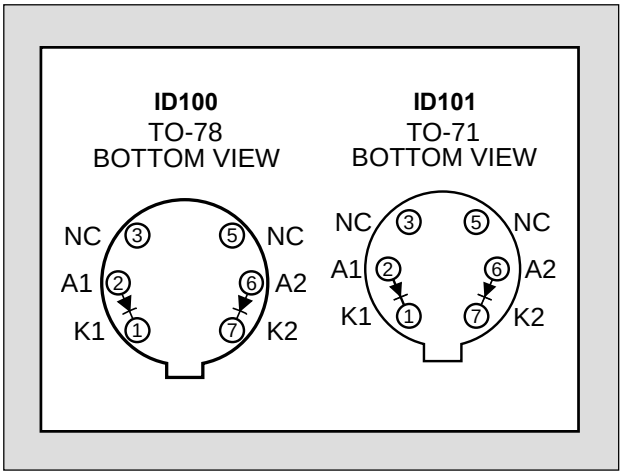
LINEAR SYSTEMS

Linear Integrated Systems

ID100 ID101

MONOLITHIC DUAL PICO AMPERE DIODES

FEATURES	
DIRECT REPLACEMENT FOR INTERSIL ID100 & ID101	
REVERSE LEAKAGE CURRENT	I_R = 0.1pA
REVERSE BREAKDOWN VOLTAGE	$BV_R \geq 30V$
REVERSE CAPACITANCE	C_{rss} = 0.75pF
ABSOLUTE MAXIMUM RATINGS[1] @ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-65 to +200 °C
Operating Junction Temperature	-55 to +150 °C
Maximum Power Dissipation	
Continuous Power Dissipation	300mW
Maximum Currents	
Forward Current	20mA
Reverse Current	100µA
Maximum Voltages	
Reverse Voltage	30V
Diode to Diode Voltage	±50V



ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
BV_R	Reverse Breakdown Voltage	30			V	I_R = 1µA
V_F	Forward Voltage	0.8		1.1		I_F = 10mA
I_R	Reverse Leakage Current		0.1		pA	V_R = 1V
			2.0	10		V_R = 10V
$\|I_{R1}-I_{R2}\|$	Differential Leakage Current			3		
C_{rss}	Total Reverse Capacitance[2]		0.75	1	pF	V_R = 10V, *f* = 1MHz

Figure 1. Operational Amplifier Protection
Input Differential Voltage limited to 0.8V (typ) by Diodes ID100 D_1 and D_2.
Common Mode Input voltage limited by Diodes ID100 D_3 and D_4 to ±15V.

Figure 2. Sample and Hold Circuit
Typical Sample and Hold circuit with clipping. ID100 diodes reduce offset voltages fed capacitively from the ID100 switch gate.

FIGURE 1

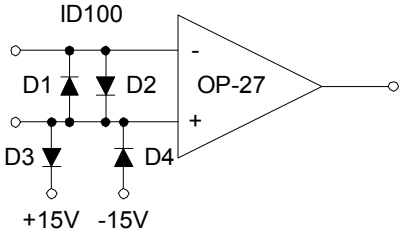
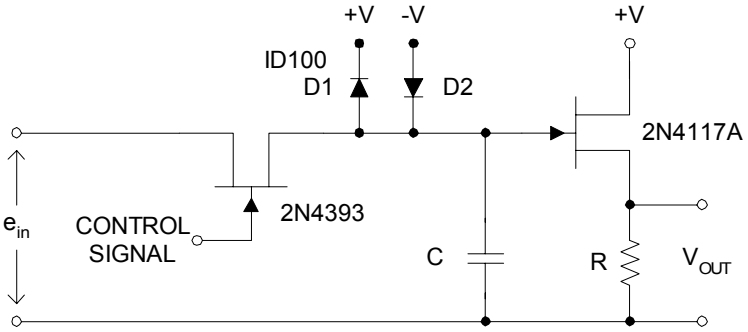


FIGURE 2



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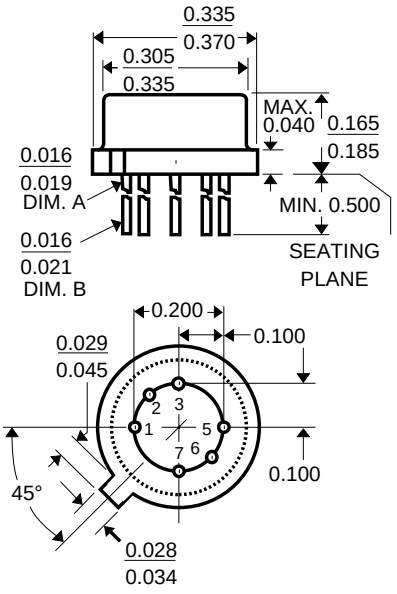
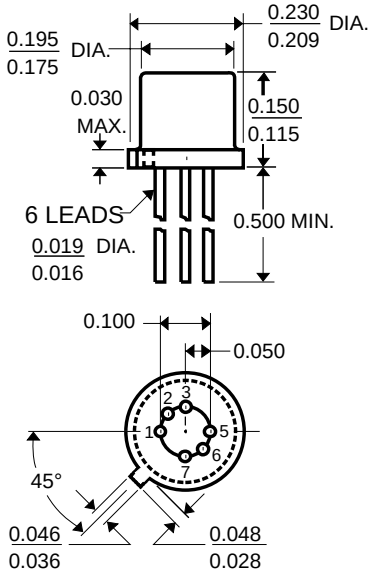


TO-71
Six Lead



1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Design reference only, not 100% tested.
3. Pins 3 & 5 on ID100 and ID101 must not be connected, in any fashion or manner, to any circuit or node.