

OIMD6-001

Dual Common Cathode Schottky Barrier Diodes

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 ideal for medical applications where space is limited.

Features

- Extremely Fast Switching Speed
- Low Forward Voltage – 0.35 V (Typ) @ $I_F = 10$ mA
- AEC-Q101 Qualified and Built In a Medical Flow
- This is a Pb-Free Device

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

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	30	V
Forward Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_F	190 1.9	mW mW/ $^\circ\text{C}$
Forward Current (DC)	I_F	200 Max	mA
Junction Temperature	T_J	125 Max	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient (Note 1)	$R_{\theta JA}$	525	$^\circ\text{C}/\text{W}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

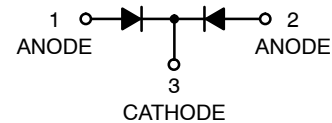
1. FR-5 board with minimum mounting pad.



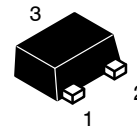
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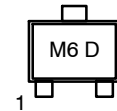
30 V DUAL COMMON CATHODE SCHOTTKY BARRIER DIODES



MARKING DIAGRAM



SOT-723
CASE 631AA
STYLE 3



M6 = Specific Device Code
D = Date Code

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

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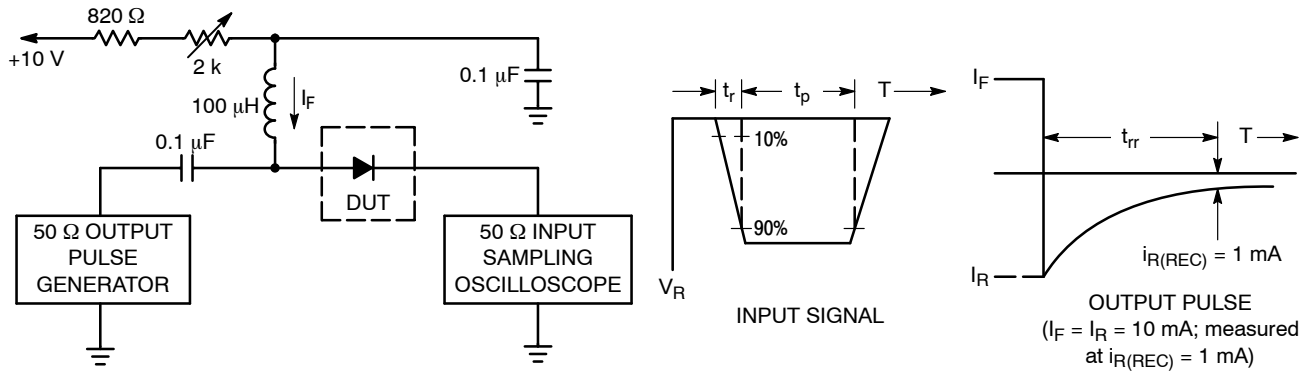
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) (EACH DIODE)

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

ORDERING INFORMATION

Device	Wirebond	Package	Shipping†
OIMD6-001-XTP	Au (Gold)	SOT-723 (Pb-Free)	8000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.



- 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

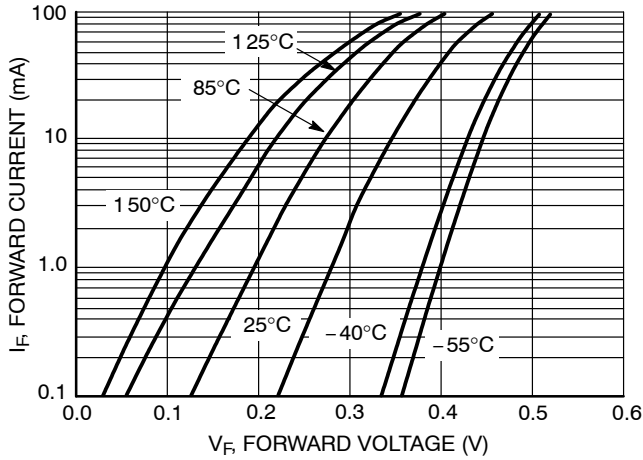


Figure 2. Forward Voltage

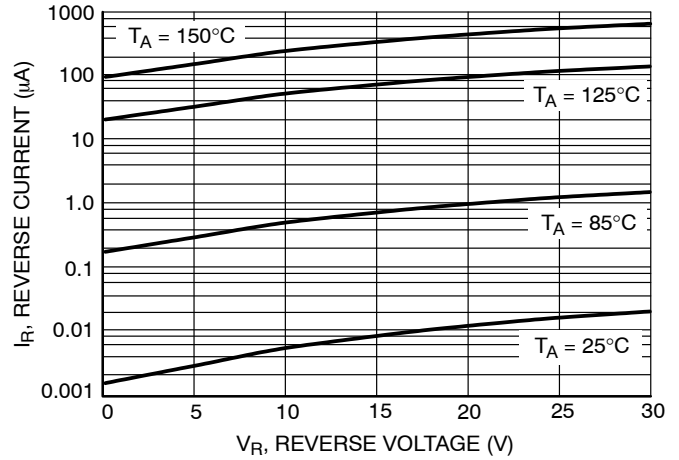


Figure 3. Leakage Current

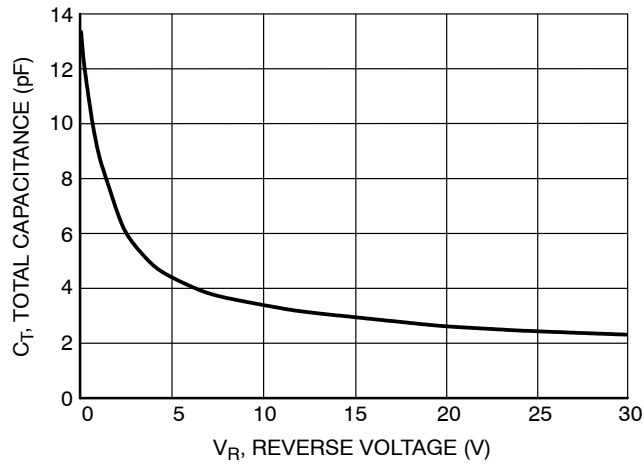
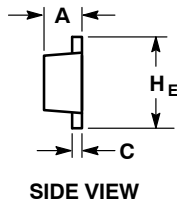
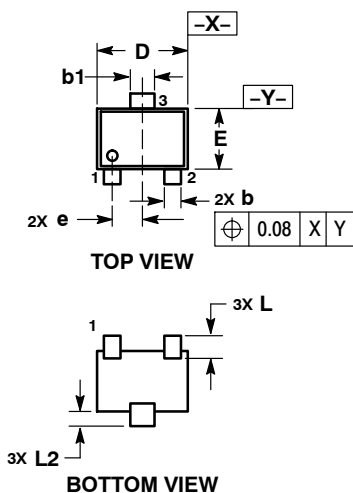


Figure 4. Total Capacitance

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PACKAGE DIMENSIONS

SOT-723 CASE 631AA ISSUE D

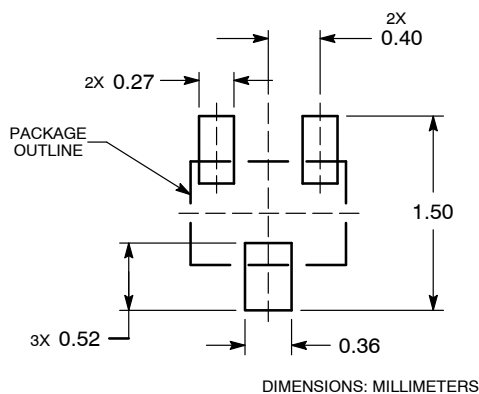


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
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		
	MIN	NOM	MAX
A	0.45	0.50	0.55
b	0.15	0.21	0.27
b1	0.25	0.31	0.37
C	0.07	0.12	0.17
D	1.15	1.20	1.25
E	0.75	0.80	0.85
e	0.40 BSC		
H E	1.15	1.20	1.25
L	0.29 REF		
L2	0.15	0.20	0.25


RECOMMENDED SOLDERING FOOTPRINT*



STYLE 3:

1. ANODE
2. ANODE
3. CATHODE

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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