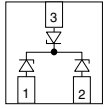
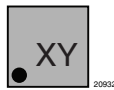


# Bidirectional Symmetrical (BiSy) Low Capacitance, Dual-Line ESD Protection Diode in DFN1110-3A


**DFN1110-3A**
**MARKING** (example only)


Dot = pin marking  
 X = date code  
 Y = type code (see table below)

**FEATURES**

- For CAN FD Bus applications
- Small DFN1110-3A
- 2-line ESD protection
- Working range  $\pm 24$  V
- Low leakage current  $I_R < 0.05$   $\mu$ A
- Low load capacitance  $C_D < 6$  pF (at  $V_R = 5$  V)
- ESD immunity acc. IEC 61000-4-2  $\pm 30$  kV contact discharge  $\pm 30$  kV air discharge
- ESD capability according to AEC-Q101: human body model: class H3B:  $> 8$  kV
- e3 - pins side wall plated with tin (Sn)
- AOI capable
- AEC-Q101 qualified available
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**LINKS TO ADDITIONAL RESOURCES**

**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	10K PER 7" REEL (8 mm TAPE) 10K = MOQ		
		GREEN				
VCAN24A2-HT5	-	G	3	-08		VCAN24A2-HT5-G3-08
VCAN24A2-HT5	H	G	3	-08		VCAN24A2-HT5HG3-08

**PACKAGE DATA**

DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
VCAN24A2-HT5	DFN1110-3A	A	1.43 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	$I_{PPM}$	2.5	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	$P_{PP}$	100	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses, $T_A = 25$ °C	$V_{ESD}$	$\pm 30$	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses, $T_A = 25$ °C		$\pm 30$	kV
Operating temperature	Junction temperature	$T_J$	-55 to +150	°C
Storage temperature		$T_{STG}$	-55 to +150	°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	$V_{RWM}$	-	-	24	V
Reverse voltage	At $I_R = 0.05\text{ }\mu\text{A}$	$V_R$	24	-	-	V
Reverse current	At $V_{RWM} = 24\text{ V}$	$I_R$	-	-	0.05	$\mu\text{A}$
Reverse breakdown voltage	At $I_R = 1\text{ mA}$	$V_{BR}$	26.5	28	29.5	V
Reverse clamping voltage	At $I_{PP} = 1\text{ A}$ ; $t_p = 8/20\text{ }\mu\text{s}$	$V_C$	-	-	35	V
	At $I_{PP} = I_{PPM} = 2.5\text{ A}$ ; $t_p = 8/20\text{ }\mu\text{s}$	$V_C$	-	36	41	V
Capacitance	At $V_R = 0\text{ V}$ , $f = 1\text{ MHz}$	$C_D$	-	7.8	9.4	pF
	At $V_R = 5\text{ V}$ , $f = 1\text{ MHz}$	$C_D$	-	5	6	pF
	Diode capacitance matching at $V_R = 5\text{ V}$ , $C_{D13}$ vs. $C_{D23}$	$dC_D$	-	-	0.12	pF

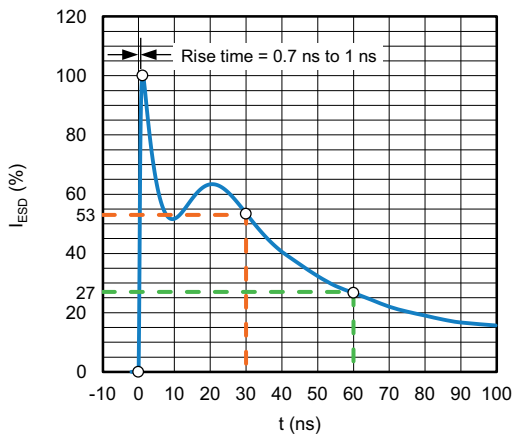
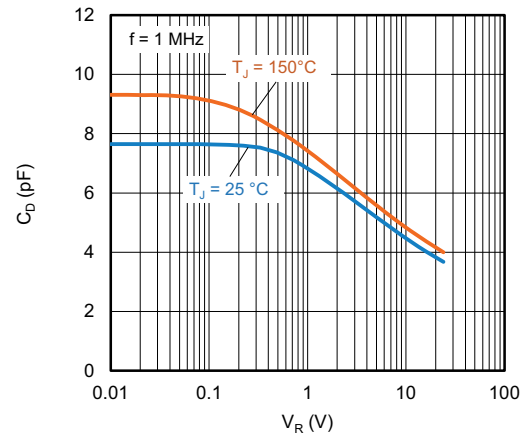

 Fig. 1 - ESD Discharge Current Wave Form acc. IEC 61000-4-2 (330  $\Omega$  /150 pF)


Fig. 3 - Typical Capacitance vs. Reverse Voltage

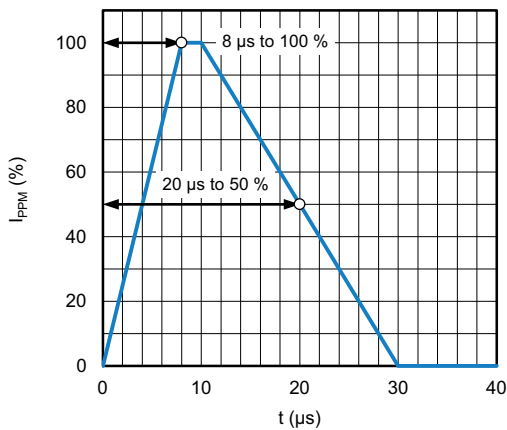
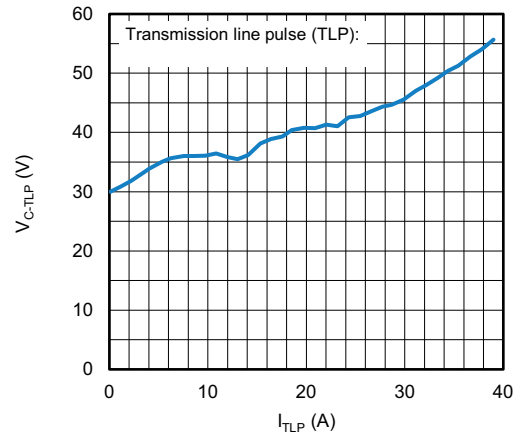

 Fig. 2 - 8/20  $\mu\text{s}$  Peak Pulse Current Wave Form acc. IEC 61000-4-5


Fig. 4 - Typical Clamping Voltage vs. Peak Pulse Current

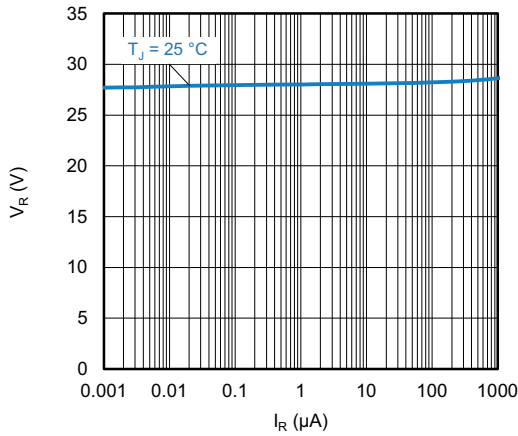


Fig. 5 - Typical Reverse Voltage vs. Reverse Current

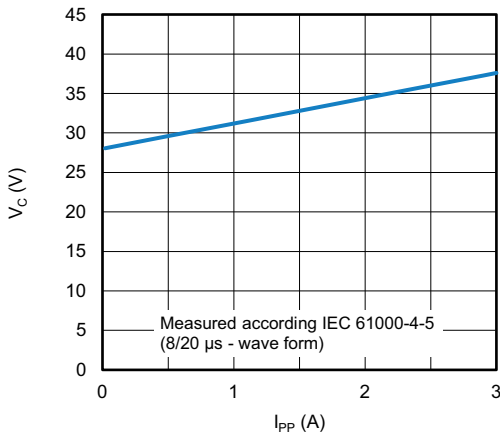
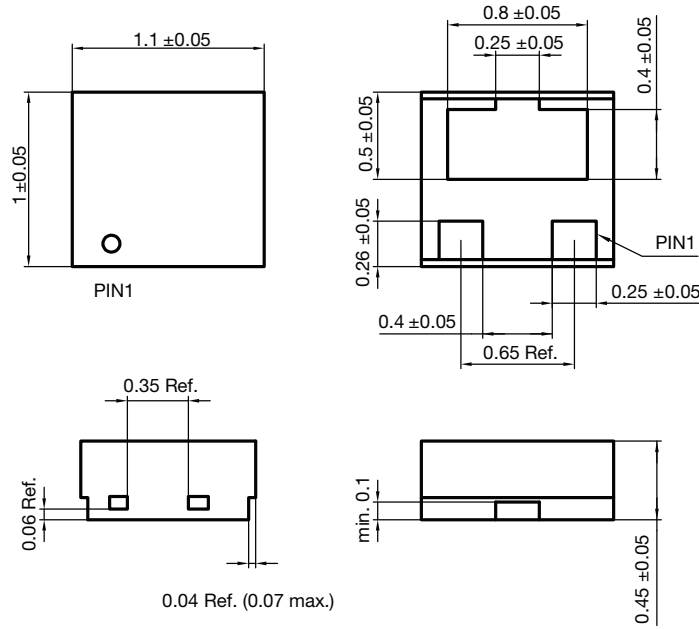


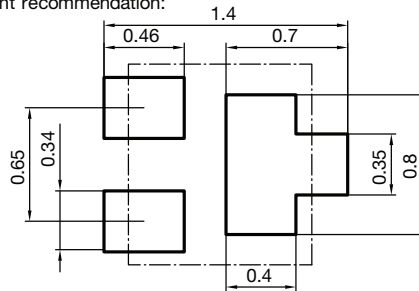
Fig. 6 - Typical Peak Clamping Voltage vs. Peak Pulse Current



**PACKAGE DIMENSIONS** in millimeters (inches)



foot print recommendation:

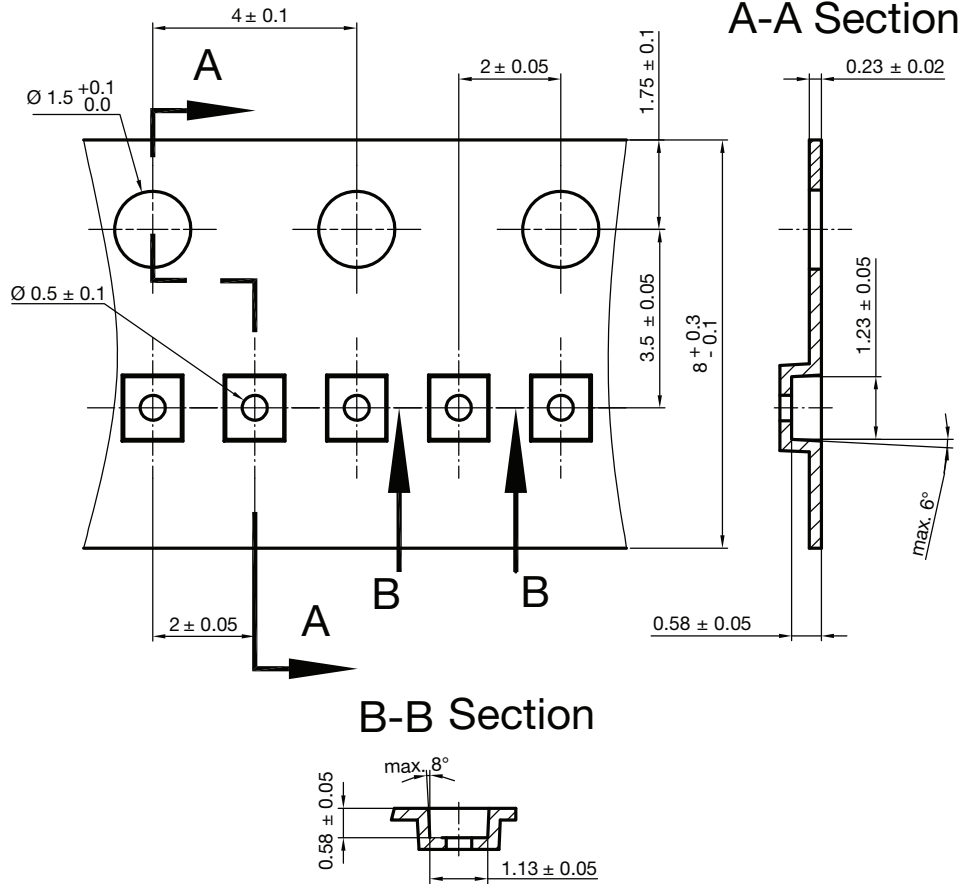


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Package name: DFN1110-3A

Created - Date: 04-Apr-2019

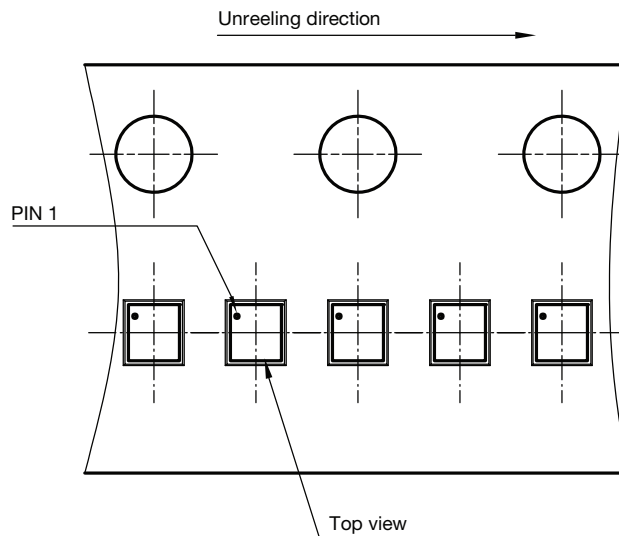
**CARRIER TAPE DFN1110-3A**



Document no: S8-V-3906.04-065 (4)  
 Package name: DFN1110-3A  
 Created date: 28.10.2019

surface resistance:  $10^5 - 10^{11} \frac{\text{OHMS}}{\text{SQ}}$   
 Cumulative tolerances of 10 sprocket holes is  $\pm 0.2$  mm

**ORIENTATION IN CARRIER TAPE DFN1110-3A**



Document no: S8-V-3906.04-066 (4)  
 Package name: DFN1110-3A  
 Created date: 28.10.2019



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