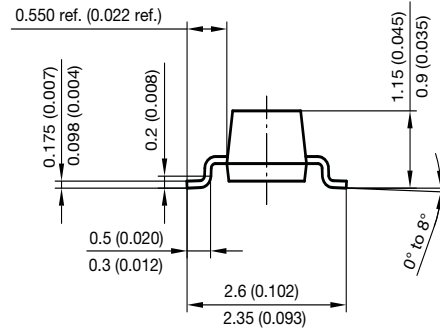
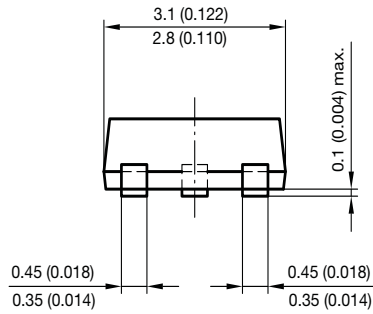


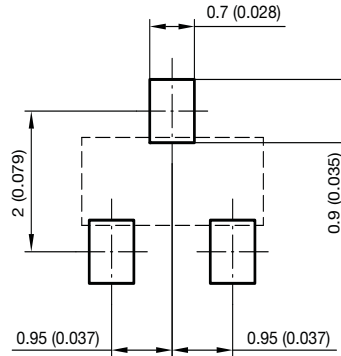
Fig. 8 - Typical Clamping Voltage V_{C-TLP} vs. Pulse Current I_{TLP}



PACKAGE DIMENSIONS in millimeters (inches) SOT-23

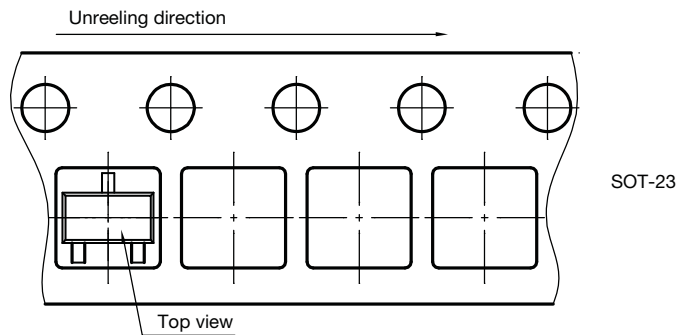


Foot print recommendation:



Document no.: 6.541-5014.01-4
Rev. 8 - Date: 23. Sep. 2009
17418

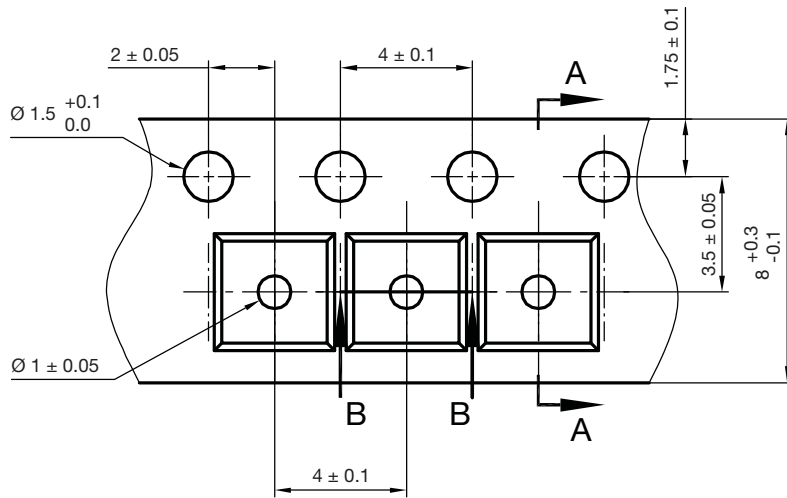
ORIENTATION IN CARRIER TAPE SOT-23



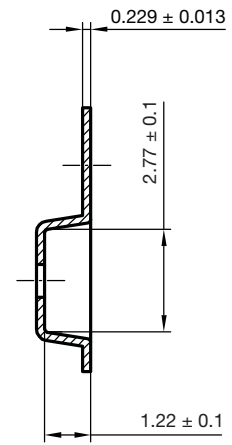
Orientation in carrier tape
SOT-23
S8-V-3929.01-006 (4)
04.02.2010
22607



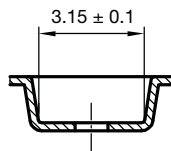
CARRIER TAPE SOT-23



A-A Section



B-B Section



Carrier tape SOT-23
Document no.: S8-V-3929.01-005 (4)
Created - Date: 04. Feb. 2010
22856



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