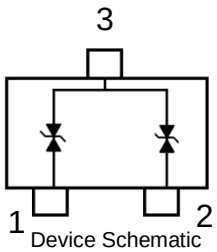
Description

This new generation TVS is designed to meet the stringent requirements of Automotive Applications and to protect sensitive electronics from the damage due to ESD. The combination of small size and high ESD surge capability makes it ideal to protect LIN and CAN transceiver from ESD, EMI and other harmful transient voltage events.



Device Schematic

Features

- 350W Peak Power Dissipation Per Line (8/20μs Waveform)
- Air ±30kV, Contact ±30kV
  2 Channels of ESD Protection
- Low Channel Input Capacitance
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. “Green” Device (Note 3)

Applications

- Industrial Control Network
- Automotive Networks

Mechanical Data

- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe
- Weight: 0.009 grams (Approximate)

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P_{PP}	350	W	8/20μs, per Figure 1
Peak Pulse Current	I_{PP}	8	A	8/20μs, per Figure 1
ESD Protection – Contact Discharge	$V_{ESD\_CONTACT}$	±30	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V_{ESD_AIR}	±30	kV	IEC 61000-4-2 Standard

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 6)	P_D	300	mW
Thermal Resistance, Junction to Ambient (Note 6)	$R_{\theta JA}$	417	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	V_{RWM}			32	V	
Channel Leakage Current (Note 7)	I_{RM}		10	100	nA	V_{RWM} = 32V
Clamping Voltage, Positive Transients	V_{CL}			59	V	I_{PP} = 5A, tp = 8/20μs, Figure 1
				66		I_{PP} = 8A, tp = 8/20μs, Figure 1
Breakdown Voltage	V_{BR}	35.6			V	I_R = 1mA
Differential Resistance	R_{DIF}		0.4		Ω	I_R = 1A, tp = 8/20μs
Channel Input Capacitance	C_T			30	pF	V_R = 0V, f = 1MHz

Notes: 1. Device mounted on FR-4 PCB pad layout (2oz copper)
2. Short duration pulse test used to minimize self-heating effect.

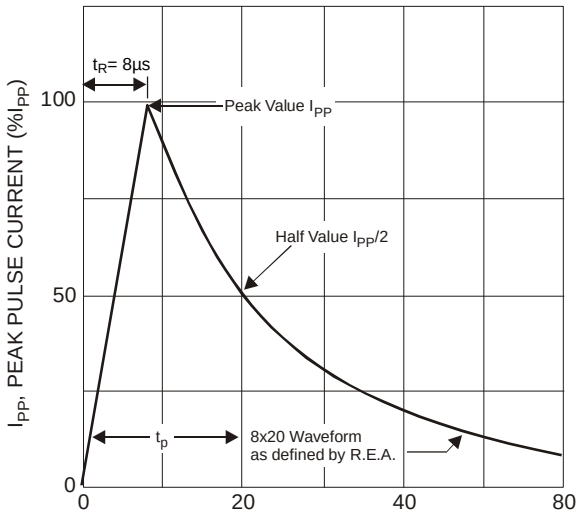


Figure 1 Pulse Waveform

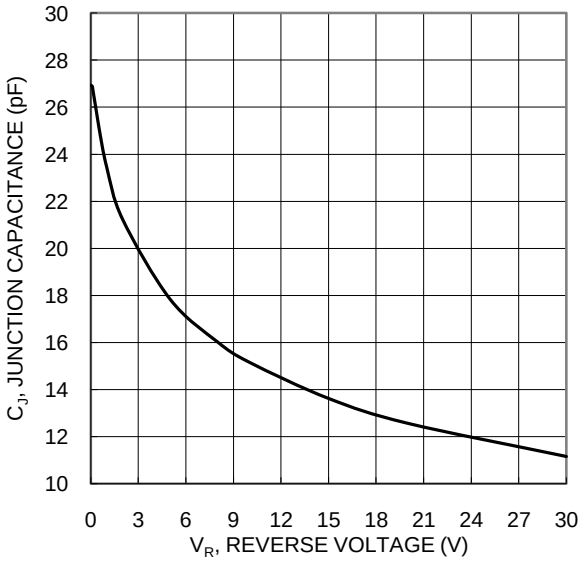


Figure 2 Typical Junction Capacitance

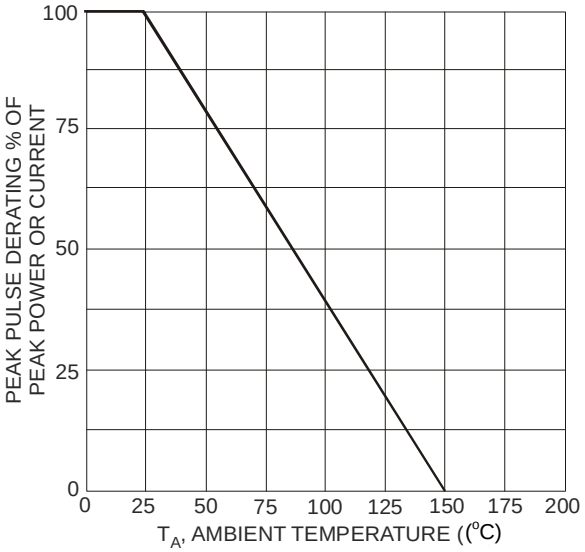


Figure 3 Power Dissipation vs. Ambient Temperature

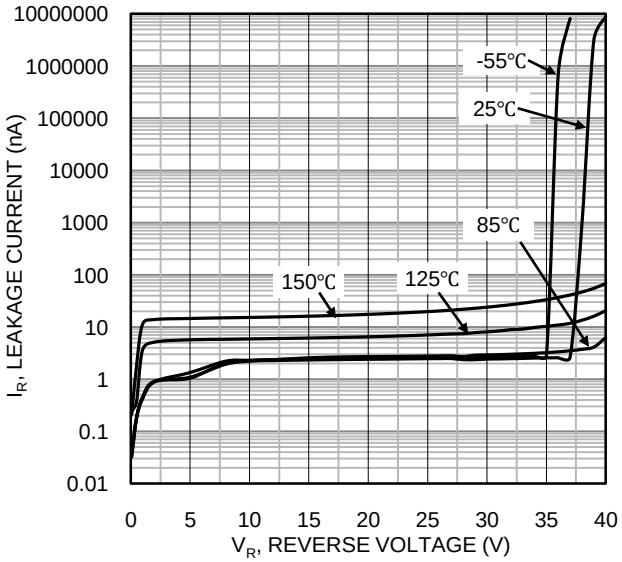


Figure 4 Typical Reverse Characteristics

Marking

Ordering information

Order code	Package	Baseqty	Deliverymode
UMW DUP3105SOQ-7	SOT-23	3000	Tape and reel

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