

The 3N163 is an enhancement mode P-Channel Mosfet

The 3N163 is an enhancement mode P-Channel Mosfet designed for use as a General Purpose amplifier or switch

The SOT-143 package provides ease of manufacturing, and a lower cost assembly option.

(See Packaging Information).

3N163 Features:

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

FEATURES

DIRECT REPLACEMENT FOR INTERSIL 3N163

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	-40V
Drain to Source	-40V
Peak Gate to Source ²	±125V

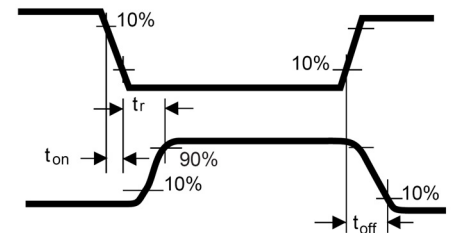
3N163 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
I _{GSSF}	Gate Forward Current	-10	--	--	pA	V _{GS} = -40V, V _{DS} = 0V
BV _{DSS}	Drain to Source Breakdown Voltage	-40	--	--	V	I _D = -10μA, V _{GS} = 0V
BV _{SDS}	Source-Drain Breakdown Voltage	-40	--	--		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



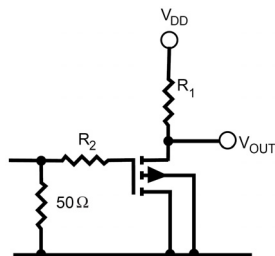
INPUT PULSE

Rise Time ≤ 2ns
Pulse Width ≥ 200ns

SAMPLING SCOPE

T_r ≤ 0.2ns
C_N ≤ 2pF
R_N ≥ 10M

SWITCHING TEST CIRCUIT



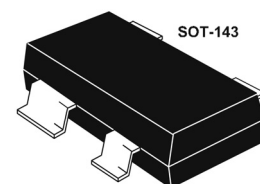
Note 1 - Absolute maximum ratings are limiting values above which 3N163 serviceability may be impaired.
Note 2 - Device must not be tested at ±125V more than once or longer than 300ms.
Note 3 - For design reference only, not 100% tested

Micross Components Europe

Available Packages:

3N163 in SOT-143
3N163 in bare die.

Please contact Micross for full package and die dimensions



Tel: +44 1603 788967

Email: chipcomponents@micross.com

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

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.