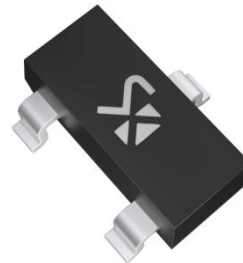




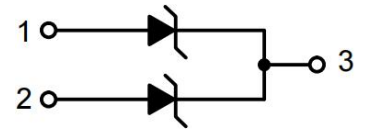
Bidirectional TVS Diode Array

Description

The NUP1105 has been designed to protect LIN and single line CAN transceivers from ESD and other harmful transient voltage events. This device provides bidirectional protection for the data line with a single SOT-23 package, giving the system designer a low cost option for improving system reliability and meeting EMI requirements.



SOT-23

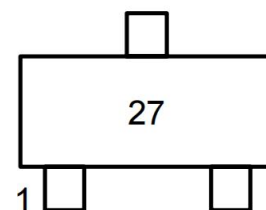


PIN 1. ANODE
2. ANODE
3. CATHODE

Features

- SOT-23 package allows one separate bidirectional configuration
- 350W Peak Power Dissipation per Line (8x20μsec Waveform)
- Low Reverse Leakage Current(<100nA)
- IEC Compatibility:
 - IEC 61000-4-2(ESD): Level 4
 - IEC 61000-4-4(EFT): 40A - 5/50ns
 - IEC 61000-4-5(Lighting):8.0A(8/20μs)
- Flammability Rating UL 94 V-0
- Pb-Free Packages

MARKING DIAGRAM



Application

- Industrial Control Networks
- Smart Distribution System(SDS)
- DeviceNet

Maximum Ratings(T_J=25°C, unless otherwise specified)

Parameter	Symbol	Value	Units
Human Body Model(HBM)	V _{ESD}	16	kV
Machine Model(MM)		400	V
IEC 61000-4-2 Specification(Contact)		30	kV
Peak Power Dissipation (8x20μs Double Exponential Waveform)	P _{PK}	350	W
Operating Junction Temperature Range	T _J	-40~+125	°C
Storage Temperature Range	T _{STG}	-55~+150	°C
Lead Soldering Temperature(10s)	T _L	260	°C



Electrical Characteristics(TJ=25°C, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}		24			V
Breakdown Voltage	V_{BR}	$I_T=1mA$	25.7		28.4	V
Reverse Leakage Current	I_R	$V_{RWM}=24V$		15	100	nA
Clamping Voltage	V_C	$I_{PP}=5A(8 \times 20\mu s \text{ Waveform})$			40	V
		$I_{PP}=8A(8 \times 20\mu s \text{ Waveform})$			44	
Maximum Peak Pulse Current	I_{PP}	$8 \times 20\mu s \text{ Waveform}$			8.0	A
Capacitance	C_J	$V_R=0V, f=1MHz(\text{Anode to GND})$			60	pF
		$V_R=0V, f=1MHz(\text{Anode to Anode})$			30	

Electrical Characteristics Curve

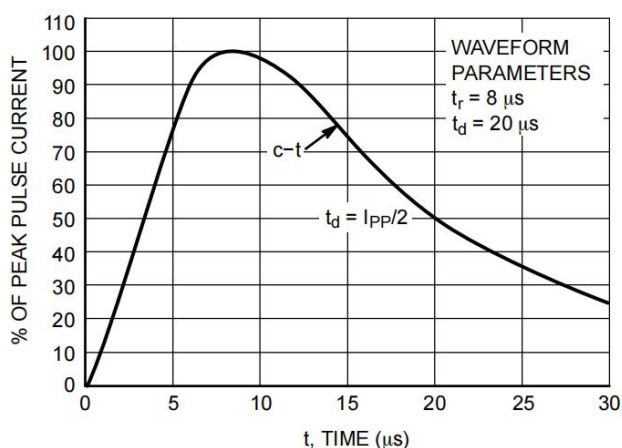


Figure 1. Pulse Waveform, $8 \times 20 \mu s$

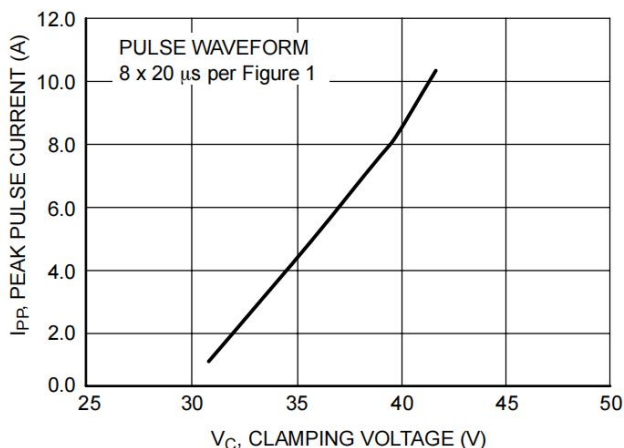


Figure 2. Clamping Voltage vs Peak Pulse Current

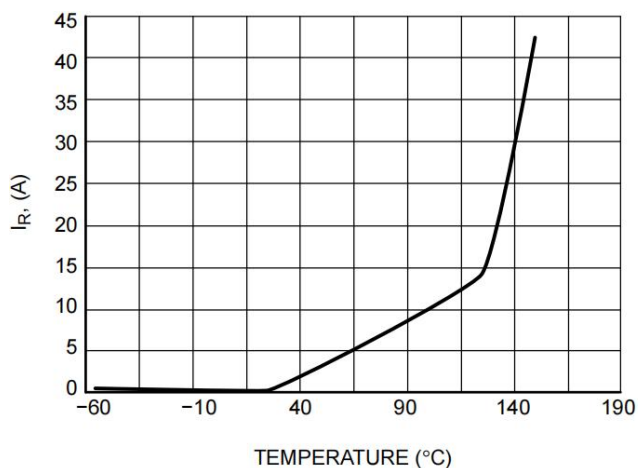


Figure 3. Typical Leakage vs. Temperature

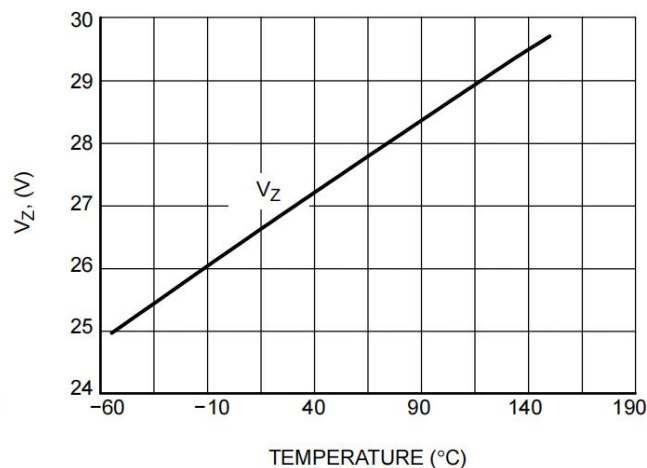


Figure 4. Typical V_Z @ 1.0 mA vs. Temperature

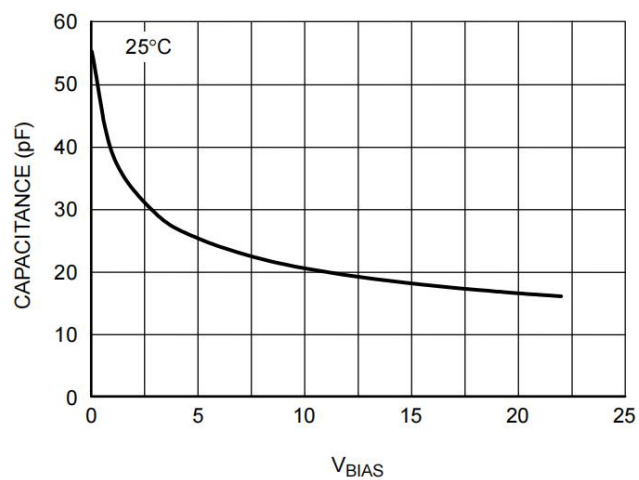


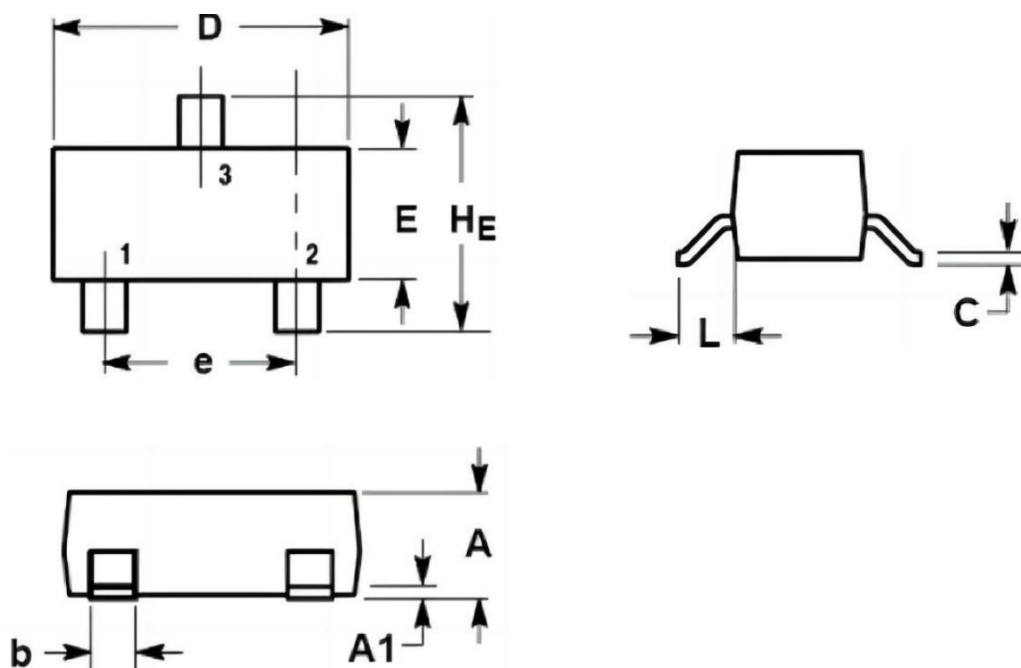
Figure 5. Capacitance vs. V_{BIAS}



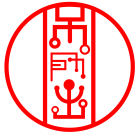
Package Information

SOT-23

Dimensions in mm



Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.40	2.64	0.083	0.094	0.104



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