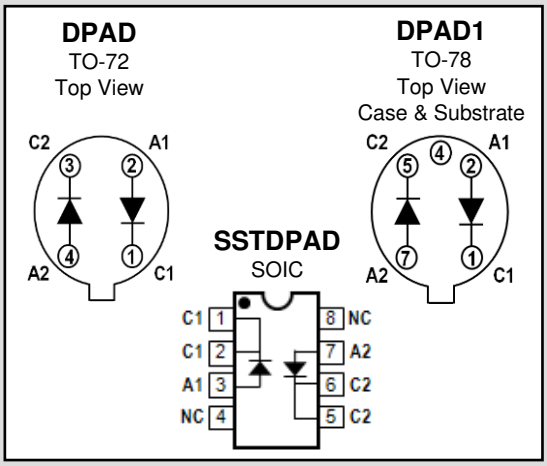
LINEAR SYSTEMS

Over 30 Years of Quality Through Innovation

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	-55ºC to +150°C
Operating Junction Temperature	-55ºC to +150°C
Maximum Power Dissipation	
Continuous Power Dissipation (DPAD)[3]	500mW
Maximum Currents	
Forward Current (DPAD)	50mA



* Case and Pin 4 must be floating on all TO-78 case devices

COMMON ELECTRICAL CHARACTERISTICS @ 25ºC (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 @ 25ºC (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		

Linear Integrated Systems

• 4042 Clipper Court • Fremont, CA 94538 • Tel: 510 490-9160 • Fax: 510 353-0261

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

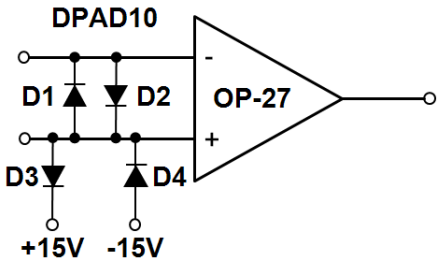
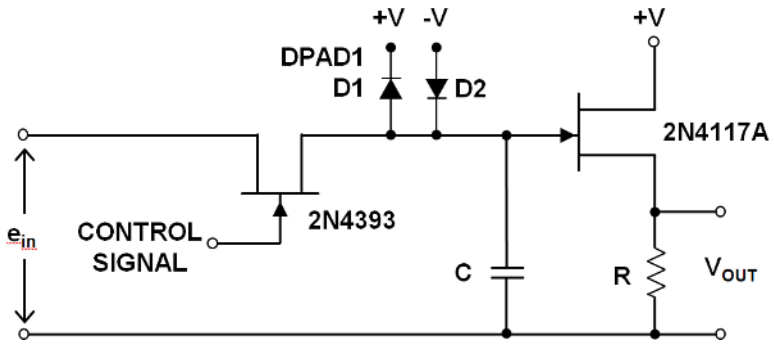
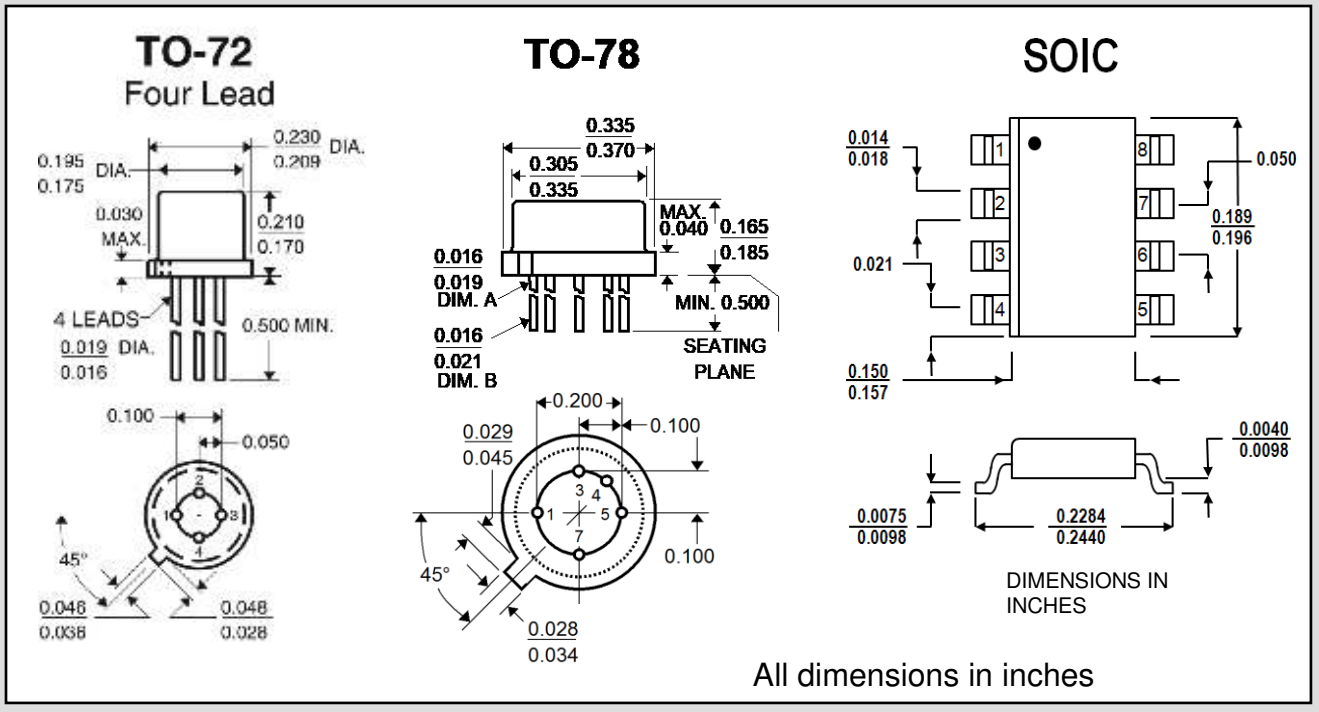


FIGURE 2





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.
3. Derate 4 mW/ºC above 25ºC

Linear Integrated Systems (LIS) is a 25-year-old, third-generation precision semiconductor company providing high-quality discrete components. Expertise brought to LIS is based on processes and products developed at Amelco, Union Carbide, Intersil and Micro Power Systems by company President John H. Hall. Hall, a protégé of Silicon Valley legend Dr. Jean Hoerni, was the director of IC Development at Union Carbide, co-founder and vice president of R&D at Intersil, and founder/president of Micro Power Systems.