

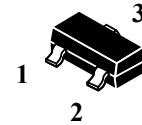
Surface Mount Schottky Barrier Diode Silicon Hot-Carrier Diodes

(Pb) Lead(Pb)-Free

**Silicon HOT-CARRIER
DETECTOR AND
SWITCHING DIODES
30 VOLTS**

Features:

- * Extremely Low Minority Carrier Lifetime - 15 ps(Typ).
- * Very Low Capacitance. — 1.5pF(Max)@V_R = 15V
- * Low Reverse Leakage. — I_R = 13nAdc(Typ)
- * Schottky Barrier Diodes Encapsulated in SOT-23 Package.



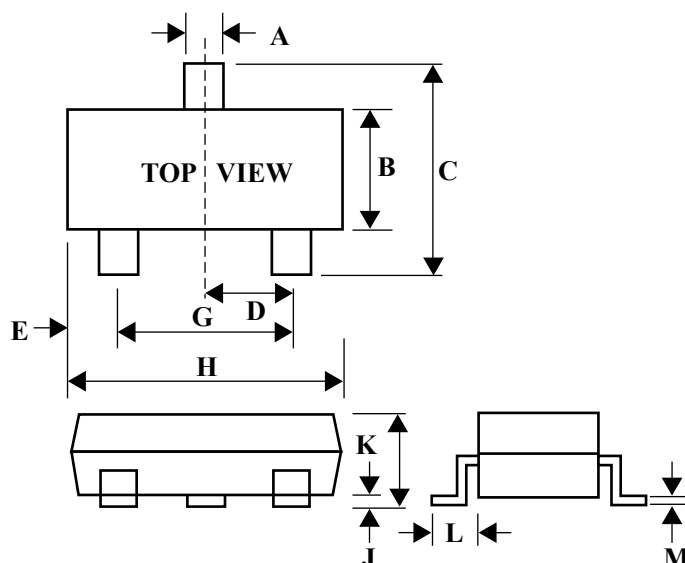
SOT-23

Applications:

- * For High Efficiency UHF and VHF Detector.
- * For Fast Switching RF and Digital Applications.
- * For High-Volume Consumer and industrial / Commercial Requirement.

SOT-23 Outline Dimensions

Unit:mm



Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25

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

Characteristics	Symbol	Value	Unit
Reverse Voltage	V_R	30	V
Total Device Dissipation FR-5 Board ⁽¹⁾ , $T_A=25^{\circ}\text{C}$ Derate above 25°C	P_D	200 2.0	mW mW/ $^{\circ}\text{C}$
Operation Junction Temperature Range	T_J	-55 to +125	$^{\circ}\text{C}$
Junction and Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage $I_R = 10\mu\text{A}$	$V_{(\text{BR})R}$	30	-	-	V
Maximum instantaneous Forward Voltage $I_F=1.0\text{mA}$ $I_F=10\text{mA}$	V_F	-	0.38 0.52	0.45 0.60	V
Reverse Leakage $V_R = 25\text{V}$	I_R	-	13	200	nA
Diode Capacitance $V_R = 15\text{V}$, $f = 1.0\text{MHz}$	C_T	-	0.9	1.5	pF

Device Marking

Item	Marking	Equivalent Circuit Diagram
WBD301	4T	

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

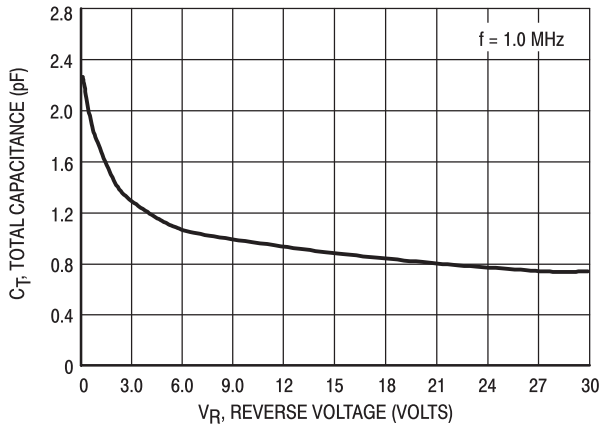


Figure 1. Total Capacitance

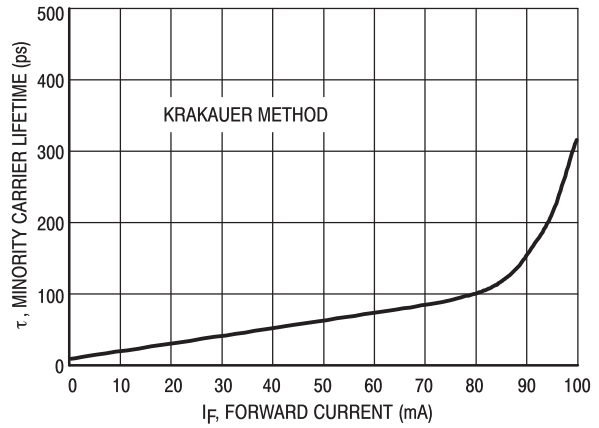


Figure 2. Minority Carrier Lifetime

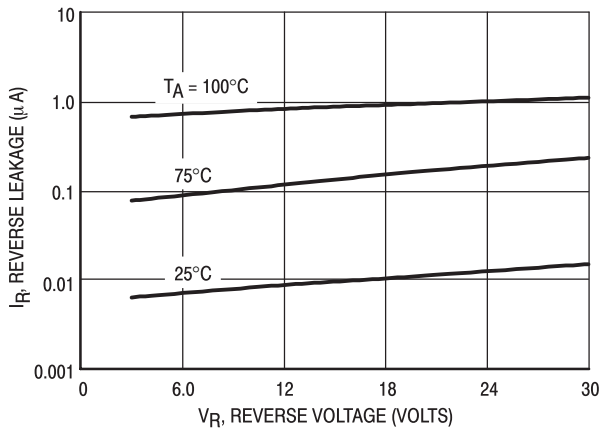


Figure 3. Reverse Leakage

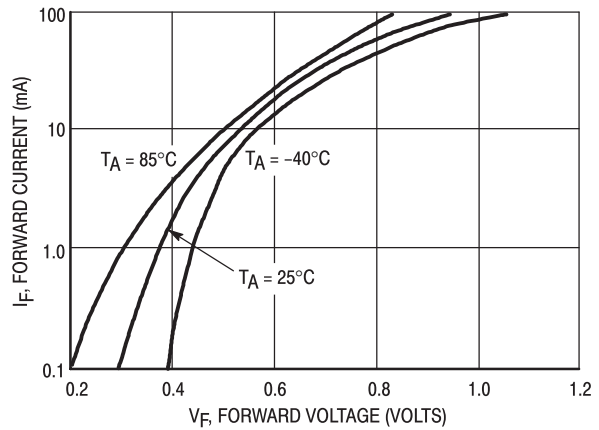


Figure 4. Forward Voltage

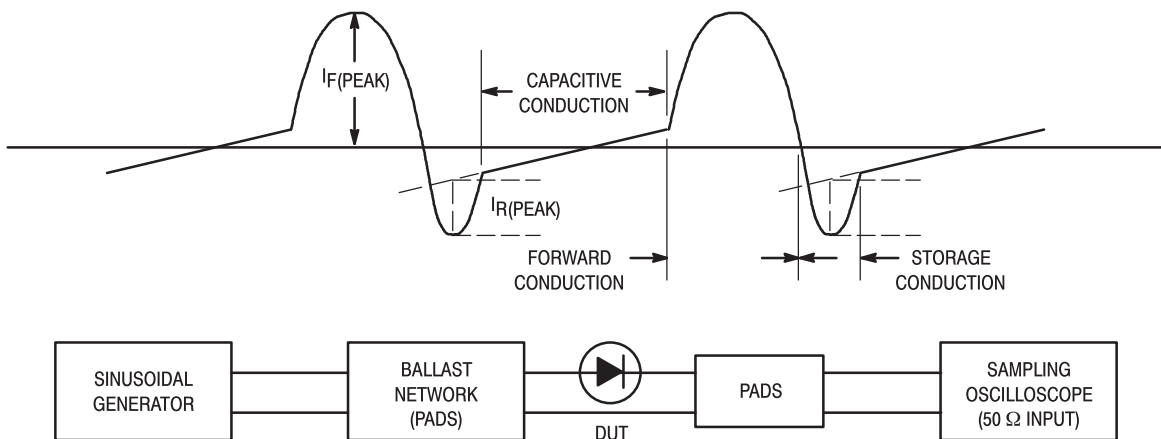


Figure 5. Krakaer Method of Measuring Lifetime