

The 3N164 is an enhancement mode P-Channel Mosfet

The 3N164 is an enhancement mode P-Channel Mosfet designed for use as a General Purpose amplifier or switch

The hermetically sealed TO-72 package is well suited for high reliability and harsh environment applications.

(See Packaging Information).

3N164 Features:

- Very high Input Impedance
- Low Capacitance
- High Gain
- High Gate Breakdown Voltage
- Low Threshold Voltage

FEATURES

DIRECT REPLACEMENT FOR INTERSIL 3N164

ABSOLUTE MAXIMUM RATINGS¹
@ 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	375mW
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MAXIMUM CURRENT

Drain Current	50mA
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MAXIMUM VOLTAGES

Drain to Gate	-30V
Drain to Source	-30V
Peak Gate to Source ²	±125V

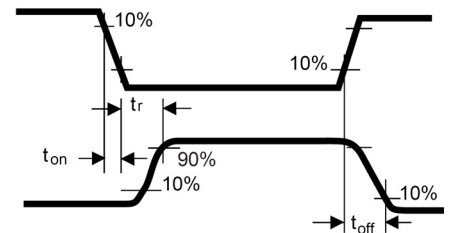
3N164 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
I _{GSSF}	Gate Forward Current	-10	--	--	pA	V _{GS} = -30V, V _{DS} = 0V
BV _{DSS}	Drain to Source Breakdown Voltage	-30	--	--	V	I _D = -10μA, V _{GS} = 0V
BV _{SDS}	Source-Drain Breakdown Voltage	-30	--	--		I _S = -10μA, V _{GD} = 0V, V _{BD} = 0V
V _{GS(th)}	Gate to Source Threshold Voltage	-2.0	--	-5.0		V _{DS} = V _{GS} , I _D = -10μA
		-2.0	--	-5.0		V _{DS} = -15V, I _D = -10μA
V _{GS}	Gate Source Voltage	-3.0	--	-6.5		V _{DS} = -15V, I _D = -0.5mA
I _{DSS}	Drain Leakage Current "Off"	--	--	200	pA	V _{DS} = -15V, V _{GS} = 0V
I _{SDS}	Source Drain Current	--	--	400		V _{DS} = 15V, V _{GS} = V _{DB} = 0V
r _{DS(on)}	Drain to Source "On" Resistance	--	--	250	Ω	V _{GS} = -20V, I _D = -100μA
I _{D(on)}	Drain Current "On"	-5.0	--	-30	mA	V _{DS} = -15V, V _{GS} = -10V
g _{fs}	Forward Transconductance	2000	--	4000	μS	V _{DS} = -15V, I _D = -10mA, f = 1kHz
g _{os}	Output Admittance	--	--	250		
C _{iss}	Input Capacitance—Output shorted	--	--	2.5	pF	V _{DS} = -15V, I _D = -10mA, f = 1MHz ³
C _{rss}	Reverse Transfer Capacitance	--	--	0.7		
C _{oss}	Output Capacitance—Input Shorted	--	--	3.0		

SWITCHING CHARACTERISTICS - T_A = 25°C and V_{BS} = 0 unless otherwise noted

SYMBOL	CHARACTERISTIC	MAX	UNITS	CONDITIONS
t _{d(on)}	Turn On Delay Time	12	ns	V _{DD} = -15V I _{D(on)} = -10mA R _G = R _L = 1.4KΩ ³
t _r	Turn On Rise Time	24		
t _{off}	Turn Off Time	50		

TIMING WAVEFORMS



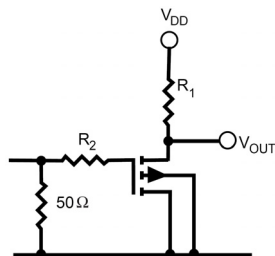
INPUT PULSE

Rise Time ≤ 2ns
Pulse Width ≥ 200ns

SAMPLING SCOPE

T_r ≤ 0.2ns
C_N ≤ 2pF
R_N ≥ 10M

SWITCHING TEST CIRCUIT



Note 1 - Absolute maximum ratings are limiting values above which 3N164 serviceability may be impaired.
Note 2 - Device must not be tested at ±125V more than once or longer than 300ms.
Note 3 - For design reference only, not 100% tested

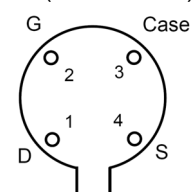
Micross Components Europe

Available Packages:

3N164 in TO-72
3N164 in bare die.

Please contact Micross for full package and die dimensions

TO-72 (Bottom View)



Tel: +44 1603 788967

Email: chipcomponents@micross.com

Web: <http://www.micross.com/distribution>

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