

**Switching Diode**  
**Reverse Voltage 75 Volts Forward Current 0.2 Ampere**

**Features**

- High switching speed
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

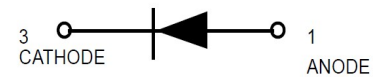
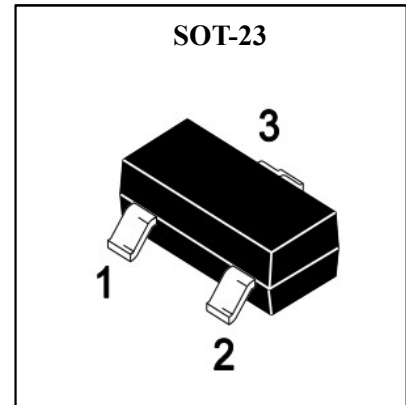
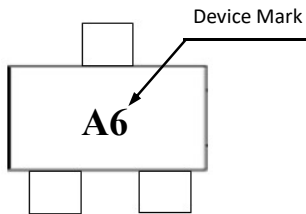
**Typical Applications**

- High-speed switching.

**Mechanical Data**

- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208

**Marking**



**Absolute Maximum Ratings** (Ta=25°C unless otherwise noted)

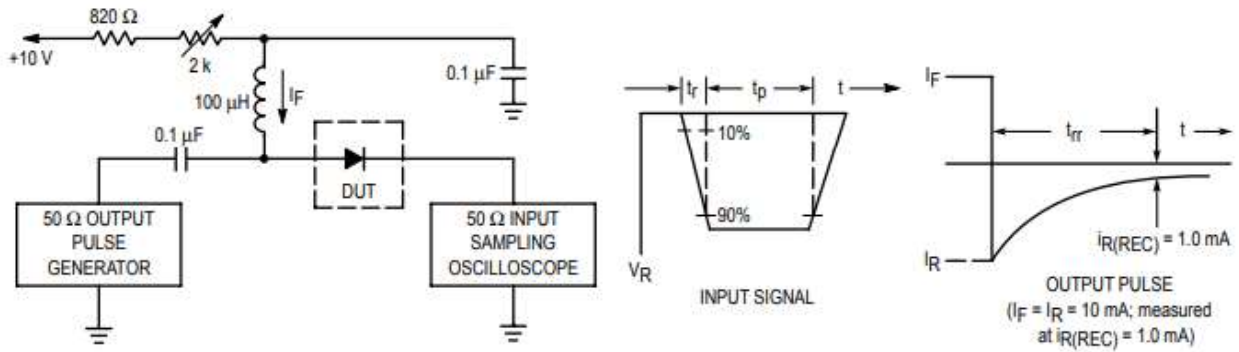
Parameter	Symbol	Rated Value	Unit
Continuous Reverse Voltage	$V_R$	75	V
Forward Current	$I_F$	200	mA
Peak Forward Surge Current	$I_{FM}(\text{surge})$	500	mA
Total Device Dissipation, FR-5 Board <sup>(1)</sup> Ta=25°C	PD	225	mW
Derate above 25°C		1.8	mW/°C
Total Device Dissipation, Alumina Substrate <sup>(1)</sup> Ta=25°C	PD	300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction-to-Ambient <sup>(1)</sup>	Rth(j-a)	417	°C/W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

1. FR-5=1.0×0.75×0.062 in., Alumina = 0.4×0.3×0.024 in. 99.5% alumina

**Electrical Characteristics** (Ta=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Max	Unit
Reverse Breakdown Voltage	$V_{BR}$	$I_R = 100\mu A$	75	-	V
Forward Voltage	$V_F$	$I_F = 1.0\text{mA}$	-	715	mV
		$I_F = 10\text{mA}$	-	855	
		$I_F = 50\text{mA}$	-	1000	
		$I_F = 150\text{mA}$	-	1250	
Reverse Voltage Leakage Current	$I_R$	$V_R = 75\text{V}$	-	1.0	uA
		$V_R = 75\text{Vdc}, T_J = 150^\circ\text{C}$	-	50	
		$V_R = 25\text{Vdc}, T_J = 150^\circ\text{C}$	-	30	
Capacitance Between Terminals	$C_T$	$V_R = 0\text{V}, f = 1\text{MHz}$	-	2.0	pF
Forward Recovery Voltage	$V_{FR}$	$I_F = 10\text{mA}, t_f = 20\text{ns}$	-	1.75	Vdc
Reverse Recovery Time	trr	$I_F = I_R = 10\text{mA}, I_{RR} = 1\text{mA}, R_L = 50\Omega$	-	6.0	ns
Stored Charge ( $I_F = 10\text{mA}$ to $V_R = 5\text{V}, R_L = 500\Omega$ )	$Q_S$	-	-	45	pC

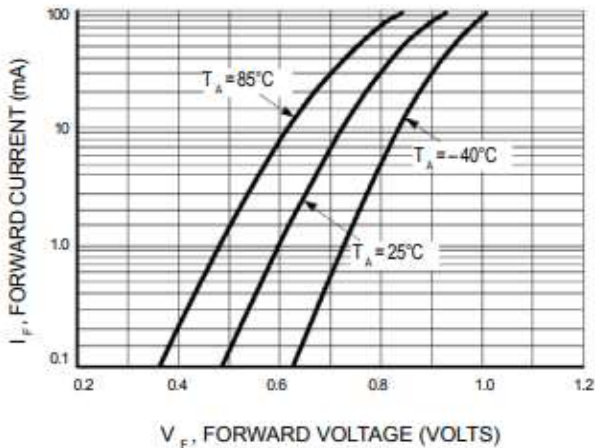
**Electrical Characteristics Curves (Ta=25°C unless otherwise noted)**



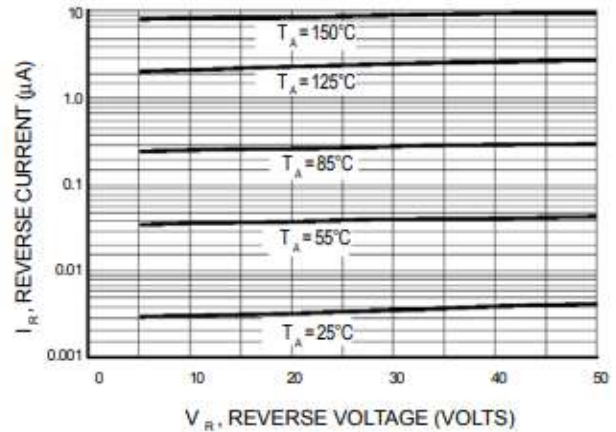
- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.
- 2. Input pulse is adjusted so  $I_{R(peak)}$  is equal to 10 mA.
- 3.  $t_p \gg t_{rr}$

**Figure 1. Recovery Time Equivalent Test Circuit**

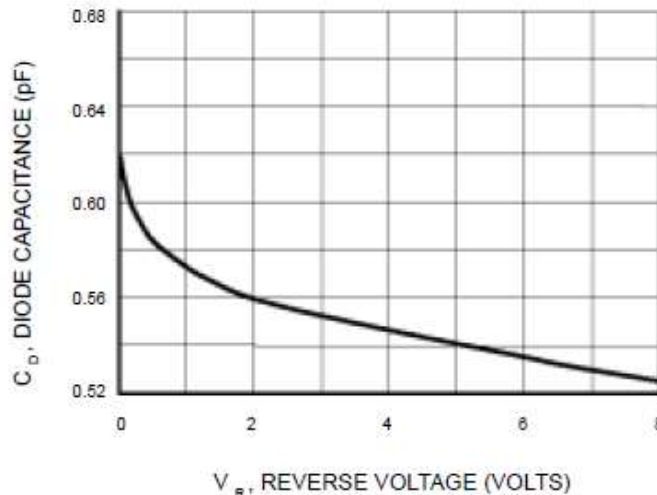
**CURVES APPLICABLE TO EACH CATHODE**



**Figure 2. Forward Voltage**

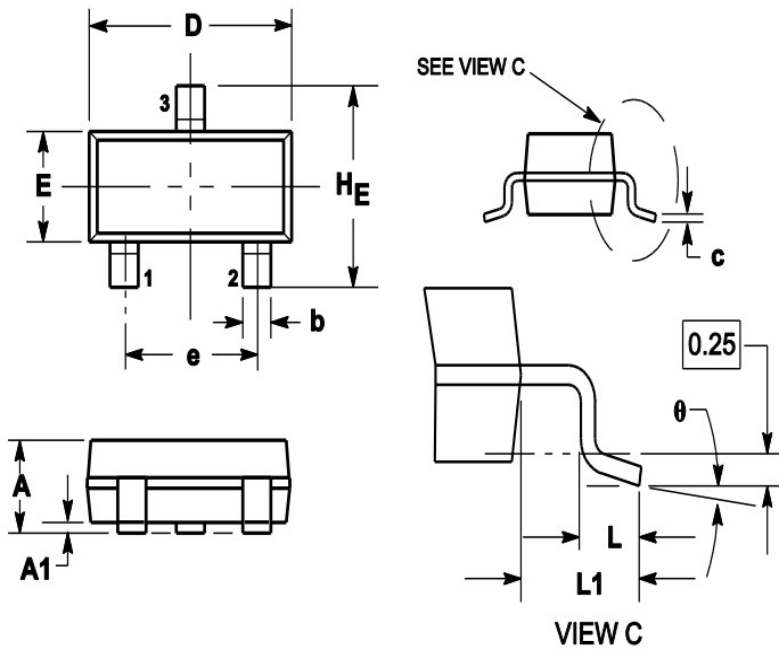


**Figure 3. Leakage Current**



**Figure 4. Capacitance**

**Package Outline and Dimensions**



**Notes:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

**Soldering Footprint**

