

# Dual Pico Amp Diodes



## DPAD1 / DPAD2 / DPAD5 / DPAD10 / DPAD20 / DPAD50 / DPAD100 SSTDPAD5 / SSTDPAD10 / SSTDPAD20 / SSTDPAD50 / SSTDPAD100

### FEATURES

- High OFF Isolation. . . . . 1 pA max DPAD1
- Excellent Isolation between diodes. . . . . Typical 20 fA
- Matched Capacitance

### APPLICATIONS

- Op Amp Protection Devices
- Diode Switching
- High Impedance Protection

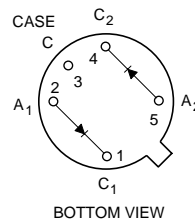
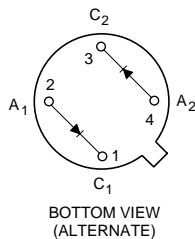
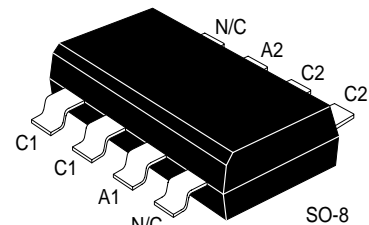
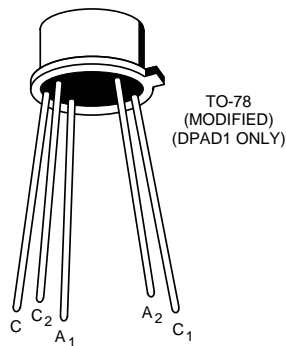
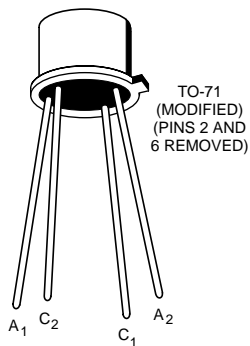
### DESCRIPTION

Calogic's ultra low leakage dual pico amp diodes out perform conventional diodes for applications where reverse current (leakage) is critical and must be kept at a minimum. The devices have very low capacitance and are also fast switching. Housed in a compact dual hermetic package and a plastic surface mount SO-8 this product is also available in chip form for hybrid uses.

### ORDERING INFORMATION

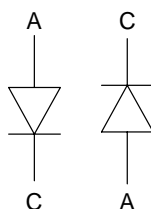
Part	Package	Temperature Range
DPAD1	Hermetic TO-78	-55 to +150°C
DPAD2/50	Hermetic TO-71	-55 to +150°C
SSTDPAD5/100	Plastic SO-8	-55 to +150°C
XDPAD5/100	Sorted Chips in Carriers	-55 to +150°C

### PIN CONFIGURATION



CJ1, CJ2, CJ4

### SCHEMATIC DIAGRAM

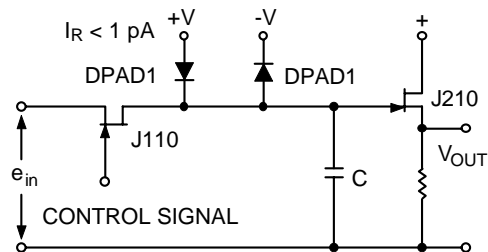
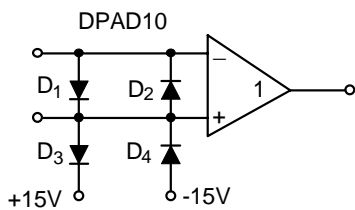


**ABSOLUTE MAXIMUM RATINGS (25°C)**

Forward Gate Current, Each Side .....	50 mA
Total Device Dissipation @ T <sub>A</sub> = 25°C	
Derate 4.0 mW/°C to 125°C .....	400 mW
Storage Temperature Range .....	-55 to +125°C
Lead Temperature (1/16" from case for 10 seconds) .....	300°C

**ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)**

SYMBOL	CHARACTERISTICS	MIN	TYP	MAX	UNIT	TEST CONDITIONS
<b>STATIC</b>						
I <sub>R</sub>	Reverse Current			-1	pA	V <sub>R</sub> = -20 V
				-2		
				-5		
				-10		
				-20		
				-50		
				-100		
BV <sub>R</sub>	Breakdown Voltage (Reverse)	-45		-120	V	I <sub>R</sub> = -1 μA
		-35				
V <sub>F</sub>	Forward Voltage Drop		0.8	1.5		I <sub>F</sub> = 5 mA
<b>DYNAMIC</b>						
C <sub>R</sub>	Capacitance			0.8	pF	V <sub>R</sub> = -5 V, f = 1 MHz
				2.0		
CR1 - CR2	Differential Capacitance		0.1	0.2	pF	V <sub>R1</sub> = V <sub>R2</sub> = -5 V, f = 1 MHz



**APPLICATION**

Operational Amplifier Protection. Input Differential Voltage limited to 0.8 V (typ) by DPADS D<sub>1</sub> and D<sub>2</sub> Common mode input voltage limited by DPADS D<sub>3</sub> and D<sub>4</sub> to ±15V.

Typical sample and hold circuit with clipping, DPAD diodes reduce offset voltages fed capacitively from the FET switch gate.