low-leakage pico-amp diodes *designed for . . .*

Siliconix

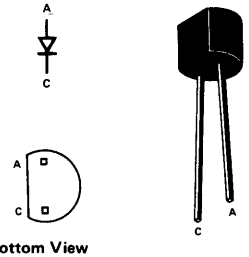
- **High Impedance Diode Switching**
- **High Dynamic Range Log Amps**
- **High Isolation Protection Circuits**

BENEFITS

- Low Cost

TO-92 (MODIFIED)
See Section 6

Plastic



ABSOLUTE MAXIMUM RATINGS (25°C)

Forward Current . . . . . 10 mA
Total Device Dissipation . . . . . 360 mW
Storage Temperature Range. . . . . –65°C to +135°C
Lead Temperature
(1/16" from case for 10 seconds) . . . . . 300°C

ELECTRICAL CHARACTERISTICS (25°C)

		Characteristic			Min	Typ	Max	Unit	Test Conditions
1	STATIC	I_R	Reverse Current (Note 1)	JPAD5			-5	pA	V_R = –20 V
				JPAD10			-10		
				JPAD20			-20		
				JPAD50			–50		
				JPAD100			–100		
				JPAD200			–200		
				JPAD500			–500		
2		BV_R	Breakdown Voltage (Reverse)		–35	–80		V	I_R = –1 μA
3		V_F	Forward Voltage Drop			0.8	1.5	V	I_F = 5 mA
4	DYN	C_R	Capacitance			1.5	2.0	pF	V_R = –5 V, f = 1 MHz

NOTE:

1. The JPAD type number denotes its maximum reverse current value in pico amps. Devices with I_R values intermediate to those shown are also available on request.

2

JR135V JR170V JR200V JR220V JR240V

high voltage protection diode

designed for. . .

- **High Impedance Diode Switching**
- **High Dynamic Range Log Amps**
- **High Isolation Protection Circuits**

Siliconix

Performance Curves VRMA
See Section 4

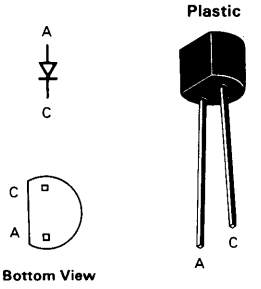
BENEFITS

- Offers High Voltage Protection
- Broad Current Range

ABSOLUTE MAXIMUM RATINGS (25°C)

Anode to Cathode Voltage
JR135V 135V
JR170V 170V
JR200V 200V
JR220V 220V
JR240V 240V
Forward Diode Current I_F 20mA
Reverse Diode Current I_F 50mA
Power Dissipation P_D 360mW
(Derate 3.27mW/°C)
Storage Temperature T_{STG} . . . . . −55°C to 150°C
Operating Temperature T_{OP} . . . . . −55°C to 135°C

TO-92 (MODIFIED)
See Section 6

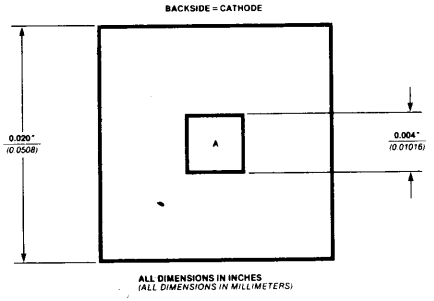


ELECTRICAL CHARACTERISTICS (25°C)

	Characteristic			Min	Typ	Max	Unit	Test Conditions
1	P_{OV}	Peak Operating Voltage[1]	JR135V	135			V	$I_F = 1mA$
			JR170V	170				
			JR200V	200				
			JR220V	220				
			JR240V	240				
2	I_F[1]	Forward Current		200			μA	$V_F = 2V$
	I_F[2]			200		770		$V_F = 100V$
3	V_L	Limiting Current				0.9	V	$I = 0.8\ I_F$[1]
4	Z_D	Dynamic Impedance			2		MΩ	$V_F = 25V$
5	$\Delta I_F/\Delta T$	I_F Temp Coefficient			+0.6		%/°C	$V_F = 2\text{-}100V$
								$T_A = -20$ to $+85°C$

VRMA

NOTE:
1. Pulse test duration 2 ms.



high voltage protection diode

designed for . . .

- **Limiting Current**
- **Voltage Protection**
- **Voltage Decoupling**

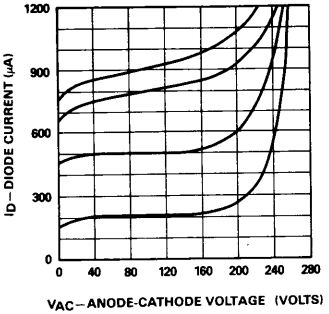
BENEFITS

- Series element
- Two terminals
- Simple to use
- High breakdown voltage (JR240V—240 volts)
- Low Cost

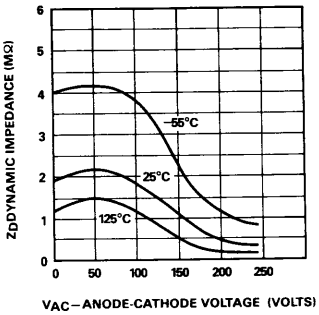
TYPE	PACKAGE	PRINCIPAL DEVICES
Single	TO-92	JR135V, JR170V, JR200V JR220V, JR240V

PERFORMANCE CURVES (25°C unless otherwise specified)

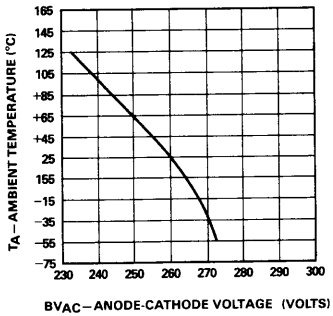
Output Characteristic



Dynamic Impedance Vs. Anode-Cathode Voltage at Temperature



Breakdown Voltage Vs. Temperature



Free Air Temperature Dissipation Derating Curve