

ID100 LOW LEAKAGE PICO-AMP DUAL DIODE



Linear Systems replaces discontinued Intersil ID100 The ID100 is a low leakage Monolithic Dual Pico-Amp Diode

The ID100 low-leakage monolithic dual diode provides a superior alternative to conventional diode technology when reverse current (leakage) must be minimized. In addition the monolithic dual construction allows excellent capacitance matching per diode. The ID100 features a leakage current of 0.1 pA and is well suited for use in applications such as input protection for operational amplifiers.

ID100 Benefits:

- Negligible Circuit Leakage Contribution
- Circuit "Transparent" Except to Shunt High-Frequency Spikes
- Simplicity of Operation

ID100 Applications:

- Op Amp Input Protection
- Multiplexer Overvoltage Protection

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

ID100 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

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SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS	
BV_R	Reverse Breakdown Voltage	30			V	I _R = 1μA	
V_{F}	Forward Voltage	0.8		1.1	V	I _F = 10mA	
I _R	Reverse Leakage Current		0.1			V _R = 1V	
			2.0	10	рА	V _R = 10V	
I _{R1} -I _{R2}	Differential Leakage Current			3			
C _{rSS}	Total Rever <mark>se</mark> Cap <mark>ac</mark> itance(Note 2)		0.75	1	pF	$V_R = 10V, f = 1MHz$	

Note 1 - Absolute maximum ratings are limiting values above which ID100 serviceability may be impaired.

Note 2 - Design reference only, not 100% tested

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 ± 15 V.

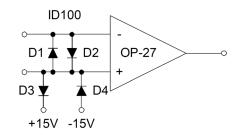
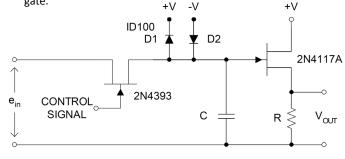


FIGURE 2 - Sample & Hold Circuit

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



TO-78 (Bottom View)



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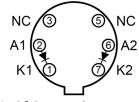
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Available Packages:

ID100 in TO-78 ID100 available as bare die

Please contact Micross for full package and die dimensions



Note pins 3 & 5 must not be connected, in any fashion or manner, to any circuit or node

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