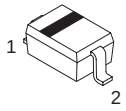
High Voltage Silicon Pin Diode

MMVL3700T1

SILICON PIN SWITCHING DIODE

These devices are designed primarily for VHF band switching applications but are also suitable for use in general–purpose switching circuits. They are supplied in a cost–effective plastic surface mount package for economical, high–volume consumer and industrial requirements.

- Long Reverse Recovery Time
  t_{rr} = 300 ns (Typ)
- Rugged PIN Structure Coupled with Wirebond Construction for Optimum Reliability
- Low Series Resistance @ 100 MHz — R_S = 0.7 Ohms (Typ) @ I_F = 10 mAdc
- Reverse Breakdown Voltage = 200 V (Min)



CASE 477–02, STYLE 1
SOD323

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Continuous Reverse Voltage	V_R	75	Vdc
Peak Forward Current	I_F	200	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board,* T_A = 25°C	P_D	200	mW
Derate above 25°C		1.57	mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	635	°C/W
Junction and Storage Temperature	T_J, T_{stg}	150	°C

*FR-4 Minimum Pad

DEVICE MARKING

MMVL3700T1 = 4R

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I_R = 10 μAdc)	$V_{(BR)R}$	200	—	—	Vdc
Diode Capacitance (V_R = 20 Vdc, f = 1.0 MHz)	C_T	—	—	1.0	pF
Series Resistance (Figure 5) (I_F = 10 mAdc)	R_S	—	0.7	1.0	Ω
Reverse Leakage Current (V_R = 150 Vdc)	I_R	—	—	0.1	μAdc
Reverse Recovery Time (I_F = I_R = 10 mAdc)	t_{rr}	—	300	—	ns

TYPICAL CHARACTERISTICS

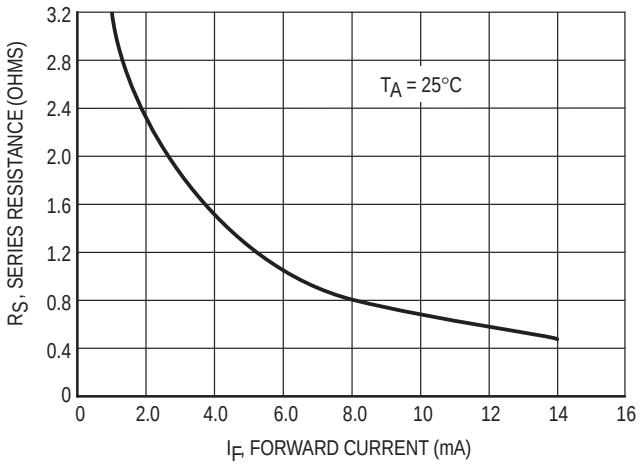


Figure 1. Series Resistance

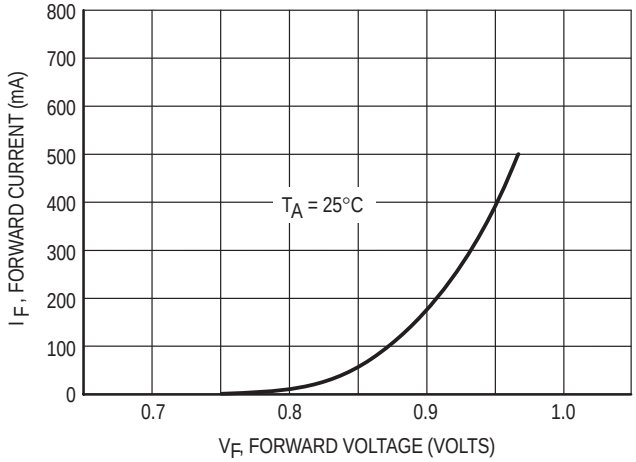


Figure 2. Forward Voltage

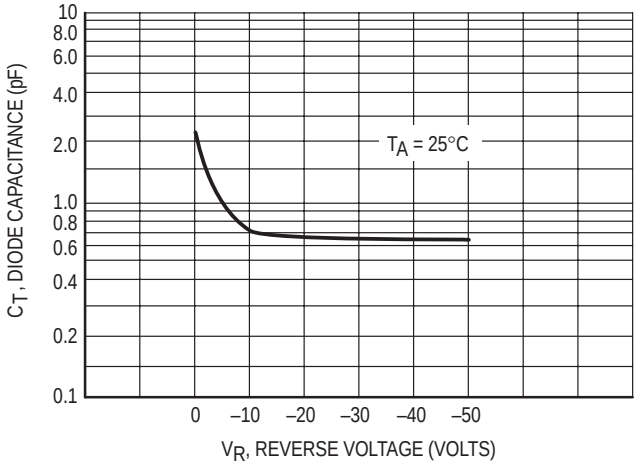


Figure 3. Diode Capacitance

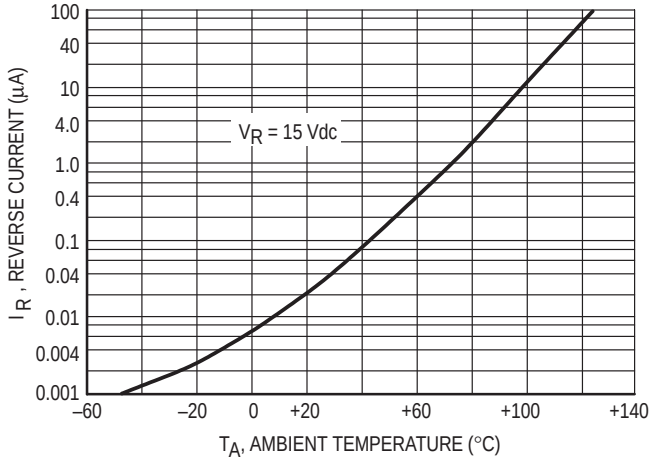
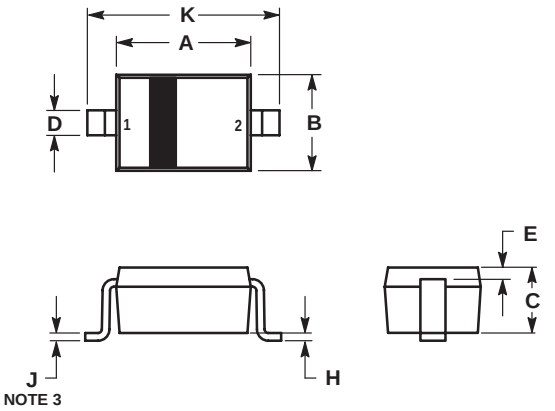


Figure 4. Leakage Current

PACKAGE DIMENSIONS

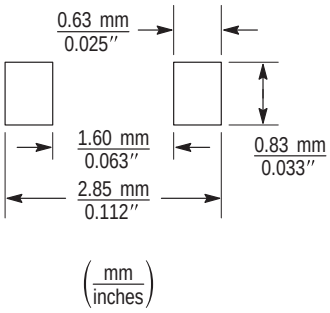


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	1.60	1.80	0.063	0.071
B	1.15	1.35	0.045	0.053
C	0.80	1.00	0.031	0.039
D	0.25	0.40	0.010	0.016
E	0.15 REF		0.006 REF	
H	0.00	0.10	0.000	0.004
J	0.089	0.177	0.0035	0.0070
K	2.30	2.70	0.091	0.106

STYLE 1:
PIN 1. CATHODE
2. ANODE

CASE 477–02
ISSUE A
SOD323



SOD–323
Soldering Footprint

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