

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
------------------------------	-------

MAXIMUM CURRENT

Drain Current	50mA
---------------	------

MAXIMUM VOLTAGES

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

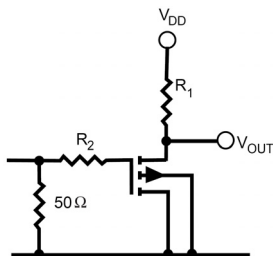
3N164 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
I_{GSSF}	Gate Forward Current	-10	--	--	pA	$V_{GS} = -30V, V_{DS} = 0V$
	$T_A = +125^\circ C$	--	--	-25		
BV_{DSS}	Drain to Source Breakdown Voltage	-30	--	--	V	$I_D = -10\mu A, V_{GS} = 0V$
BV_{SDS}	Source-Drain Breakdown Voltage	-30	--	--		$I_S = -10\mu A, V_{GD} = 0V, V_{BD} = 0V$
$V_{GS(th)}$	Gate to Source Threshold Voltage	-2.0	--	-5.0		$V_{DS} = V_{GS}, I_D = -10\mu A$
		-2.0	--	-5.0		$V_{DS} = -15V, I_D = -10\mu A$
V_{GS}	Gate Source Voltage	-3.0	--	-6.5	pA	$V_{DS} = -15V, I_D = -0.5mA$
I_{DSS}	Drain Leakage Current "Off"	--	--	200		$V_{DS} = -15V, V_{GS} = 0V$
I_{SDS}	Source Drain Current	--	--	400		$V_{DS} = 15V, V_{GS} = V_{DB} = 0V$
$r_{DS(on)}$	Drain to Source "On" Resistance	--	--	250		$V_{GS} = -20V, I_D = -100\mu A$
$I_{D(on)}$	Drain Current "On"	-5.0	--	-30	mA	$V_{DS} = -15V, V_{GS} = -10V$
g_{fs}	Forward Transconductance	2000	--	4000		$V_{DS} = -15V, I_D = -10mA, f = 1kHz$
g_{os}	Output Admittance	--	--	250		
C_{iss}	Input Capacitance—Output shorted	--	--	2.5		
C_{rss}	Reverse Transfer Capacitance	--	--	0.7	pF	$V_{DS} = -15V, I_D = -10mA, f = 1MHz^3$
C_{oss}	Output Capacitance—Input Shorted	--	--	3.0		

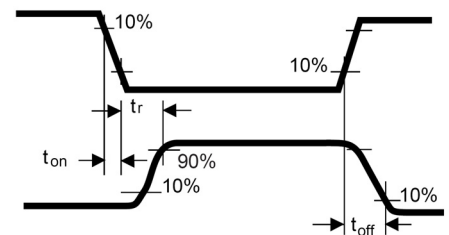
SWITCHING CHARACTERISTICS - $T_A = 25^\circ C$ and $V_{BS} = 0$ unless otherwise noted

SYMBOL	CHARACTERISTIC	MAX	UNITS	CONDITIONS
$t_{d(on)}$	Turn On Delay Time	12	ns	$V_{DD} = -15V$
t_r	Turn On Rise Time	24		$I_{D(on)} = -10mA$
t_{off}	Turn Off Time	50		$R_G = R_L = 1.4K\Omega^3$

SWITCHING TEST CIRCUIT



TIMING WAVEFORMS



INPUT PULSE

Rise Time $\leq 2ns$
Pulse Width $\geq 200ns$

SAMPLING SCOPE

$T_r \leq 0.2ns$
 $C_N \leq 2pF$
 $R_N \geq 10M$

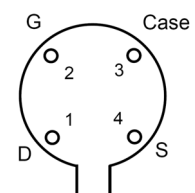
Note 1 - Absolute maximum ratings are limiting values above which 3N164 serviceability may be impaired.
Note 2 - Device must not be tested at $\pm 125V$ more than once or longer than 300ms.
Note 3 - For design reference only, not 100% tested

Micross Components Europe

Available Packages:

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

TO-72 (Bottom View)



Tel: +44 1603 788967

Email: chipcomponents@micross.com

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

Please contact Micross for full package and die dimensions

Information furnished by Linear Integrated Systems and Micross Components 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.