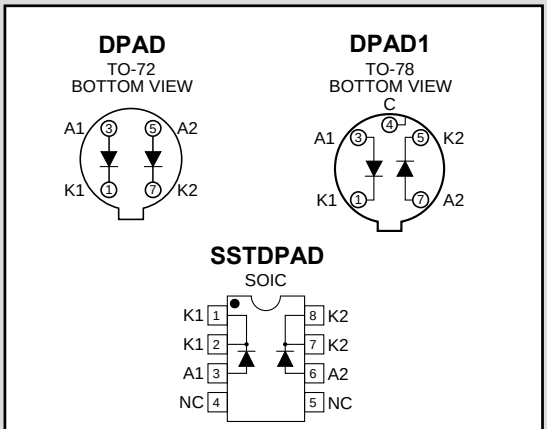
LINEAR SYSTEMS

Linear Integrated Systems

DPAD SERIES

MONOLITHIC DUAL PICO AMPERE DIODES

FEATURES	
Direct Replacement For SILICONIX DPAD SERIES	
HIGH ON ISOLATION	20fA
EXCELLENT CAPACITANCE MATCHING	$\Delta C_R \leq 0.2pF$
ABSOLUTE MAXIMUM RATINGS[1]	
@ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-65 to +150 °C
Operating Junction Temperature	-55 to +135 °C
Maximum Power Dissipation	
Continuous Power Dissipation (DPAD)	500mW
Maximum Currents	
Forward Current (DPAD)	50mA



COMMON ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC		MIN	TYP	MAX	UNITS	CONDITIONS
BV_R	Reverse Breakdown Voltage	DPAD1	-45			V	I_R = -1µA
		DPAD2,5,10,20,50,100	-45				
		SSTDPAD5,50,100	-30				
V_F	Forward Voltage			0.8	1.5		I_F = 1mA
$\lvert C_{R1}-C_{R2}\rvert$	Differential Capacitance (ΔC_R)	DPAD1			0.2	pF	$V_{R1} = V_{R2}$ = -5V, *f* = 1MHz
		ALL OTHERS			0.5		
C_{rss}	Total Reverse Capacitance	DPAD1			0.8		V_R = -5V, *f* = 1MHz
		DPAD2,5,10,20,50,100			2.0		
		SSTDPAD5,50,100			4.0		

SPECIFIC ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC		DPAD[2]	SSTDPAD[2]	UNITS	CONDITIONS
I_R	Maximum Reverse Leakage Current[2]	(SST)DPAD1	-1		pA	V_R = -20V
		(SST)DPAD2	-2			
		(SST)DPAD5	-5	-5		
		(SST)DPAD10	-10			
		(SST)DPAD20	-20			
		(SST)DPAD50	-50	-50		
		(SST)DPAD100	-100	-100		

Figure 1. Operational Amplifier Protection
Input Differential Voltage limited to 0.8V (typ) by DPADs D_1 and D_2. Common Mode Input voltage limited by DPADs D_3 and D_4 to ±15V.

Figure 2. Sample and Hold Circuit
Typical Sample and Hold circuit with clipping. DPAD diodes reduce offset voltages fed capacitively from the JFET switch gate.

FIGURE 1

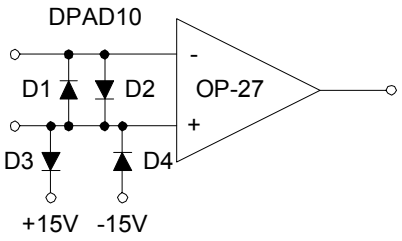
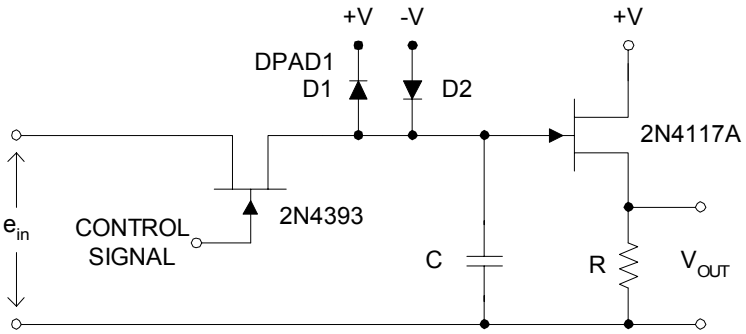
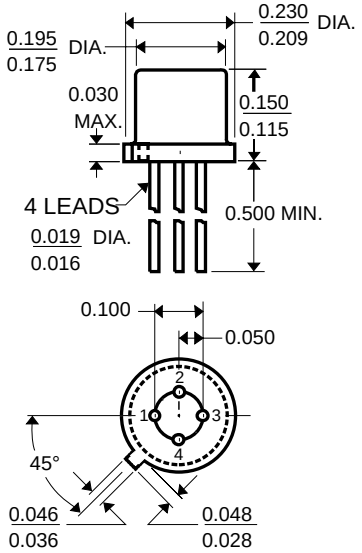


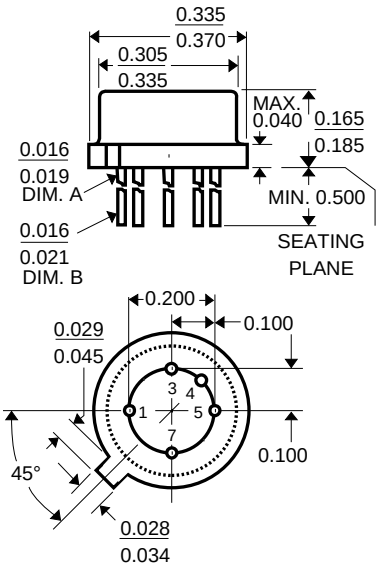
FIGURE 2



TO-72
Four Lead



TO-78



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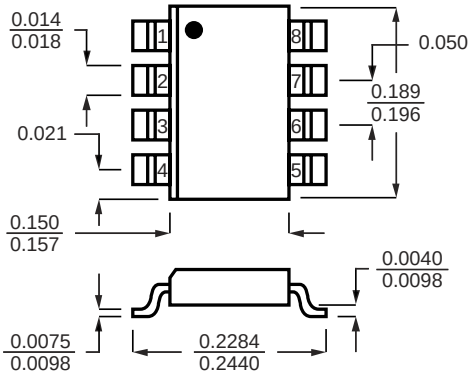

DIMENSIONS IN INCHES

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. The DPAD type number denotes its maximum reverse current value in pico amperes. Devices with I_R values intermediate to those shown are available upon request.