

Dual Low-Leakage Pico-Amp Diodes

DPAD1 **SSTDPAD5**
DPAD5 **SSTDPAD100**
DPAD50

Product Summary

Part Number	I _R Max (pA)
DPAD1	-1
DPAD/SSTDPAD5	-5
DPAD50	-50
SSTDPAD100	-100

Features

- Ultralow Leakage: DPAD1 <1 pA
- Ultralow Capacitance: DPAD1 <0.8 pF

Benefits

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

Applications

- Op Amp Input Protection
- Multiplexer Overvoltage Protection

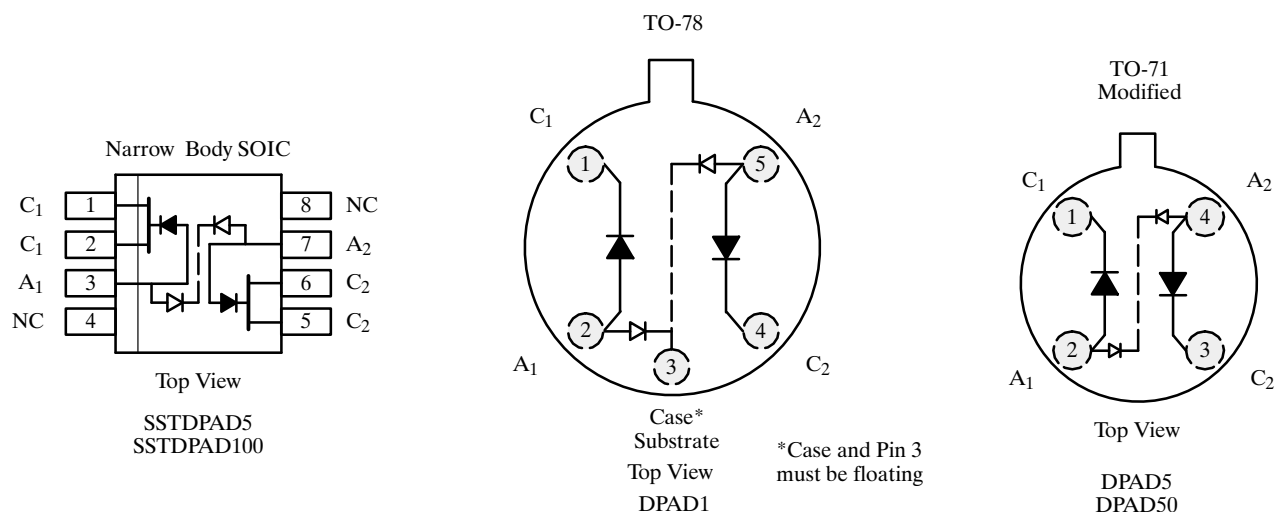
Description

The DPAD/SSTDPAD series of extremely low-leakage diodes provides a superior alternative to conventional diode technology when reverse current (leakage) must be minimized. These devices feature leakage currents ranging from -1 pA (DPAD1) to -100 pA (SSTDPAD100) to support a wide range of applications.

(SSTDPAD) package allows maximum circuit performance. Tape-and-reel options are available for automated assembly (see Packaging Information).

The low-cost, compact, narrow-body SO-8

The TO-78 and TO-71 (DPAD) hermetically sealed metal cans are available with full military processing per MIL-S-19500 (see Military Information).



DPAD/SSTDPAD Series

Absolute Maximum Ratings^a

Forward Current 50 mA
 Storage Temperature -55 to 150°C
 Operating Junction Temperature -55 to 150°C
 Lead Temperature (1/16" from case for 10 sec.) 300°C

Total Device Dissipation^b 500 mW

Notes:

- a. $T_A = 25^\circ\text{C}$ unless otherwise noted.
- b. Derate 4 mW/°C at 25°C.

Specifications^a

Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ ^b	Max	
Static						
Reverse Current	I_R	$V_R = -20\text{ V}$	DPAD1	-0.2	-1	pA
			DPAD5/SSTDPAD5	-2	-5	
			DPAD50	-5	-50	
			SSTDPAD100	-10	-100	
Reverse Breakdown Voltage	BV_R	$I_R = -1\ \mu\text{A}$	DPAD1	-45	-60	V
			DPAD5/DPAD50	-45	-55	
			SSTDPAD5/SSTDPAD100	-30	-50	
Forward Voltage Drop	V_F	$I_F = 1\text{ mA}$		0.8	1.5	
Dynamic						
Reverse Capacitance	C_R	$V_R = -5\text{ V}, f = 1\text{ MHz}$	DPAD1	0.6	0.8	pF
			DPAD5/DPAD50	1.0	2.0	
			SSTDPAD5/SSTDPAD100	2.0	4.0	
Differential Capacitance	$ C_{R1} - C_{R2} $	$V_{R1} = V_{R2} = -5\text{ V}$ $f = 1\text{ MHz}$	DPAD1	0.07	0.2	
			All Others	0.1	0.5	

Notes:

- a. $T_A = 25^\circ\text{C}$ unless otherwise noted.
- b. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.

Typical Characteristics

