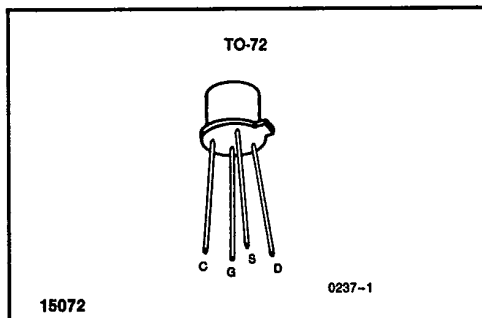


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T-37-25
 **INTERSil****3N161**
Diode Protected P-Channel
Enhancement Mode MOSFET
General Purpose Amplifier/Switch**FEATURES**

- Channel Cut Off With Zero Gate Voltage
- Square-Law Transfer Characteristic Reduces Distortion
- Independent Substrate Connection Provides Flexibility in Biasing
- Internally Connected Diode Protects Gate From Damage Due to Overvoltage

PIN CONFIGURATION**ABSOLUTE MAXIMUM RATINGS**

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Drain-Source or Drain-Gate Voltage	40V
Drain Current	50mA
Gate Forward Current	10 μA
Gate Reverse Current	1mA
Storage Temperature	-65°C to $+200^\circ\text{C}$
Operating Temperature	-55°C to $+150^\circ\text{C}$
Lead Temperature (Soldering, 10sec)	$+300^\circ\text{C}$
Power Dissipation	375mW
Derate above 25°C	3.0mW/ $^\circ\text{C}$

NOTE: Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ORDERING INFORMATION

TO-72
3N161

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ and $V_{DS} = 0$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Max	Units
I_{GSSF}	Forward Gate-Terminal Current	$V_{GS} = -25\text{V}$, $V_{DS} = 0$		-100	pA
		$T_A = +100^\circ\text{C}$		-10	nA
BV_{GSS}	Forward Gate-Source Break-down Voltage	$I_G = -0.1\text{mA}$, $V_{DS} = 0$	-25		V
I_{DSS}	Zero-Gate-Voltage Drain Current	$V_{DS} = -15\text{V}$, $V_{GS} = 0$		-10	nA
		$V_{DS} = -25\text{V}$, $V_{GS} = 0$		-10	μA
$V_{GS(th)}$	Gate-Source Threshold Voltage	$V_{DS} = -15\text{V}$, $I_D = -10\mu\text{A}$	-1.5	-5	V
V_{GS}	Gate-Source Voltage	$V_{DS} = -15\text{V}$, $I_D = -8\text{mA}$	-4.5	-8	
$I_{D(on)}$	On-State Drain Current (Note 2)	$V_{DS} = -15\text{V}$, $V_{GS} = -15\text{V}$	-40	-120	mA
$ Y_{fs} $	Small-Signal Common-Source Forward Transfer Admittance	$V_{DS} = -15\text{V}$, $I_D = -8\text{mA}$	3500	6500	μS
$ Y_{os} $	Small-Signal Common-Source Output Admittance			250	
C_{iss}	Common-Source Short-Circuit Input Capacitance (Note 1)			10	pF
C_{rss}	Common-Source Short Circuit Reverse Transfer Capacitance (Note 1)			4	

NOTE 1: For design reference only, not 100% tested.

2: Pulse test duration 300 μs ; duty cycle $\leq 3\%$

INTERSIL'S SOLE AND EXCLUSIVE WARRANTY OBLIGATION WITH RESPECT TO THIS PRODUCT SHALL BE THAT STATED IN THE WARRANTY ARTICLE OF THE CONDITION OF SALE. THE WARRANTY SHALL BE EXCLUSIVE AND SHALL BE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE.

NOTE: All typical values have been characterized but are not tested.