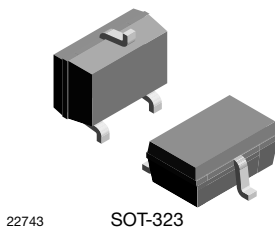
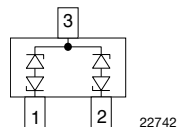


Bidirectional Symmetrical (BiSy) Low Capacitance, Dual-Line ESD Protection Diode in SOT-323

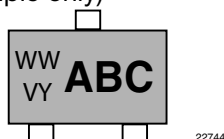


FEATURES

- For CAN applications
- Small SOT-323 package
- T_J max. = 175 °C
- 2-line ESD protection
- Working range ± 16 V
- Low leakage current $I_R < 0.05 \mu A$
- Low load capacitance $C_D < 18.5$ 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

MARKING (example only)



ABC = type code (see table below)

WW = date code working week

VY = date code year

LINKS TO ADDITIONAL RESOURCES



ORDERING INFORMATION

PART NUMBER (EXAMPLE)	ENVIRONMENTAL AND QUALITY CODE			REVISION CODE	PACKAGING CODE		ORDERING CODE (EXAMPLE)
	AEC-Q101 QUALIFIED (H)	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	
VCAN16A2-03G	-	E	3	-	08		VCAN16A2-03G-E3-08
VCAN16A2-03G	H	E	3	A	08		VCAN16A2-03GHE3A08
VCAN16A2-03G	-	E	3	-		18	VCAN16A2-03G-E3-18
VCAN16A2-03G	H	E	3	A		18	VCAN16A2-03GHE3A18

PACKAGE DATA

DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
VCAN16A2-03G	SOT-323	16A	5.2 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	$T_A = 25$ °C, acc. IEC 61000-4-5; $t_p = 8/20 \mu s$; single shot	I_{PPM}	5	A
Peak pulse power	$T_A = 25$ °C; pin 1 or 2 to pin 3; acc. IEC 61000-4-5; $t_p = 8/20 \mu s$; single shot	P_{PP}	140	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses, $T_A = 25$ °C	V_{ESD}	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses, $T_A = 25$ °C		± 30	kV
Operating temperature	Junction temperature	T_J	-55 to +175	°C
Storage temperature		T_{STG}	-55 to +175	°C

ELECTRICAL CHARACTERISTICS (pin 1 to 3, 3 to 1, 2 to 3, or 3 to 2)

($T_{\text{amb}} = 25\text{ }^{\circ}\text{C}$, 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 $I_{\text{R}} = 0.05 \mu\text{A}$	V_{R}	16	-	-	V
Reverse current	At $V_{\text{RWM}} = 16 \text{ V}$	I_{R}	-	-	0.05	μA
Reverse breakdown voltage	At $I_{\text{R}} = 1 \text{ mA}$	V_{BR}	17.1	18.6	20	V
Reverse clamping voltage	At $I_{\text{PP}} 1 \text{ A}$; $t_{\text{p}} = 8/20 \mu\text{s}$	V_{C}	-	20	23	V
	At $I_{\text{PP}} = I_{\text{PPM}} = 5 \text{ A}$; $t_{\text{p}} = 8/20 \mu\text{s}$	V_{C}	-	25	28	V
Capacitance	At $V_{\text{R}} = 0 \text{ V}$, $f = 1 \text{ MHz}$	C_{D}	15	16.7	18.5	pF
	Diode capacitance matching at $V_{\text{R}} = 0 \text{ V}$, C_{D13} vs. C_{D23}	C_{D}	-	-	1	pF

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

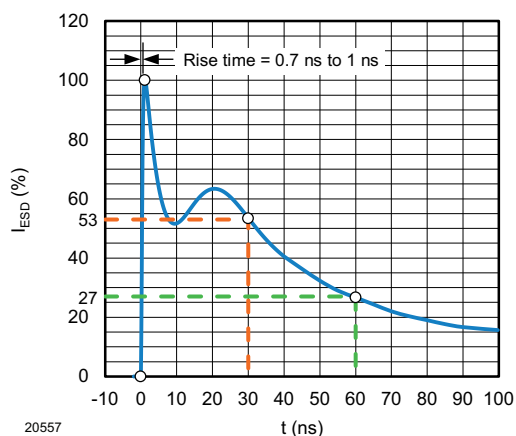


Fig. 1 - ESD Discharge Current Wave Form
acc. IEC 61000-4-2 (330 Ω / 150 pF)

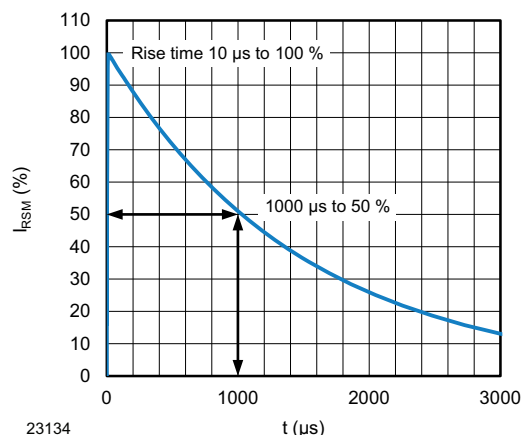


Fig. 3 - 10/1000 μ s Peak Pulse Current Wave Form

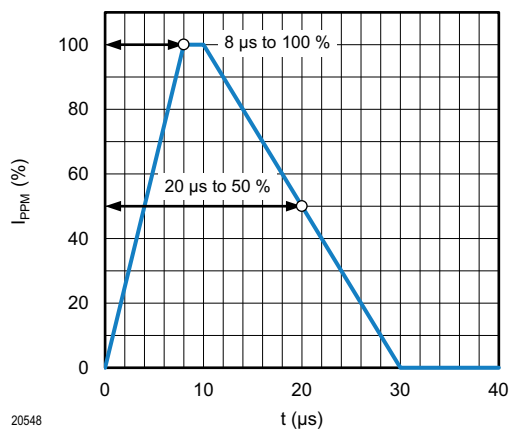


Fig. 2 - 8/20 μ s Peak Pulse Current Wave Form
acc. IEC 61000-4-5

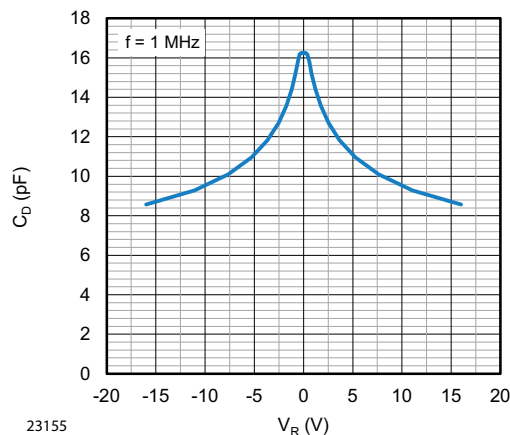
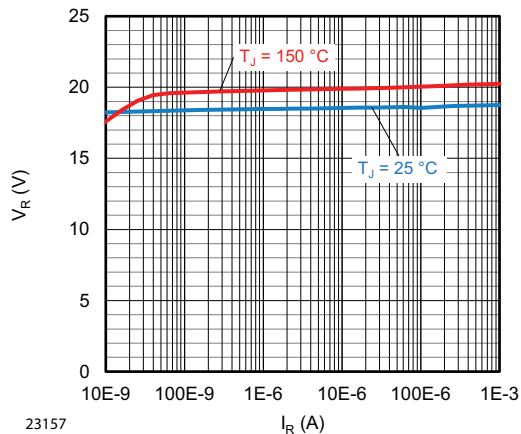
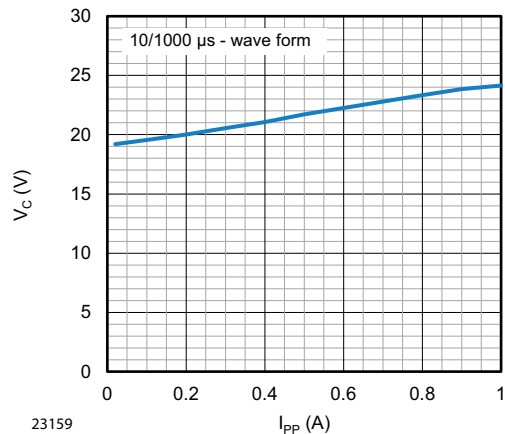
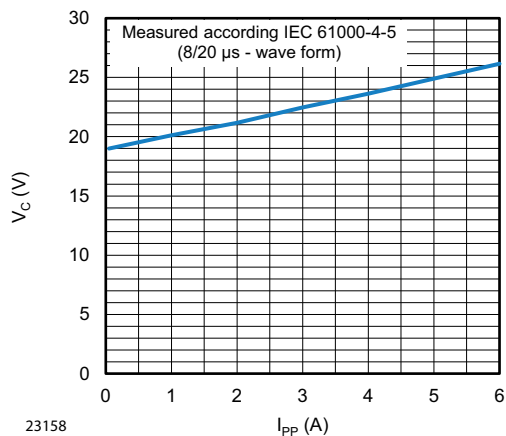
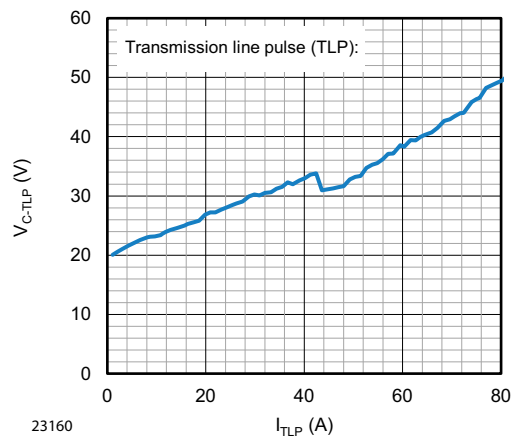
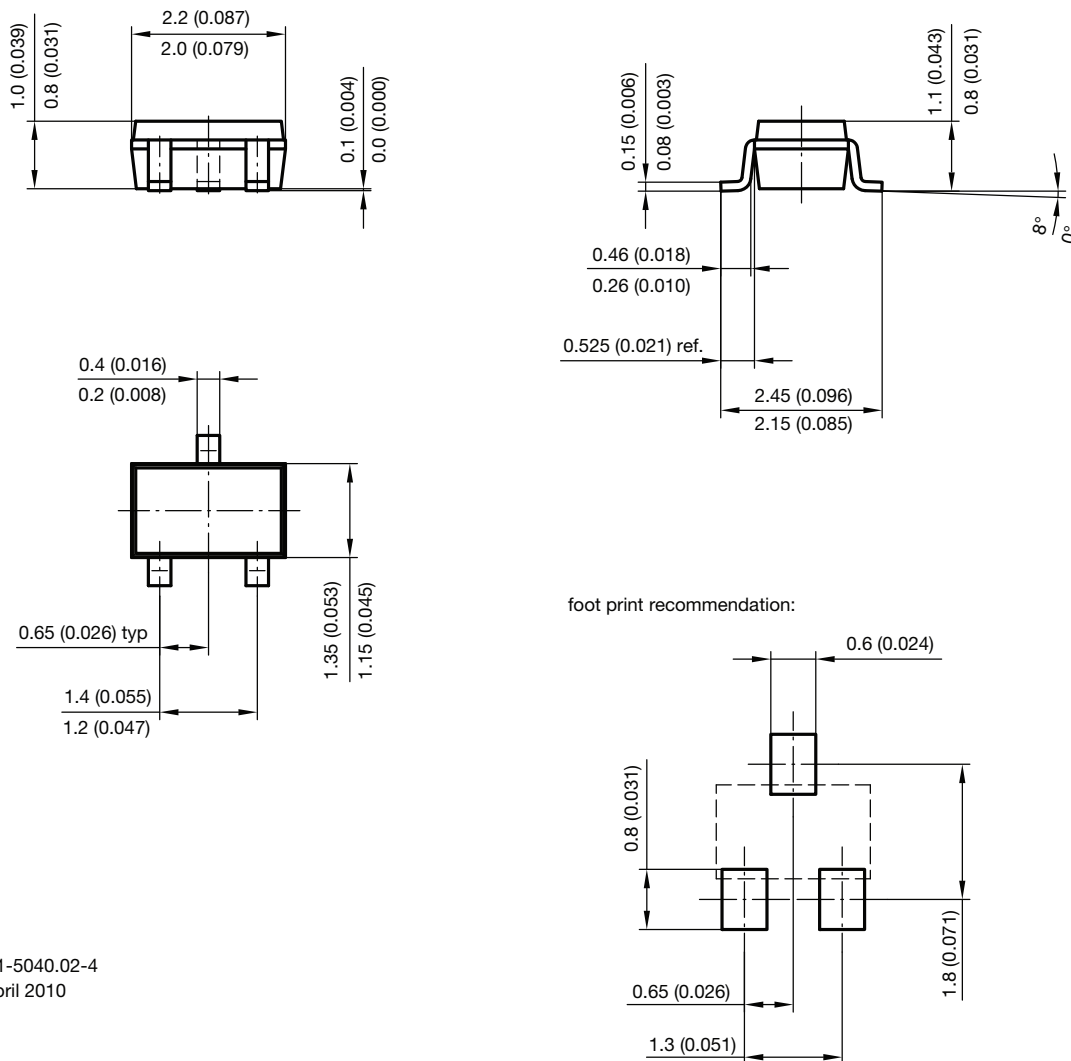
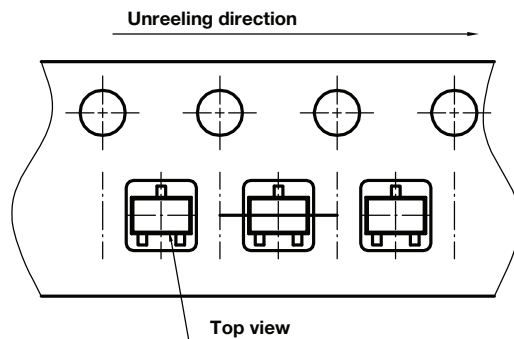


Fig. 4 - Typical Capacitance C_D vs. Reverse Voltage V_R


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}

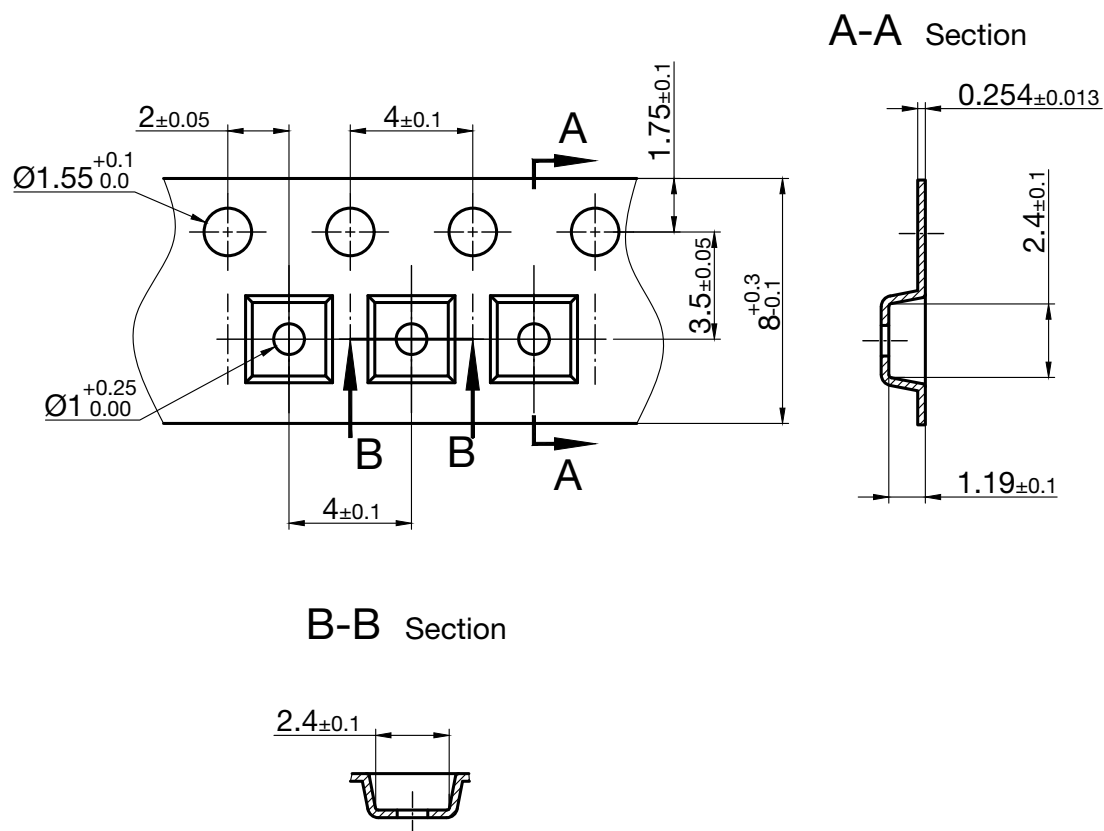
PACKAGE DIMENSIONS in millimeters (inches) **SOT-323**


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Rev. 1 - Date: 06. April 2010
21113

ORIENTATION IN CARRIER TAPE SOT-323


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Created - Date: 09. Feb. 2010
22761

CARRIER TAPE SOT-323



Document No.S8-V-3717.08-002 (4)
Rev. 20.01.2025
23260



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