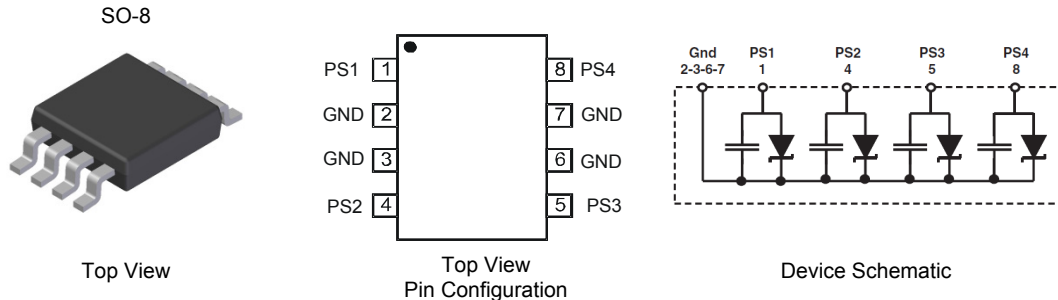


## Features

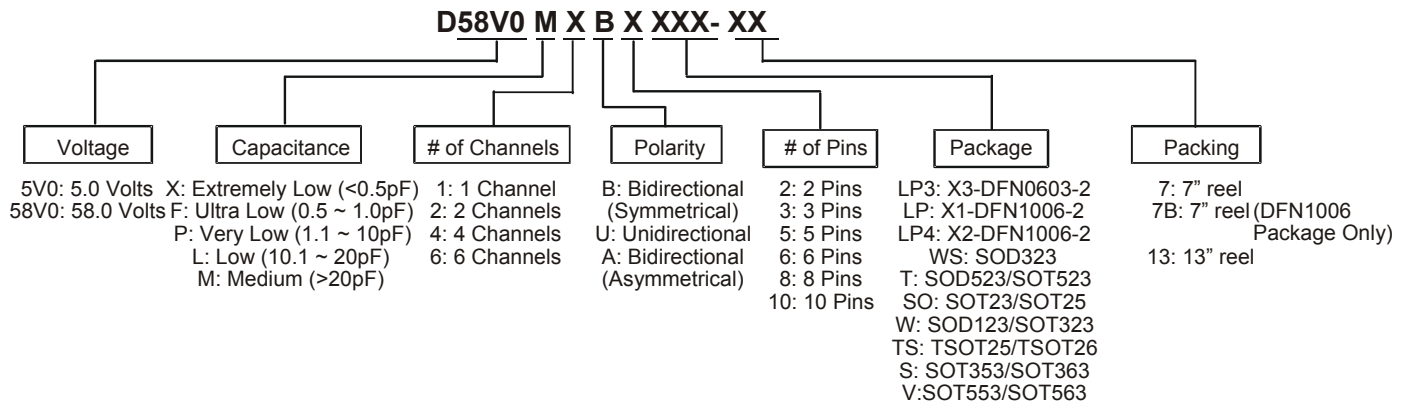
- 2.7kW Peak Pulse Power (tp = 8x20µs)
- Provides ESD Protection per IEC 61000-4-2 Standard:  
Air ±30kV, Contact ±30kV
- 4 Channels of ESD Protection and 4 Decoupling Capacitances
- Typically Used in Power Over Ethernet PSE Equipment against Line Overvoltages
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

- Case: SO-8
- Case 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)



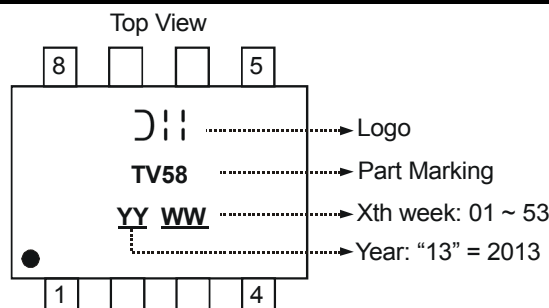
## Ordering Information (Note 4)



Product	Compliance	Marking	Reel size(inches)	Tape width(mm)	Quantity per reel
D58V0M4U8MR-13	Standard	TV58	13	12	2500/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) 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 <http://www.diodes.com/products/packages.html>.

## Marking Information



**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.), Per Element

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	$P_{PP}$	2700	W	8/20 $\mu\text{s}$ , Per Figure 1
Peak Pulse Current	$I_{PP}$	24	A	8/20 $\mu\text{s}$ , Per Figure 1
ESD Protection – Contact Discharge	$V_{ESD\_Contact}$	$\pm 30$	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	$V_{ESD\_Air}$	$\pm 30$	kV	IEC 61000-4-2 Standard

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	$P_D$	1.0	W
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	125	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	$V_{RWM}$	—	—	58	V	—
Channel Leakage Current (Note 6)	$I_{RM}$	—	—	0.2	$\mu\text{A}$	$V_{RWM} = 58\text{V}$
Breakdown Voltage	$V_{BR}$	64.4	—	71.2	V	$I_R = 1\text{mA}$
Clamping Voltage	$V_{CL}$	—	—	100	V	$I_{PP} = 24\text{A}, t_p = 8/20\mu\text{S}$
Channel Input Capacitance	$C_T$	—	55	—	pF	$V_R = 50\text{V}, f = 1\text{MHz}$

- Notes:
- Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at <http://www.diodes.com>.
  - Short duration pulse test used to minimize self-heating effect.

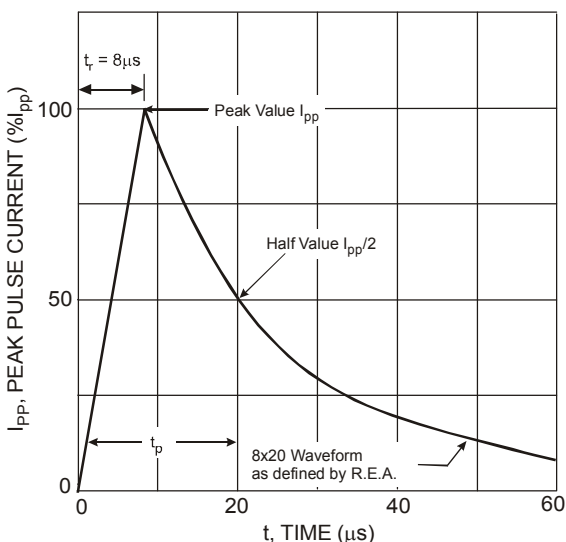


Figure 1 Pulse Waveform

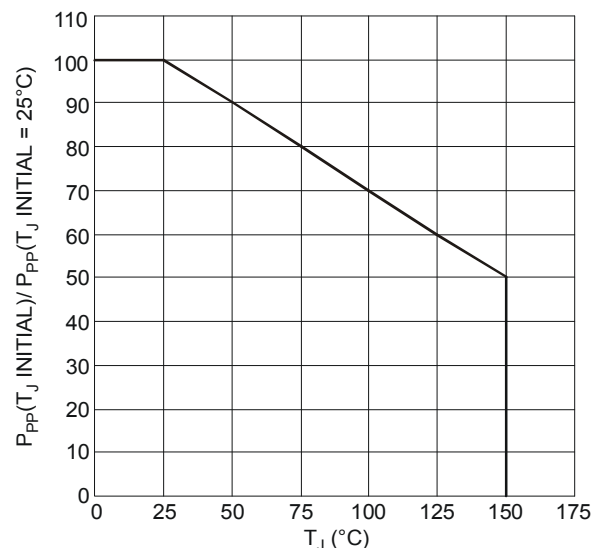


Figure 2 Peak Power Dissipation vs. Initial Junction Temperature

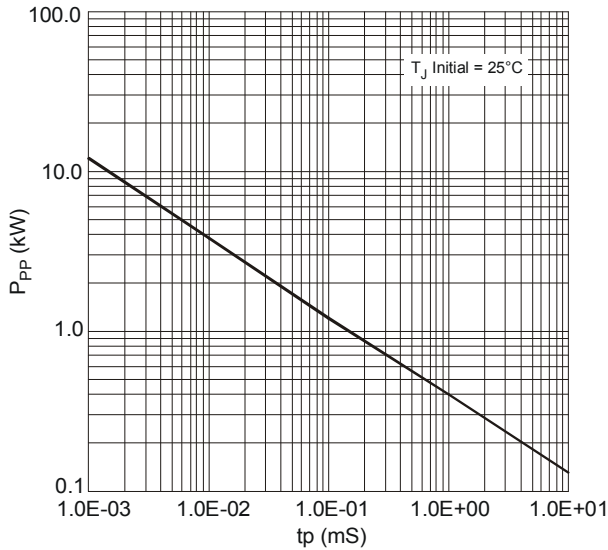


Figure 3 Peak Pulse Power vs. Exponential Pulse Duration ( $T_J$  Initial = 25°C)

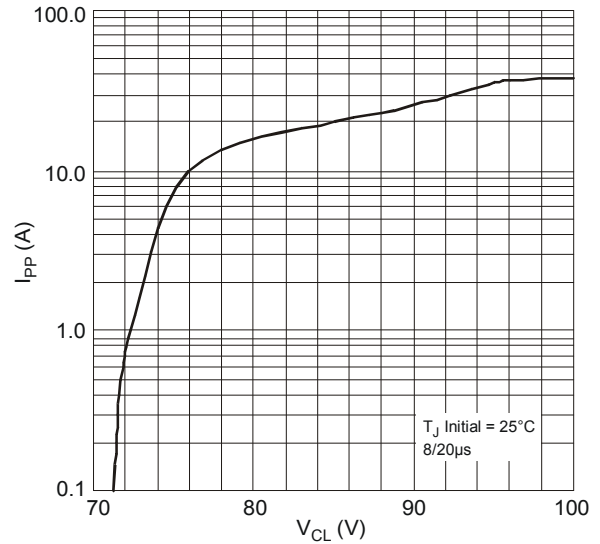


Figure 4 Clamping Voltage vs. Peak Pulse Current (Exponential Waveform, Maximum Values)

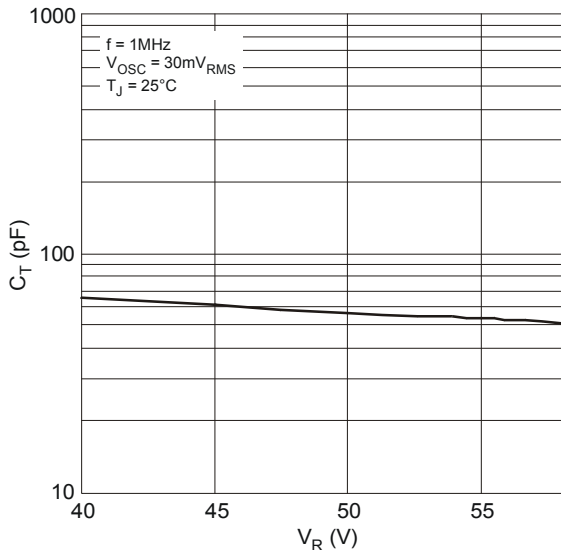


Figure 5 Capacitance vs. Voltage (typical values)

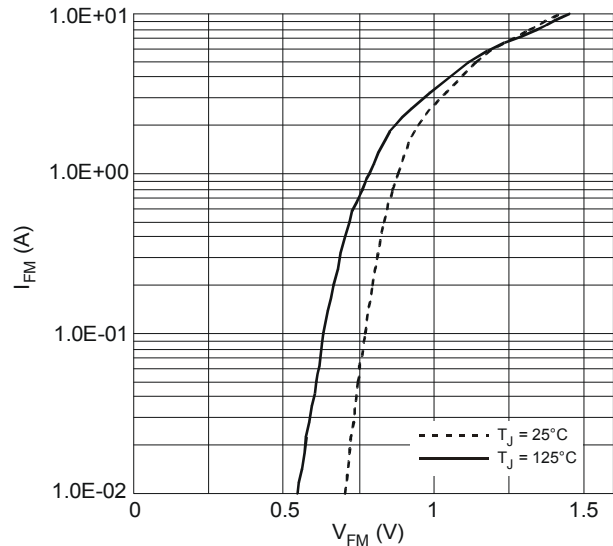


Figure 6 Peak Forward Voltage Drop vs. Peak Forward Current (typical values)

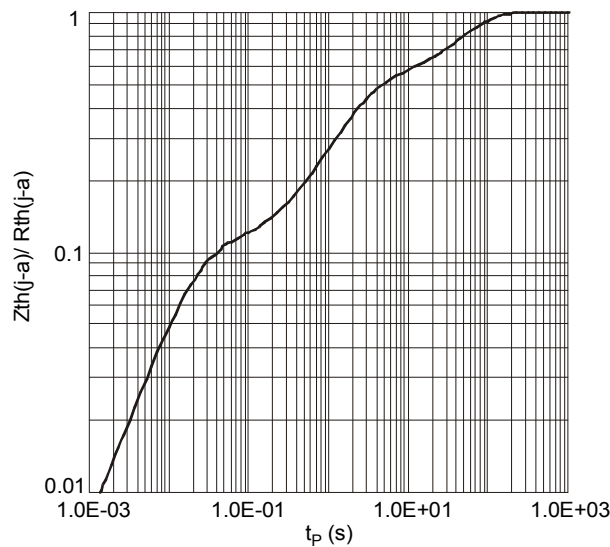


Figure 7 Relative Variation of Thermal Impedance Junction Ambient vs. Pulse Duration

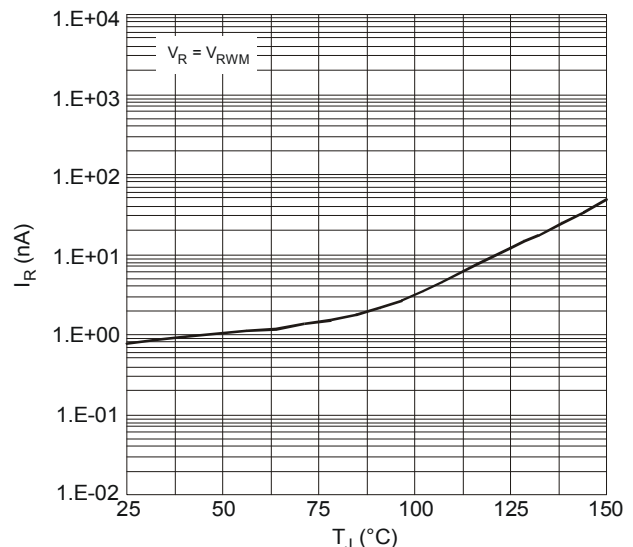
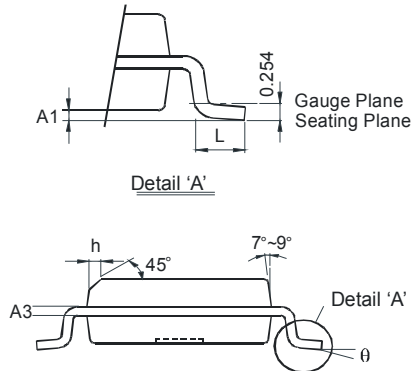
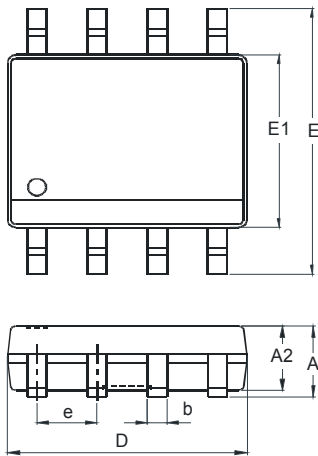


Figure 8 Leakage Current vs. Junction Temperature (typical values)

**Package Outline Dimensions**

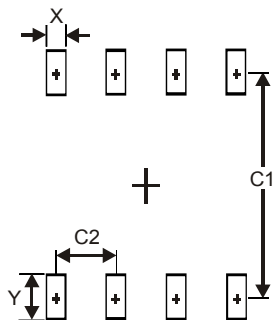
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SO-8		
Dim	Min	Max
A	-	1.75
A1	0.10	0.20
A2	1.30	1.50
A3	0.15	0.25
b	0.3	0.5
D	4.85	4.95
E	5.90	6.10
E1	3.85	3.95
e	1.27 Typ	
h	-	0.35
L	0.62	0.82
θ	0°	8°
All Dimensions in mm		

**Suggested Pad Layout**

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
X	0.60
Y	1.55
C1	5.4
C2	1.27

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