

PAD/JPAD/SSTPAD Series

Low-Leakage Pico-Amp Diodes

PAD1 JPAD5 SSTPAD5
PAD5 JPAD50 SSTPAD100
PAD50

Product Summary

Part Number	I _R Max (pA)
PAD1	-1
PAD5/JPAD5/SSTPAD5	-5
PAD50/JPAD50	-50
SSTPAD100	-100

Features

- Ultralow Leakage: PAD1 <1 pA
- Ultralow Capacitance: PAD1 <0.8 pF
- Two-Leaded Package

Benefits

- Negligible Circuit Leakage Contribution
- Circuit "Transparent" Except to Shunt High-Frequency Spikes
- Simplicity of Operation

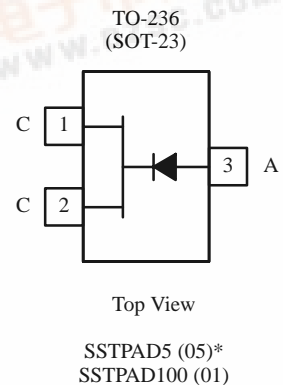
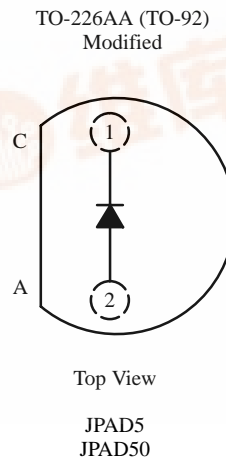
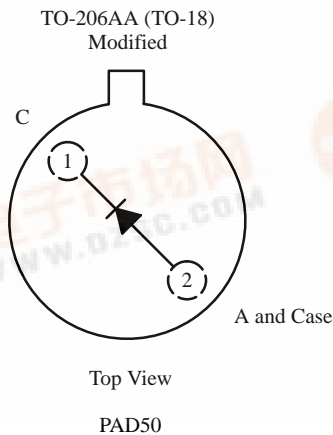
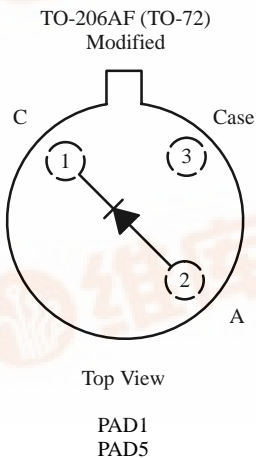
Applications

- Op Amp Input Protection
- Multiplexer Overvoltage Protection

Description

The PAD/JPAD/SSTPAD series of extremely low-leakage diodes provides a superior alternative to conventional diode technology when reverse current (leakage) must be minimized. They feature leakage currents ranging from -1 pA (PAD1) to -100 pA (SSTPAD100) to support a wide range of applications. These devices are well suited for use in applications such as input protection for operational amplifiers.

The hermetically sealed TO-206AF (TO-72) package allows full military processing per MIL-S-19500 (see Military Information). The TO-226A (TO-92) plastic package provides a low-cost option. The TO-236 (SOT-23) package provides surface-mount capability. Both J and SST series are available in tape-and-reel for automated assembly. (See Packaging Information.)



*Marking Code for TO-236



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Absolute Maximum Ratings^a

Forward Current:	(PAD) 50 mA	Lead Temperature (¹ / ₁₆ " from case for 10 sec.) 300°C
	(JPAD/SSTPAD) 10 mA	
Total Device Dissipation:	(PAD) ^b 300 mW	Notes:
	(JPAD/SSTPAD) ^b 350 mW	a. T _A = 25°C unless otherwise noted.
Operation Junction Temp:	(PAD) -55 to 175°C	b. Derate 2 mW/°C above 25°C.
	(JPAD/SSTPAD) ^c -55 to 150°C	c. Derate 2.8 mW/°C above 25°C.

Specifications^a

Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ ^b	Max	
Static						
Reverse Current	I _R	V _R = -20 V	PAD1	-0.3	-1	pA
			PAD5/JPAD5/SSTPAD5	-1	-5	
			PAD50/JPAD50	-5	-50	
			SSTPAD100	-10	-100	
Reverse Breakdown Voltage	BV _R	I _R = -1 μA	PAD1/PAD5	-45	-60	V
			SSTPAD5/100	-30	-55	
			All Others	-35	-55	
Forward Voltage Drop	V _F	I _F = 1 mA		0.8	1.5	
Dynamic						
Reverse Capacitance	C _R	V _R = -5V, f = 1 MHz	PAD1/PAD5	0.5	0.8	pF
			All Others	1.5	2	

Notes:

- a. T_A = 25°C unless otherwise noted. NT/NPA
- b. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.

Typical Characteristics

