

LINEAR SYSTEMS

Twenty-Five Years Of Quality Through Innovation

FEATURES

DIRECT REPLACEMENT FOR INTERSIL ID100 & ID101

REVERSE LEAKAGE CURRENT $I_R = 0.1\text{pA}$

REVERSE BREAKDOWN VOLTAGE $BV_R \geq 30\text{V}$

REVERSE CAPACITANCE $C_{RSS} = 0.75\text{pF}$

ABSOLUTE MAXIMUM RATINGS¹

@ 25 °C (unless otherwise stated)

Maximum Temperatures

Storage Temperature -65 to +150 °C

Operating Junction Temperature -55 to +150 °C

Maximum Power Dissipation @ TA = + 25°

Continuous Power Dissipation 300mW

Maximum Currents

Forward Current 20mA

Reverse Current 100µA

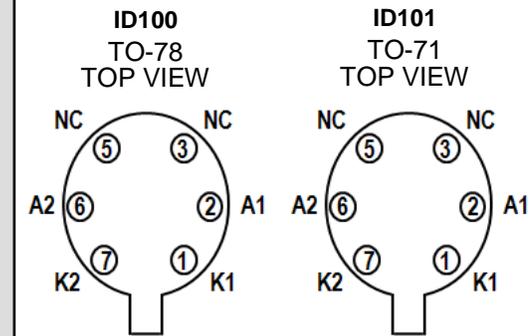
Maximum Voltages

Reverse Voltage 30V

Diode to Diode Voltage ±50V

ID100 ID101

MONOLITHIC DUAL PICO AMPERE DIODES



ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

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

Figure 1. Operational Amplifier Protection

Input Differential Voltage limited to 0.8V (typ) by Diodes ID100 D₁ and D₂. Common Mode Input voltage limited by Diodes ID100 D₃ and D₄ 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

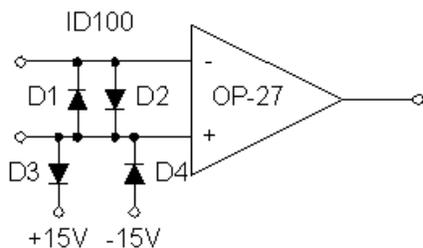
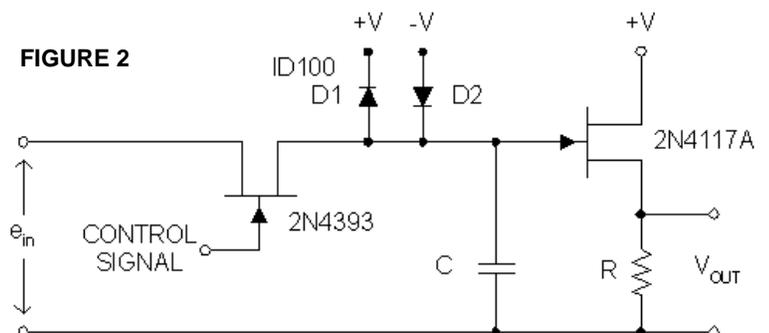
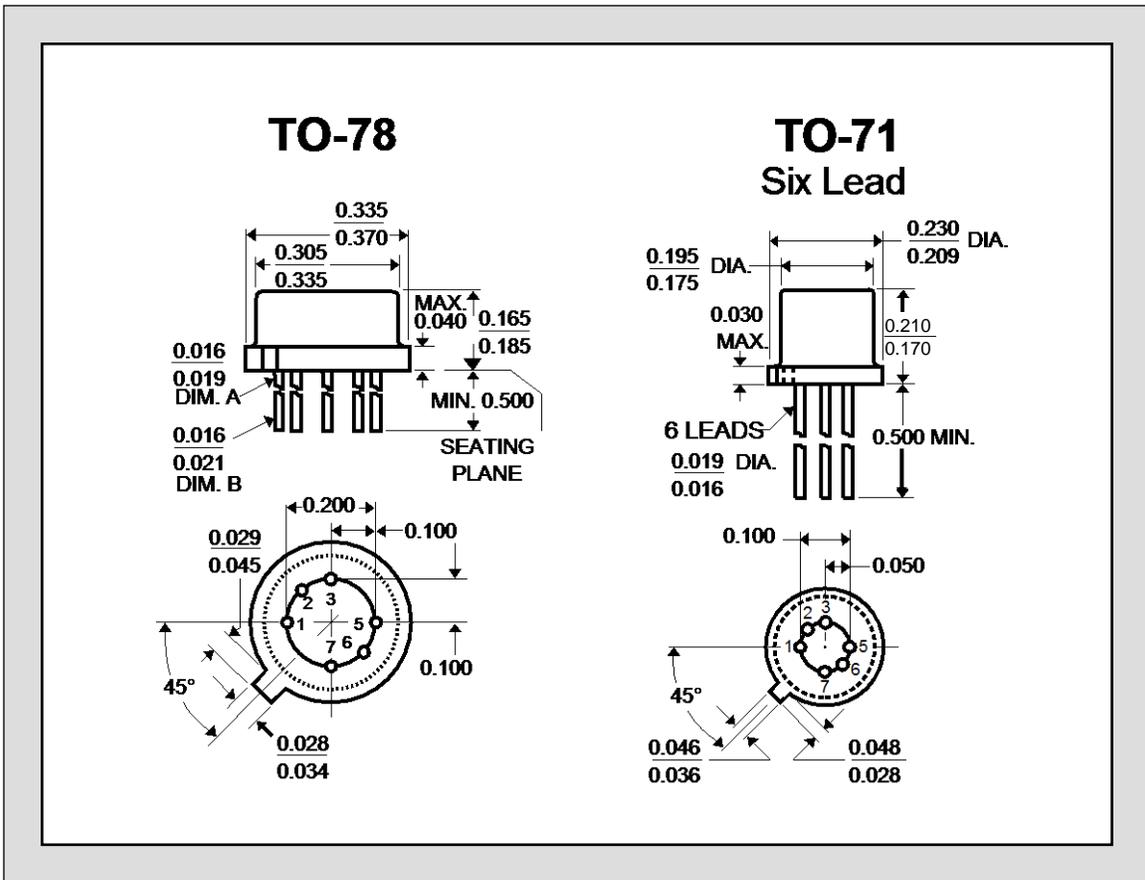


FIGURE 2





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.

Information furnished by Linear Integrated Systems is believed to be accurate and reliable. However, no responsibility is assumed for its use; nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Linear Integrated Systems.

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.