

DPAD/SSTDPAD Series

Dual Low-Leakage Pico-Amp Diodes

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

Product Summary

Part Number	I _R Max (pA)
DPAD1	-1
DPAD5/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

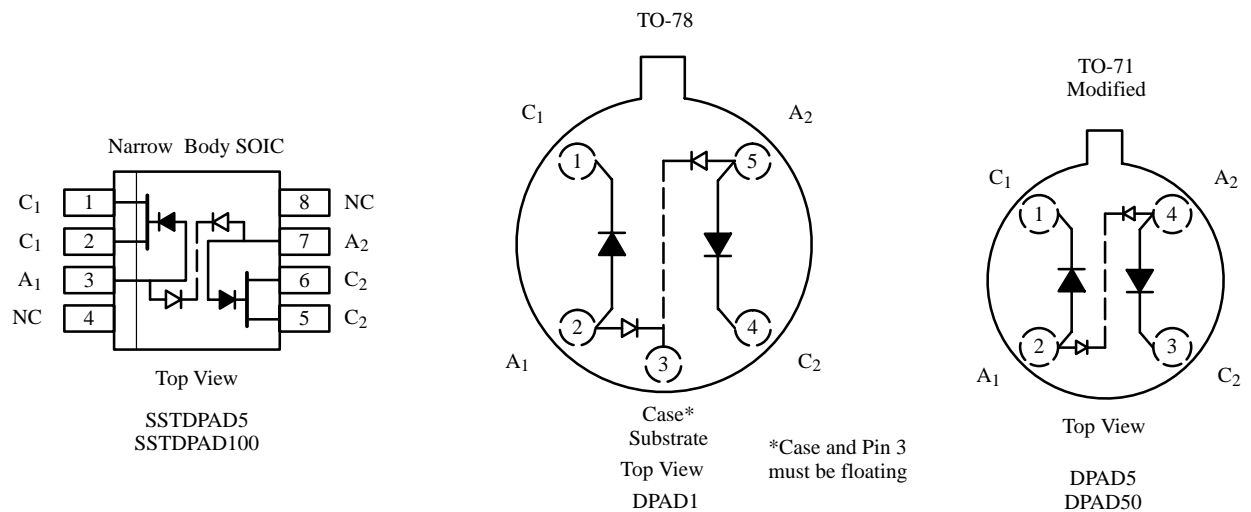
- Op Amp Input Protection
- Multiplexer Overvoltage Protection

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.

The low-cost, compact, narrow-body SO-8 (SSTDPAD) package allows maximum circuit performance. Tape-and-reel options are available for automated assembly (see Packaging Information).

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



Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70340.

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Absolute Maximum Ratings^a

Forward Current	50 mA	Total Device Dissipation ^b	500 mW
Storage Temperature	-55 to 150°C	Notes:	
Operating Junction Temperature	-55 to 150°C	a. $T_A = 25^\circ\text{C}$ unless otherwise noted.	
Lead Temperature ($1/16''$ from case for 10 sec.)	300°C	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:

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

Typical Characteristics

