Product Summary

V_{PT} (Min)	I_{PP} (Max)	C_T (Typ)
3.6V	80A	2.1pF

Description

The D3V3F4U8MR of transient voltage suppressors are designed to protect low voltage. This has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (cable discharge events), and FET (fast electrical transients).

Features

- Protects Two Line Pairs (Four Lines)
- Low Capacitance < 3pF for High-Speed Interfaces
- Low Operating and Clamping Voltages
- IEC 61000-4-2, Level 4 (ESD), ≤ ±15kV (Air); ≤ ±8kV (Contact)
- IEC 61000-4-5, Level 3 (Lightning), 48A (8/20μs)
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

Applications

- 10/100 Ethernet
- WAN/LAN equipment
- Switching systems
- Desktops, servers, and notebooks
- Base stations

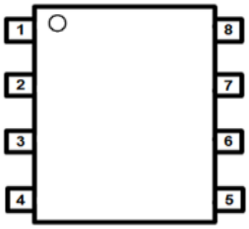
Mechanical Data

- Package: SO-8
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Copper Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.08 grams (Approximate)

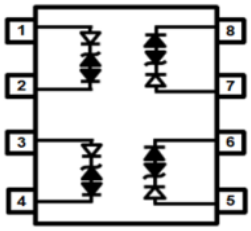
SO-8



Top View



Top View
Pin Configuration



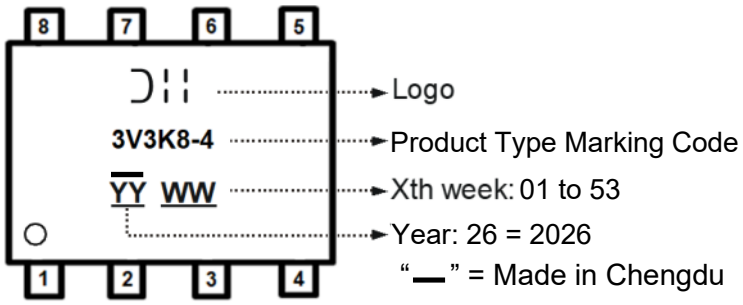
Device Schematic

Ordering Information (Note 4)

Orderable Part Number	Package	Marking	Reel Size (inches)	Tape Width (mm)	Packing	
					Qty.	Carrier
D3V3F4U8MR-13	SO-8	3V3K8-4	13	12	2,500	Tape & Reel

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P_{PP}	1000	W	8/20μs, per Figure 1
Peak Pulse Current	I_{PP}	80	A	8/20μs, per Figure 1
ESD Protection – Contact Discharge	$V_{ESD_Contact}$	±8	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V_{ESD_Air}	±15	kV	IEC 61000-4-2 Standard

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P_D	500	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	56.50	°C/W
Operating Temperature Range	T_J	-55 to +125	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Soldering Temperature, t max = 10s	T_L	+260	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	V_{RWM}	—	—	3.3	V	—
Channel Leakage Current (Note 6)	I_{RM}	—	—	1	μA	V_{RWM} = 3.3V
Punch Through Voltage	V_{PT}	3.6	—	—	V	I_{PT} = 2μA
Snap-Back Voltage	V_{SB}	3.3	—	—		I_{SB} = 50mA
Clamping Voltage, Positive Transients	V_{CL}	—	—	5	V	I_{PP} = 1A, tp = 8/20μs, Figure 1
		—	—	17		I_{PP} = 48A, tp = 8/20μs, Figure 1
		—	—	20		I_{PP} = 80A, tp = 8/20μs, Figure 1
Channel Input Capacitance	C_T	—	2.1	3	pF	V_R = 0, f = 1MHz, each line

Notes: 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on our website at http://www.diodes.com/package-outlines.html.
6. Short duration pulse test used to minimize self-heating effect.

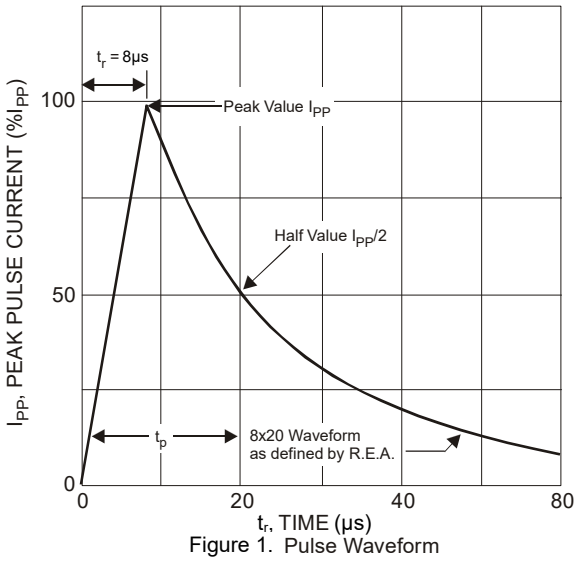


Figure 1. Pulse Waveform

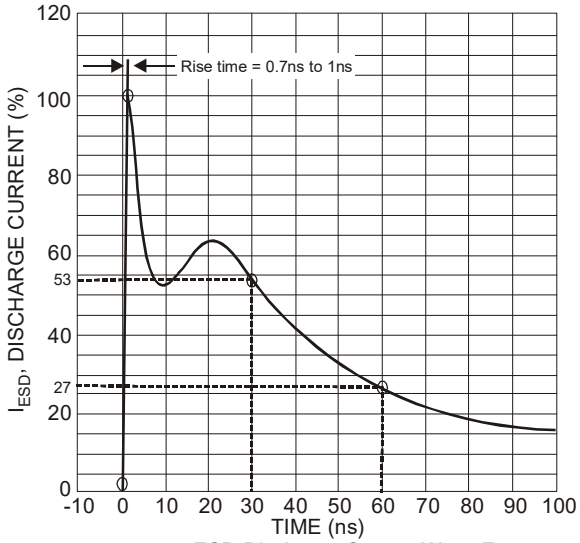


Figure 2. ESD Discharge Current Wave Form
IEC 61000-4-2 (330Ω/150pF)

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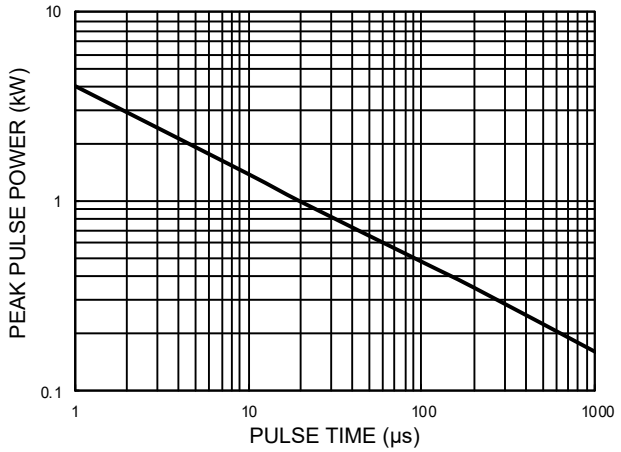


Figure 3. Power Dissipation vs. Pulse Time

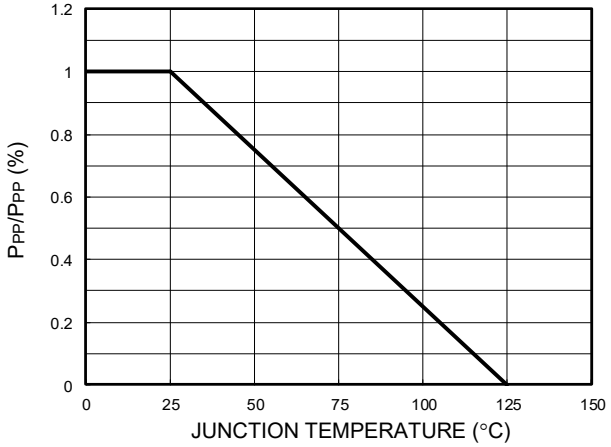


Figure 4. Peak Pulse Power vs. T_J

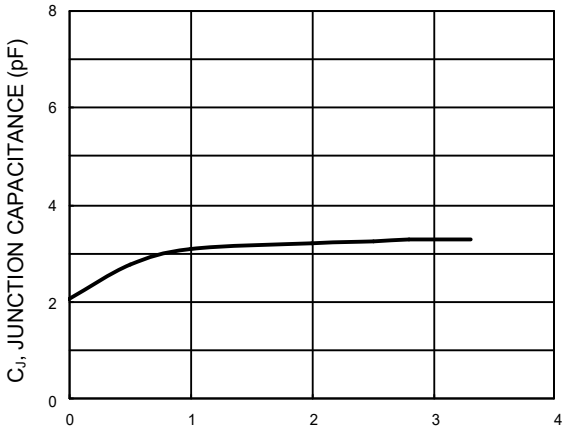


Figure 5. Typical Junction Capacitance

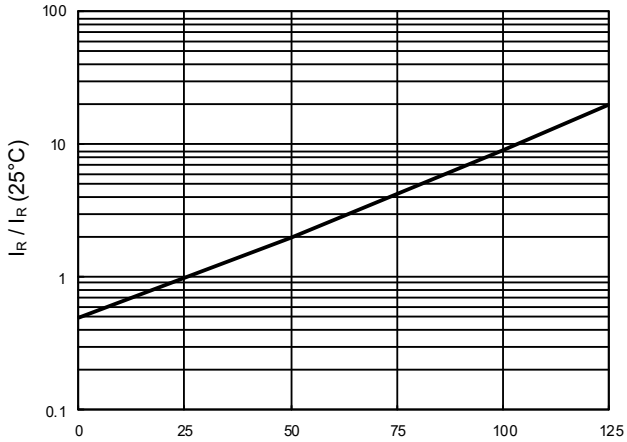


Figure 6. Reverse Leakage Current vs. T_J

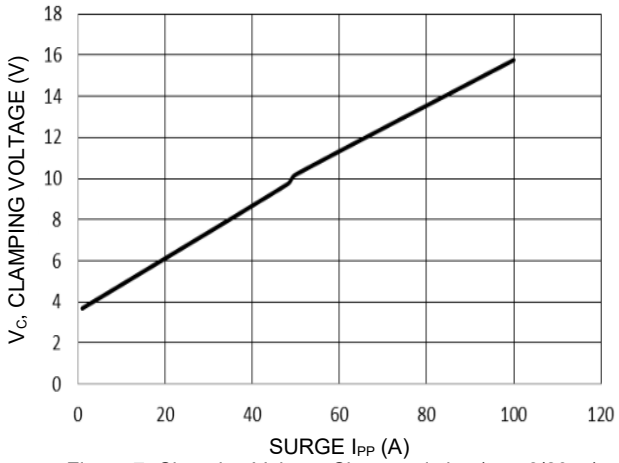


Figure 7. Clamping Voltage Characteristics (tp = 8/20µs)

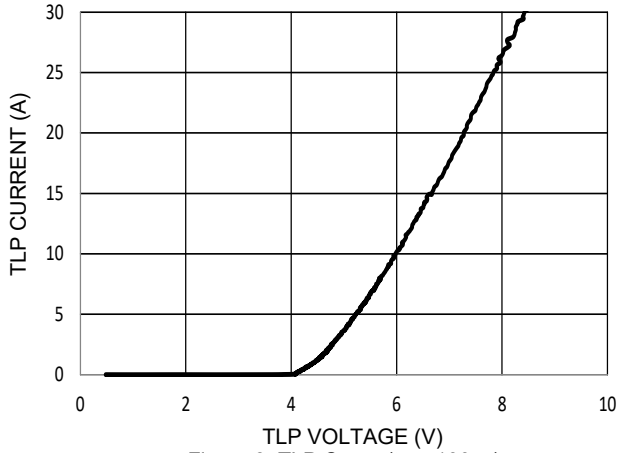


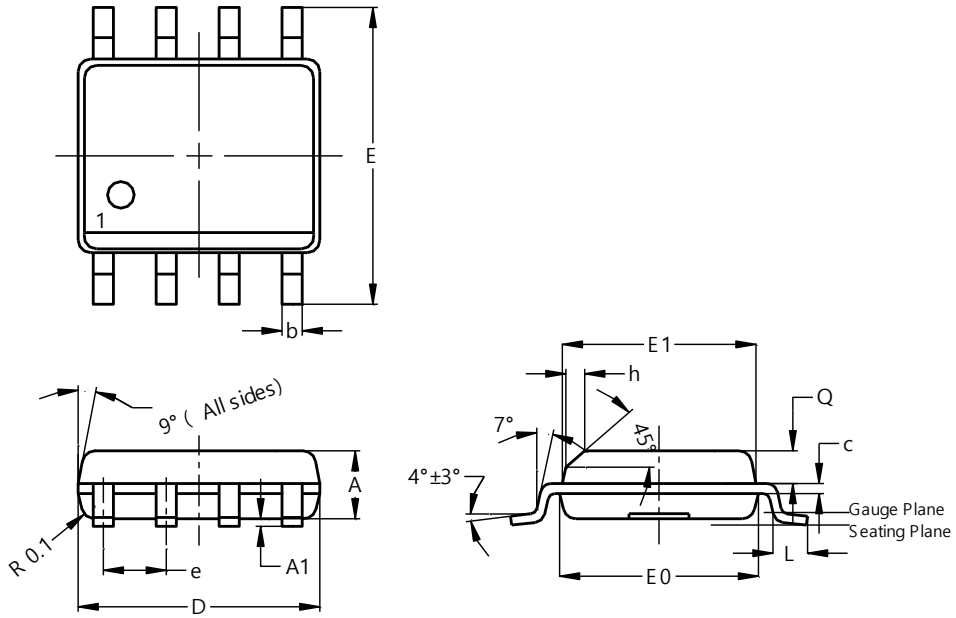
Figure 8. TLP Curve (tp = 100ns)

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Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

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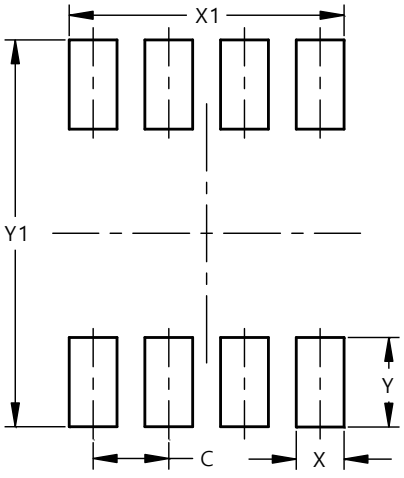


SO-8			
Dim	**Min**	**Max**	**Typ**
A	1.40	1.50	1.45
A1	0.10	0.20	0.15
b	0.30	0.50	0.40
c	0.15	0.25	0.20
D	4.85	4.95	4.90
E	5.90	6.10	6.00
E1	3.80	3.90	3.85
E0	3.85	3.95	3.90
e	--	--	1.27
h	--	--	0.35
L	0.62	0.82	0.72
Q	0.60	0.70	0.65
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SO-8



Dimensions	Value (in mm)
C	1.27
X	0.802
X1	4.612
Y	1.505
Y1	6.50

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