

## Surface Mount Schottky Barrier Diodes

 **Lead(Pb)-Free**

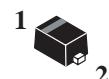
### Description:

These Schottky barrier diodes are designed for high-speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction loss. Miniature surface mount package is excellent for hand-held and portable applications where space is limited.

### Feature:

- \* Extremely Fast Switching Speed
- \* Low Forward Voltage 0.35V (Typ) @  $I_F = 10 \text{ mA}$

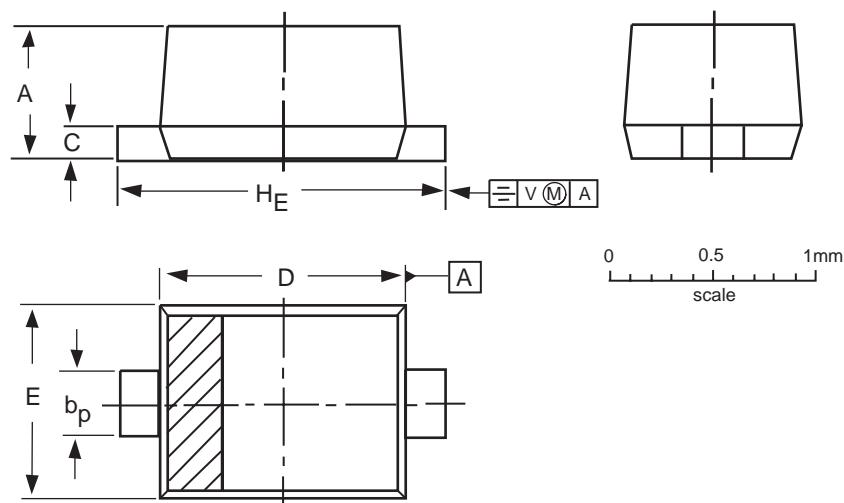
**SMALL SIGNAL  
SCHOTTKY DIODES  
200m AMPERES  
30 VOLTS**



**SOD-523**

### SOD-523 Outline Dimensions

Unit:mm



#### DIMENSIONS (mm are the original dimensions)

UNIT	A	$b_p$	c	D	E	$H_E$	V
mm	max	0.7	0.35	0.2	1.3	0.9	1.7
	min	0.5	0.25	0.1	1.1	0.7	1.5

Note1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ		
SOD-523			SC-79	- - - + - - -	98-11-25

**MAXIMUM RATINGS** ( $T_J = 125^\circ\text{C}$  unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	30	V

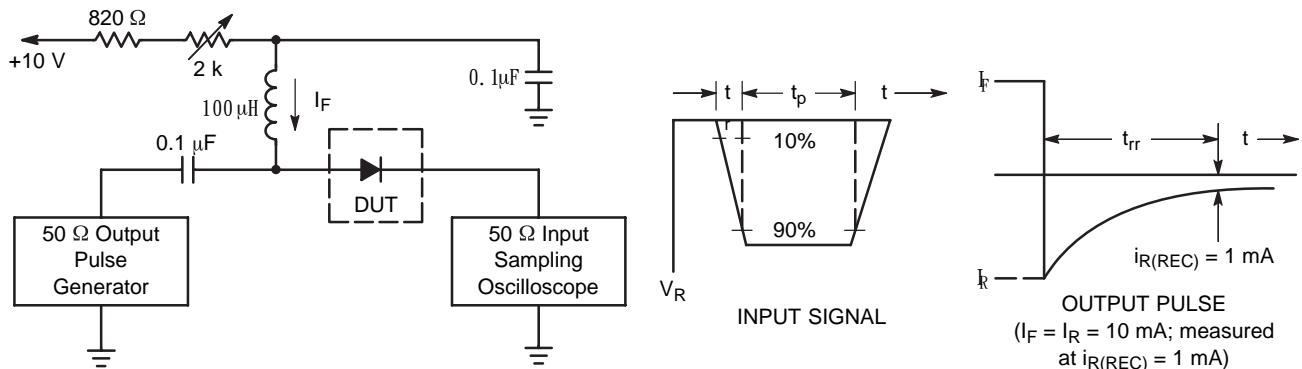
**THERMAL CHARACTERISTICS**

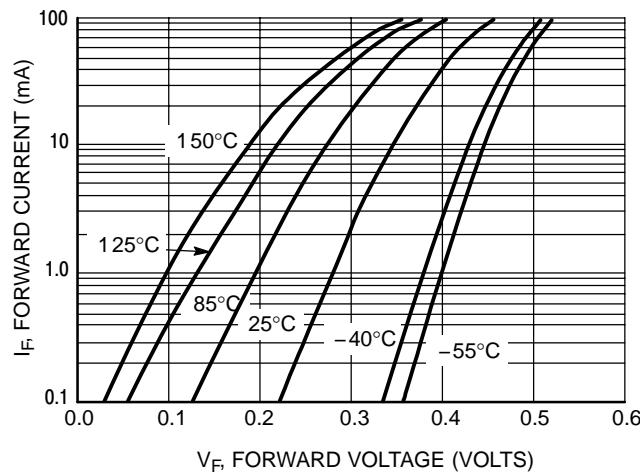
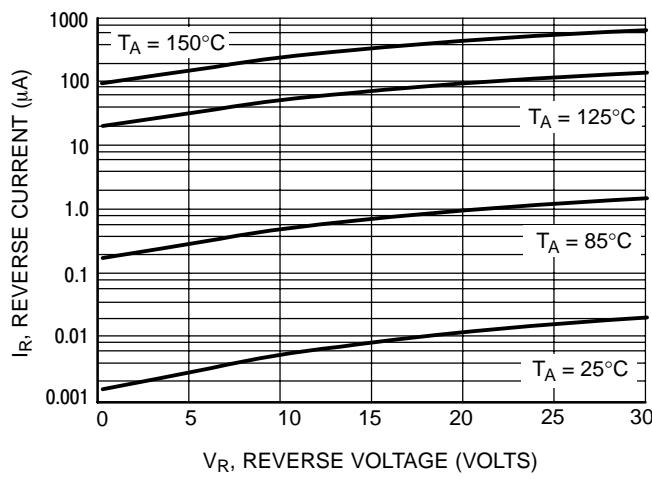
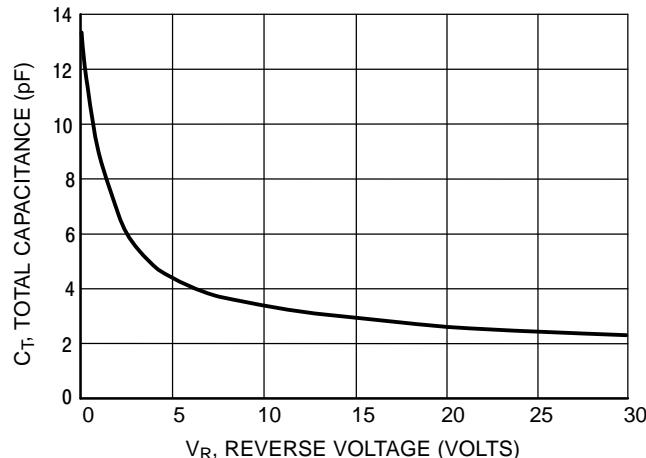
Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (Note 1) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	200	mW
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	1.57	$\text{mW}/^\circ\text{C}$
Junction and Storage Temperature	$T_J, T_{\text{stg}}$	635	$^\circ\text{C}/\text{W}$
		-55 to 125	$^\circ\text{C}$

1. FR-4 Minimum Pad.

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ( $I_R = 10 \mu\text{A}$ )	$V_{(\text{BR})R}$	30	-	-	V
Total Capacitance ( $V_R = 1.0 \text{ V}, f = 1.0 \text{ MHz}$ )	$C_T$	-	7.6	10	pF
Reverse Leakage ( $V_R = 25 \text{ V}$ )	$I_R$	-	0.5	2.0	$\mu\text{A}/\text{dc}$
Forward Voltage ( $I_F = 0.1 \text{ mA}/\text{dc}$ )	$V_F$	-	0.22	0.24	Vdc
Forward Voltage ( $I_F = 30 \text{ mA}/\text{dc}$ )	$V_F$	-	0.41	0.5	Vdc
Forward Voltage ( $I_F = 100 \text{ mA}/\text{dc}$ )	$V_F$	-	0.52	0.8	Vdc
Reverse Recovery Time ( $I_F = I_R = 10 \text{ mA}/\text{dc}, I_{R(\text{REC})} = 1.0 \text{ mA}/\text{dc}$ ) Figure 1	$t_{rr}$	-	-	5.0	ns
Forward Voltage ( $I_F = 1.0 \text{ mA}/\text{dc}$ )	$V_F$	-	0.29	0.32	Vdc
Forward Voltage ( $I_F = 10 \text{ mA}/\text{dc}$ )	$V_F$	-	0.35	0.40	Vdc
Forward Current (DC)	$I_F$	-	-	200	$\text{mA}/\text{dc}$
Repetitive Peak Forward Current	$I_{FRM}$	-	-	300	$\text{mA}/\text{dc}$
Non-Repetitive Peak Forward Current ( $t < 1.0 \text{ s}$ )	$I_{FSM}$	-	-	600	$\text{mA}/\text{dc}$

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

**Electrical characteristic curves****Figure 2. Forward Voltage****Figure 3. Leakage Current****Figure 4. Total Capacitance**