

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

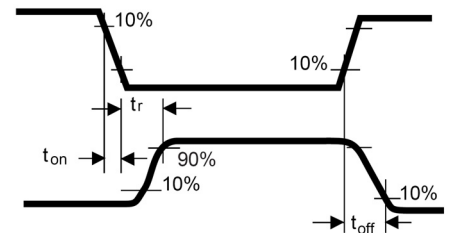
3N164 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
I_{GSSF}	Gate Forward Current	-10	--	--	pA	$V_{GS} = -30V, V_{DS} = 0V$
		$T_A = +125^\circ C$	--	-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		$V_{DS} = -15V, I_D = -0.5mA$
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	$V_{GS} = -20V, I_D = -100\mu A$
$I_{D(on)}$	Drain Current "On"	-5.0	--	-30		$V_{DS} = -15V, V_{GS} = -10V$
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 - $T_A = 25^\circ C$ and $V_{BS} = 0$ unless otherwise noted

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

TIMING WAVEFORMS



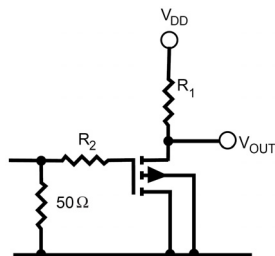
INPUT PULSE

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

SAMPLING SCOPE

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

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 $\pm 125V$ more than once or longer than 300ms.
Note 3 - For design reference only, not 100% tested

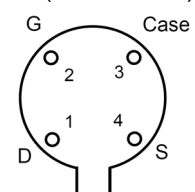
Micross Components Europe

Available Packages:

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

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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