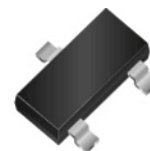


**2-Line Bi-directional TVS Diode Array**
**General description**

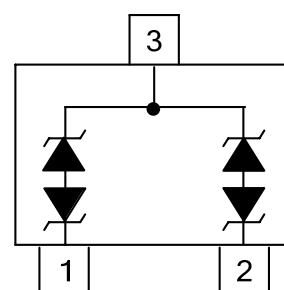
NUP2105L in small SOT23 SMD plastic package designed to protect two automotive Control Area Network (CAN) bus lines from the damage caused by ElectroStatic Discharge ( ESD ) and other transients.



SOT-23

**Features**

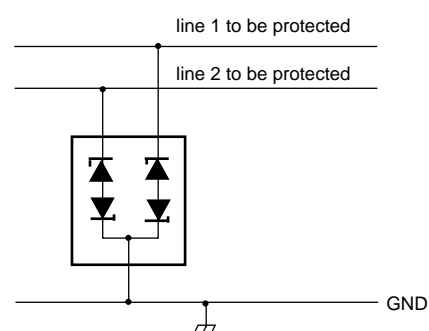
- Due to the integrated diode structure only one small SOT23 package is needed to protect two CAN bus lines
- Max. peak pulse power:  $P_{pp} = 300 \text{ W}$  at  $t_p = 8/20 \mu\text{s}$
- Low clamping voltage:  $V_{(CL)R} = 40 \text{ V}$  at  $I_{pp} = 1 \text{ A}$
- Ultra low leakage current:  $I_{RM} < 1 \text{ nA}$
- ESD protection of up to 30 kV
- IEC 61000-4-2, level 4 (ESD)
- IEC 61000-4-5 (surge);  $I_{pp} = 4 \text{ A}$  at  $t_p = 8/20 \mu\text{s}$
- Small SMD plastic package



Pin Configuration

**Applications**

- Industrial Control Networks
  - Smart Distribution Systems (SDS<sup>®</sup>)
  - DeviceNet<sup>™</sup>
- Automotive Networks
  - Low and High-Speed CAN
  - Fault Tolerant CAN



Typical application: ESD protection of two automotive CAN bus lines

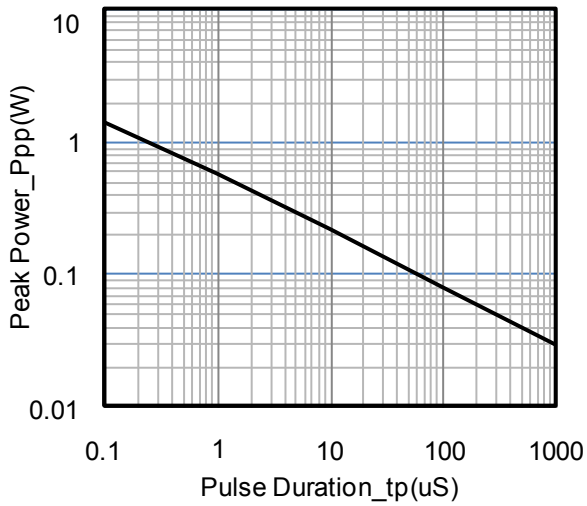
**2-Line Bi-directional TVS Diode Array**
**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	300	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V <sub>ESD</sub>	$\pm 15$ $\pm 8$	kV
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

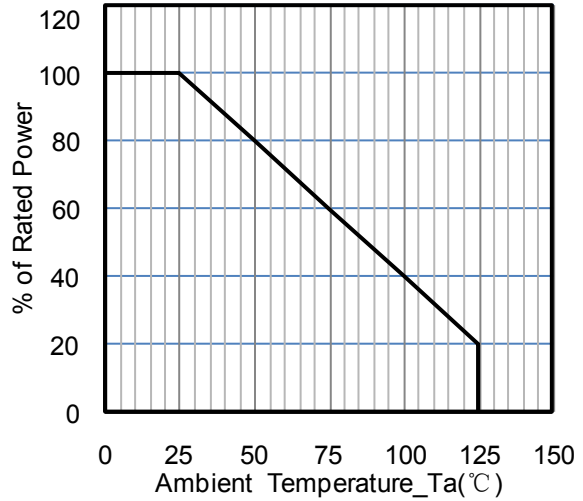
**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

<b>NUP2105L</b>						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			24	V	
Breakdown Voltage	V <sub>BR</sub>	27			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			0.2	$\mu\text{A}$	V <sub>RWM</sub> = 24V
Clamping Voltage	V <sub>C</sub>			42	V	I <sub>PP</sub> = 1A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	V <sub>C</sub>			70	V	I <sub>PP</sub> = 4A (8 x 20 $\mu\text{s}$ pulse)
Peak Pulse Current	I <sub>PP</sub>			4	A	t <sub>p</sub> = 8/20 $\mu\text{s}$
Junction Capacitance	C <sub>J</sub>		20		pF	V <sub>R</sub> = 0V, f = 1MHz, Pin 1 to Pin 3 or Pin 2 to Pin 3

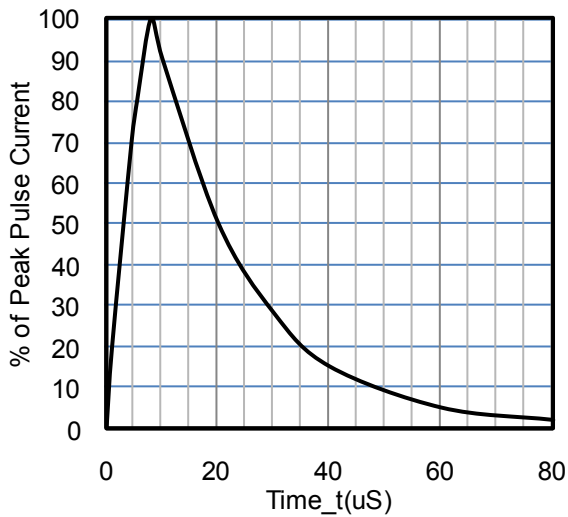
Typical Performance Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise Specified)



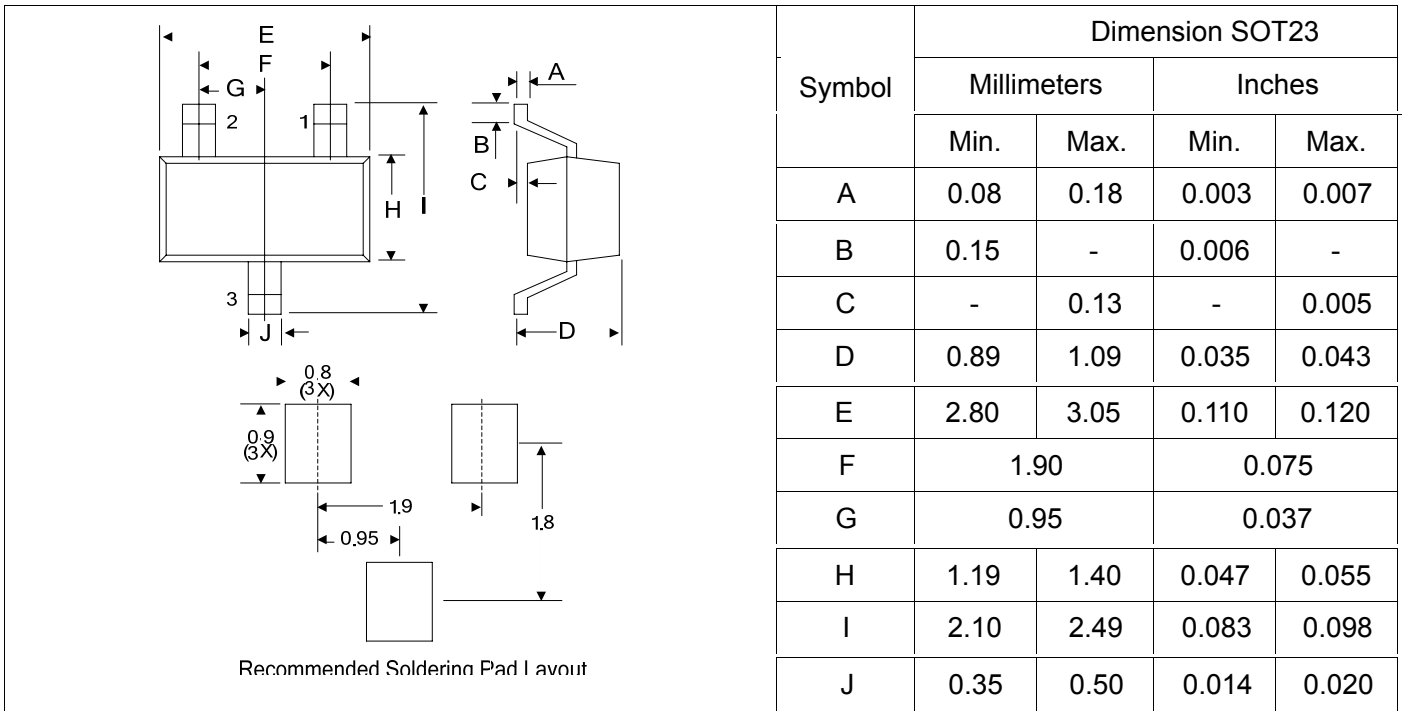
Peak Pulse Power vs. Pulse Time



Power Derating Curve



8 X 20us Pulse Waveform

**2-Line Bi-directional TVS Diode Array**
**PACKAGE DIMENSIONS**

**Packaging**
