

**Microsemi Corp.**

The diode experts

SANTA ANA, CA

SCOTTSDALE, AZ

For more information call:  
(602) 941-6300

**IN4156, IN4157, IN4453,  
IN4829, IN4830, IN5179  
STABISTORS**

Also, Tight Tolerance  
**MPD100 thru MPD400A**  
or  
**MZ2360 and MZ2361**

## APPLICATION

These axial lead diodes represent configurations of one to four\* p-n junctions in series which may be used in any application requiring tight tolerance, low voltage levels versus current. This method of low voltage regulation is comparatively superior in dynamic impedance (voltage change versus current) than low voltage zeners where tunneling instead of avalanche current is dominant. Typical applications include use as signal limiters, level shifters in transistor logic, meter protectors, and low voltage regulators. For computer circuit applications, a controlled stored charge selection is provided as well.

In addition, these devices may be used for temperature compensation wherein each p-n junction contributes approximately  $-2 \text{ mV}/^{\circ}\text{C}$  each.

\*Consult factory for more than four p-n junction configurations.

## DESCRIPTION/FEATURES

- Hermetically Sealed Glass Packages (DO-35)
- High Reverse Breakdown and Low Leakage
- Excellent Low Voltage Regulation
- Controlled Stored Charge
- Planar Passivated Die Elements

## MAXIMUM RATINGS

500 mW dc Power Rating\*\*

Power Derating  $4.0 \text{ mW}/^{\circ}\text{C}$  above  $50^{\circ}\text{C}$

Junction and Storage Temperatures:  $-65^{\circ}\text{C}$  to  $+175^{\circ}\text{C}$

\*\*Consult factory for ratings up to 1.5W.

## PACKAGE DIMENSIONS

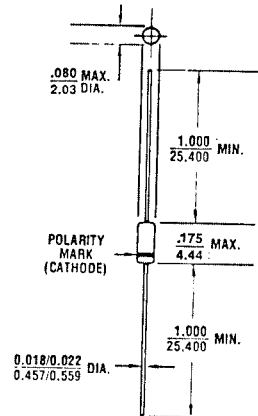


FIGURE 1

All dimensions in  $\frac{\text{INCH}}{\text{m.m.}}$

## DO-35

## MECHANICAL CHARACTERISTICS

**\*Case:** Hermetically sealed glass DO-35. DO-7 and DO-41 glass are optional. Single p-n junction devices also offered in DO-41 plastic.

**Finish:** All external surfaces are corrosion resistant and leads solderable.

**Thermal Resistance:**  $200^{\circ}\text{C}/\text{W}$  typical for DO-35 at 0.375 inches from body.

**Mounting Position:** Any.

**Polarity:** Cathode marked with band. To be operated with cathode negative for normal low voltage operation.

\* Designate case size when ordering.

TYPE	MAXIMUM REVERSE CURRENT			MINIMUM REVERSE BREAKDOWN VOLTAGE $V_{BR}$ (VOLTS) AT 5 $\mu$ A	FORWARD VOLTAGE $V_F$ (VOLTS) AT $I_F$ @ 25°C												STORED CHARGE AT 100 mA		MAXIMUM CAPACITANCE $C_j$ (pF) AT 0 VOLTS	NUMBER OF PN JUNCTIONS
	25°C mA	IS9°C $\mu$ A	@ V VOLTS		$I_F$ 100 mA		$I_F$ 0.10 mA		$I_F$ 1.00 mA		$I_F$ 10.0 mA		$I_F$ 100 $\mu$ mA		MIN.	MAX.				
					MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.						
IN4156	50	50	20	30	0.740	1.090	0.970	1.220	1.210	1.410	1.380	1.580	1.540	1.840	50	500	25	2		
IN4157	50	50	20	30	1.190	1.540	1.520	1.770	1.850	2.050	2.120	2.320	2.360	2.660	50	500	20	3		
IN4453	50	50	20	30	—	—	0.510	0.630	0.600	0.710	0.690	0.800	0.800	0.920	50	500	30	1		
IN4829	100	25@ 100°C	20	30 @ 100 $\mu$ A	—	—	0.840	1.25	0.99	1.44	1.16	1.61	1.35	1.87	—	—	25	2		
IN4830	100	25@ 100°C	20	30 @ 100 $\mu$ A	—	—	1.35	1.80	1.63	2.08	1.90	2.35	2.15	2.69	—	—	20	3		
1N5179	50	—	20	30	—	—	1.80	2.50	2.20	2.80	2.60	3.20	3.00	3.70	50	500	20	4		
MFD100	30	50	30	30	0.45	0.500	0.535	0.590	0.618	0.677	0.700	0.765	0.790	0.880	75	300	30	1		
MFD100A	30	50	30	30	0.45	0.500	0.535	0.590	0.618	0.677	0.700	0.765	0.790	0.880	800*	—	40	1		
MFD200	30	50	30	30	0.900	1.00	1.05	1.16	1.22	1.34	1.39	1.54	1.60	1.76	75	400	30	2		
MFD200A	30	50	30	30	0.900	1.00	1.05	1.16	1.22	1.34	1.39	1.54	1.60	1.76	800*	—	40	2		
MFD300	30	50	30	60	1.40	1.54	1.62	1.78	1.84	2.03	2.10	2.33	2.40	2.65	75	400	30	3		
MFD300A	30	50	30	60	1.40	1.54	1.62	1.78	1.84	2.03	2.10	2.33	2.40	2.65	800*	—	40	3		
MFD400	30	50	30	90	1.82	2.01	2.14	2.36	2.47	2.71	2.80	3.07	3.16	3.52	60	300	30	4		
MFD400A	30	50	30	90	1.82	2.01	2.14	2.36	2.47	2.71	2.80	3.07	3.16	3.52	800*	—	40	4		
**MZ2360	10 $\mu$ A	—	5.0	—	—	—	—	—	—	—	0.63	0.71	—	—	—	—	—	1		
**MZ2361	10 $\mu$ A	—	5.0	—	—	—	—	—	—	—	1.24	1.38	—	—	—	—	—	2		

\* $Q_S$  at 10.0 mA\*\*Optionally supplied in DO-41 glass or plastic with  $P_D = 1.5$  W.