



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

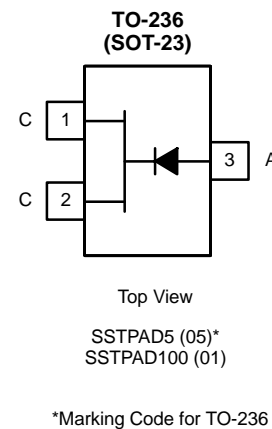
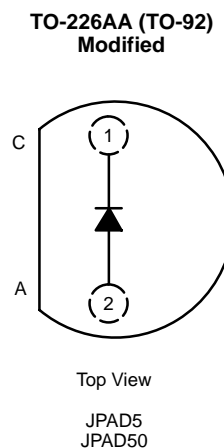
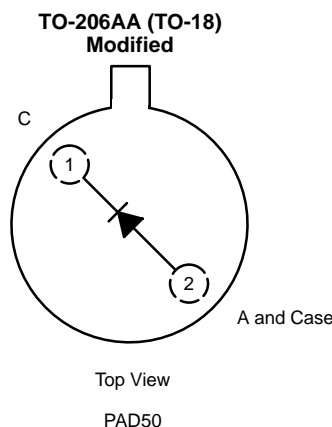
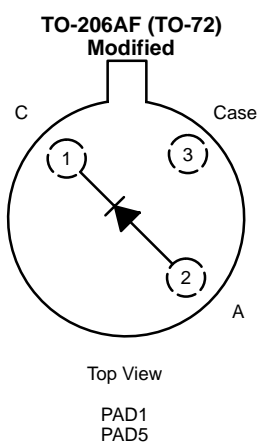
APPLICATIONS

- 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.)



ABSOLUTE MAXIMUM RATINGS^a

Forward Current:	(PAD	50 mA
	(JPAD/SSTPAD)	10 mA
Total Device Dissipation:	(PAD) ^b	300 mW
	(JPAD/SSTPAD) ^b	350 mW
Operation Junction Temp:	(PAD)	-55 to 175°C
	(JPAD/SSTPAD) ^c	-55 to 150°C
Lead Temperature (¹ / ₁₆ " from case for 10 sec.)		300°C

Notes:

- a. $T_A = 25^\circ\text{C}$ unless otherwise noted.
- b. Derate 2 mW/ $^\circ\text{C}$ above 25°C.
- c. Derate 2.8 mW/ $^\circ\text{C}$ above 25°C.

SPECIFICATIONS SPECIFICATIONS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ ^a	Max	
Static						
Reverse Current	I_R	$V_R = -20\text{ V}$	PAD1	-0.3	-1	pA
			PAD5/JPAD5/SSTPAD5	-1	-5	
			PAD50/JPAD50	-5	-50	
			SSTPAD100	-10	-100	
Reverse Breakdown Voltage	BV_R	$I_R = -1\ \mu\text{A}$	PAD1/PAD5	-45	-60	V
			SSTPAD5/100	-30	-55	
			All Others	-35	-55	
Forward Voltage Drop	V_F	$I_F = 1\text{ mA}$		0.8	1.5	
Dynamic						
Reverse Capacitance	C_R	$V_R = -5\text{V}, f = 1\text{ MHz}$	PAD1/PAD5	0.5	0.8	pF
			All Others	1.5	2	

Notes:

- a. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.

TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

