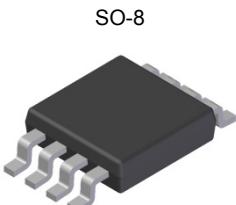
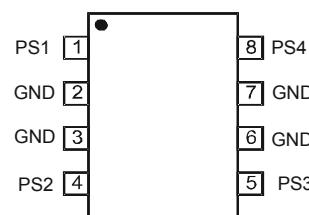
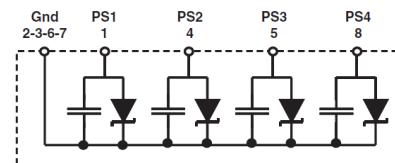


Features

- 2.7kW Peak Pulse Power ($t_p = 8 \times 20\mu s$)
- Provides ESD Protection per IEC 61000-4-2 Standard: Air $\pm 30kV$, Contact $\pm 30kV$
- 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)**



Top View


 Top View
 Pin Configuration


Device Schematic

Ordering Information (Note 4)

D58V0 M X B X XXX- XX

5V0: 5.0 Volts X: Extremely Low (<0.5pF)
 58V0: 58.0 Volts F: Ultra Low (0.5 ~ 1.0pF)
 P: Very Low (1.1 ~ 10pF)
 L: Low (10.1 ~ 20pF)
 M: Medium (>20pF)

1: 1 Channel
 2: 2 Channels
 4: 4 Channels
 6: 6 Channels
 B: Bidirectional (Symmetrical)
 U: Unidirectional
 A: Bidirectional (Asymmetrical)

2: 2 Pins
 3: 3 Pins
 5: 5 Pins
 6: 6 Pins
 8: 8 Pins
 10: 10 Pins

LP3: X3-DFN0603-2
 LP: X1-DFN1006-2
 LP4: X2-DFN1006-2
 WS: SOD323
 T: SOD523/SOT523
 SO: SOT23/SOT25
 W: SOD123/SOT323
 TS: TSOT25/TSOT26
 S: SOT353/SOT363
 V: SOT553/SOT563

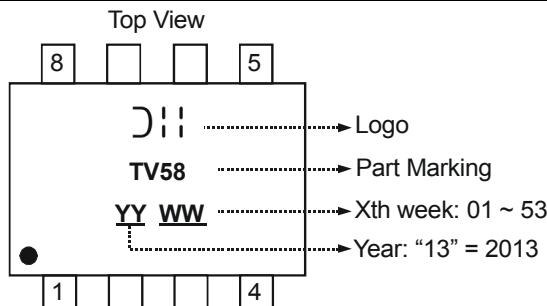
7: 7" reel
 7B: 7" reel (DFN1006 Package Only)
 13: 13" reel

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

Notes:

- No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- See 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.
- Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 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 μs , Per Figure 1
Peak Pulse Current	I_{PP}	24	A	8/20 μs , 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 5)	P_D	1.0	W
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	125	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°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	μA	$V_{RWM} = 58\text{V}$
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: 5. 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>.
 6. Short duration pulse test used to minimize self-heating effect.

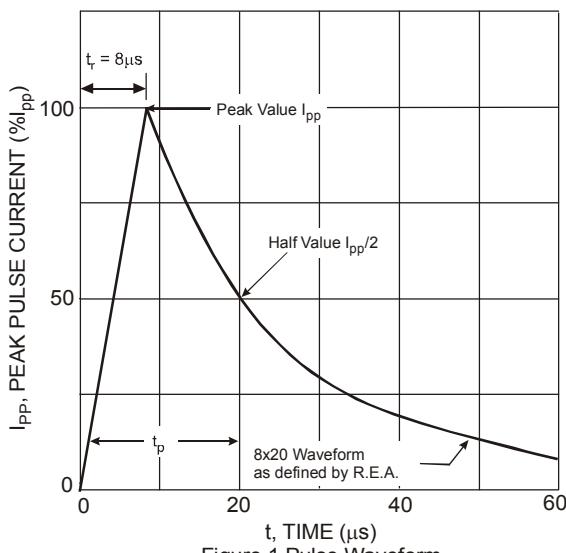
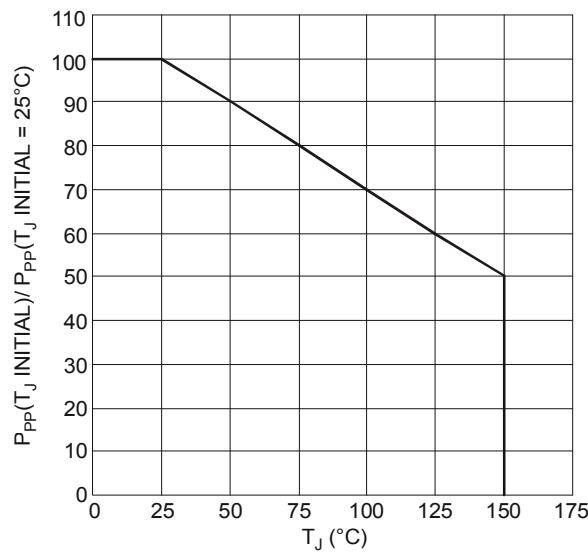


Figure 1 Pulse Waveform


 Figure 2 Peak Power Dissipation vs.
 Initial Junction Temperature

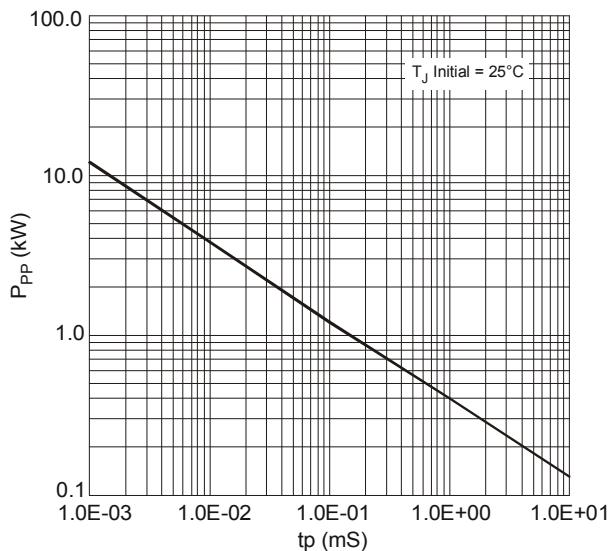


Figure 3 Peak Pulse Power vs. Exponential Pulse Duration
(T_J Initial = 25°C)

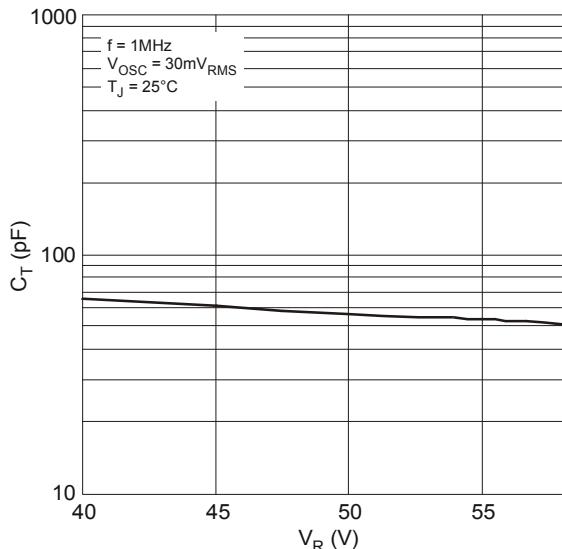


Figure 5 Capacitance vs. Voltage (typical values)

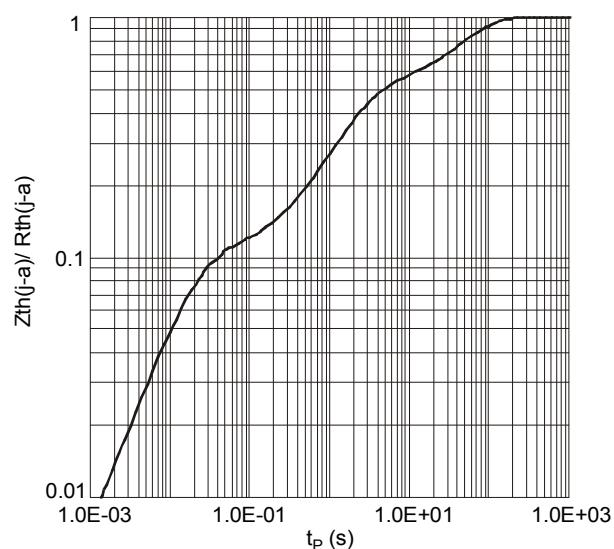


Figure 7 Relative Variation of Thermal Impedance
Junction Ambient vs. Pulse Duration

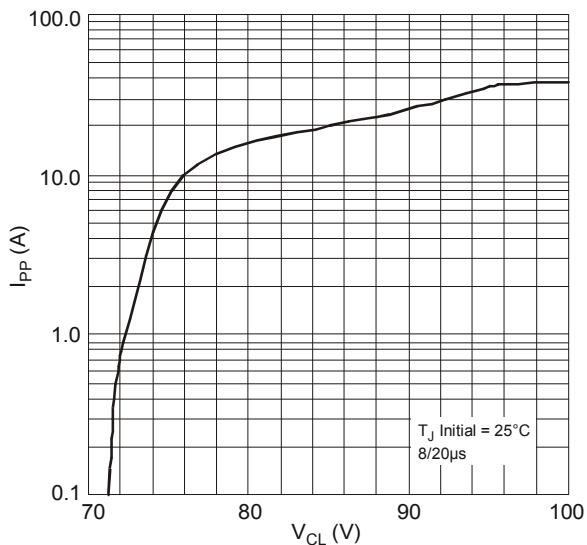


Figure 4 Clamping Voltage vs. Peak Pulse Current
(Exponential Waveform, Maximum Values)

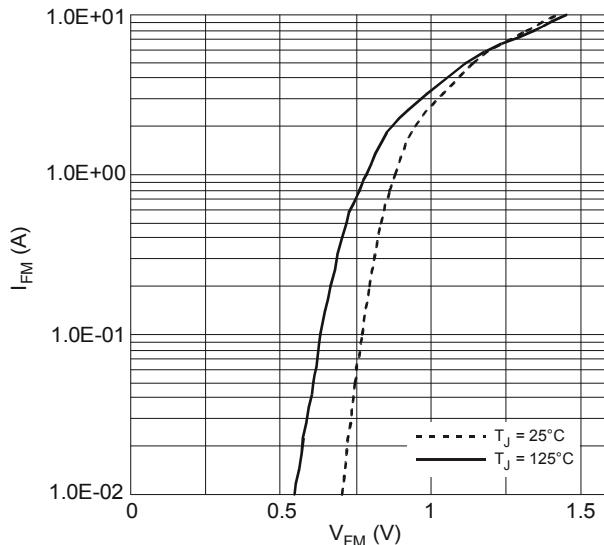


Figure 6 Peak Forward Voltage Drop vs.
Peak Forward Current (typical values)

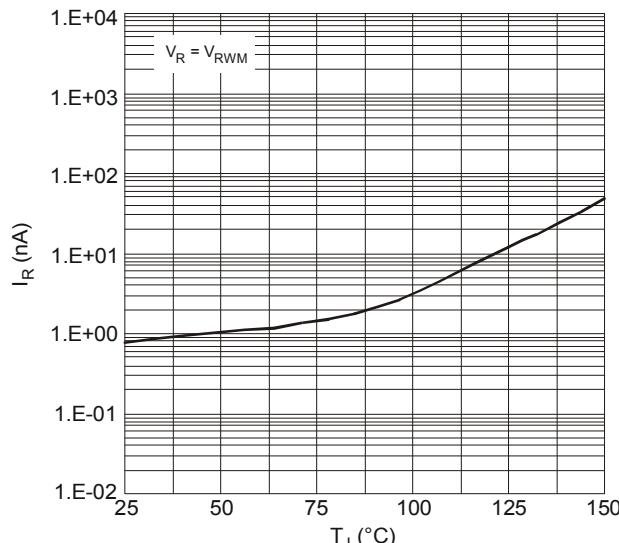
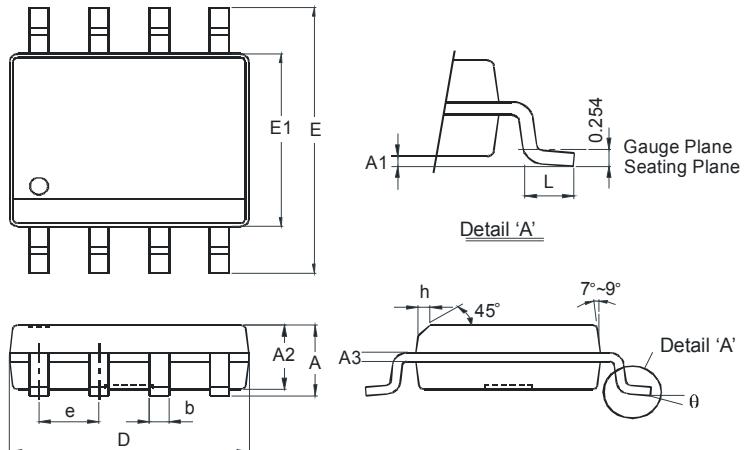


Figure 8 Leakage Current vs. Junction Temperature
(typical values)

Package Outline Dimensions

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

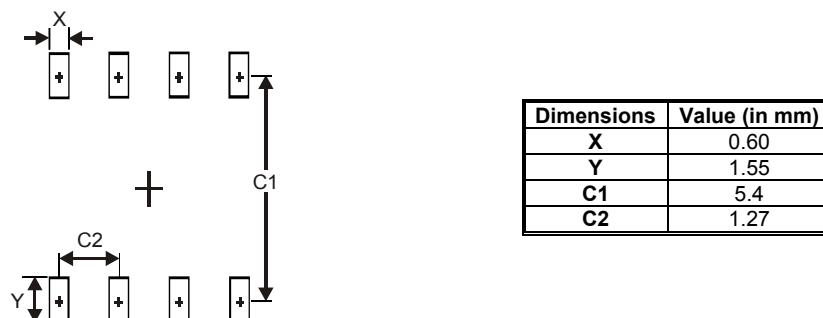


SO-8		
Dim	Min	Max
A	-	1.75
A1	0.10	0.20
A2	1.30	1.50
A3	0.15	0.25
b	0.3	0.5
D	4.85	4.95
E	5.90	6.10
E1	3.85	3.95
e	1.27 Typ	
h	-	0.35
L	0.62	0.82
θ	0°	8°

All Dimensions in mm

Suggested Pad Layout

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



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