



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

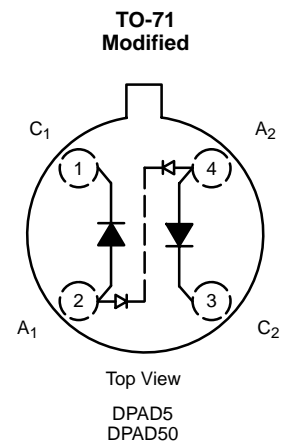
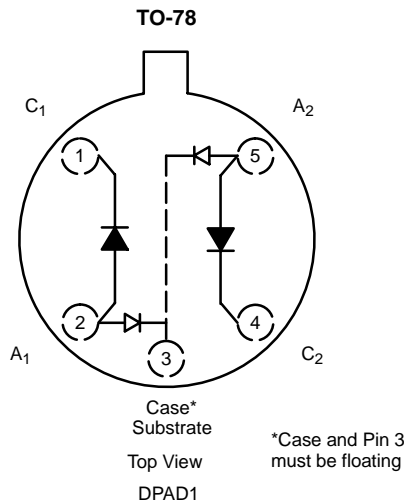
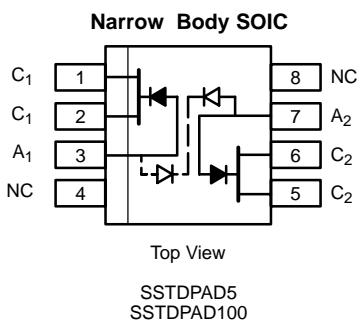
- Op Amp Input Protection
- Multiplexer Overvoltage Protection

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).



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:

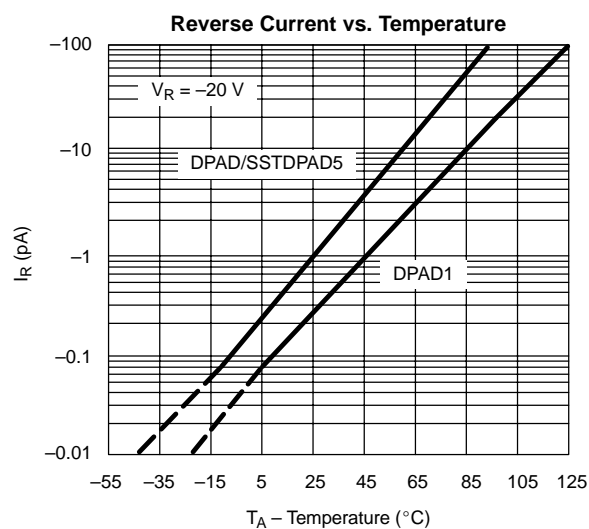
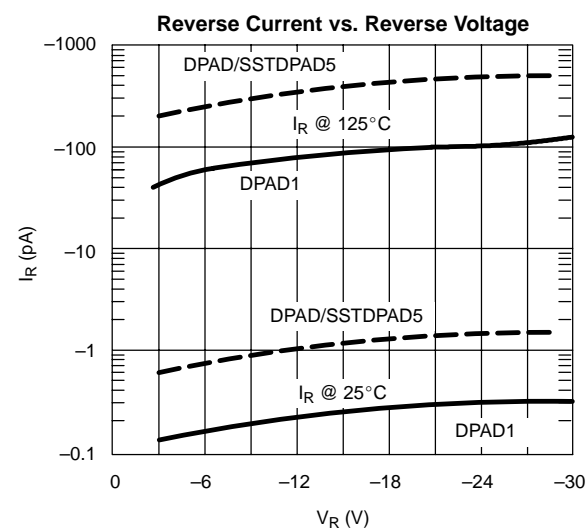
- $T_A = 25^\circ\text{C}$ unless otherwise noted.
- Derate 4 mW/°C at 25°C.

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	$V_R = -20\text{ V}$	DPAD1	-0.2	-1	pA	
			DPAD5/SSTDPAD5	-2	-5		
			DPAD5/SSTDPAD5/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	pF	
			All Others	0.1	0.5		

Notes:

- 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)





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