

### The 3N170 is an enhancement mode N-Channel Mosfet

The 3N170 is an enhancement mode N-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).

#### 3N170 Features:

- Low ON Resistance
- Low Capacitance
- High Gain
- High Gate Breakdown Voltage
- Low Threshold Voltage

#### FEATURES

DIRECT REPLACEMENT FOR INTERSIL 3N170

LOW DRAIN TO SOURCE RESISTANCE  $r_{DS(on)} \leq 200\Omega$

FAST SWITCHING  $t_{d(on)} \leq 3.0ns$

**ABSOLUTE MAXIMUM RATINGS**  
@ 25°C (unless otherwise noted)

#### Maximum Temperatures

Storage Temperature -65°C to +150°C

Operating Junction Temperature -55°C to +135°C

#### Maximum Power Dissipation

Continuous Power Dissipation 300mW

#### MAXIMUM CURRENT

Drain to Source (Note 1) 30mA

#### MAXIMUM VOLTAGES

Drain to Gate  $\pm 35V$

Drain to Source 25V

Peak Gate to Source (Note 2)  $\pm 35V$

#### 3N170 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
$BV_{DSS}$	Drain to Source Breakdown Voltage	25	--	--	V	$I_D = 10\mu A, V_{GS} = 0V$
$V_{DS(on)}$	Drain to Source "On" Voltage	--	--	2.0		$I_D = 10mA, V_{GS} = 10V$
$V_{GS(th)}$	Gate to Source Threshold Voltage	1.0	--	2.0		$V_{DS} = 10V, I_D = 10\mu A$
$I_{GSS}$	Gate Leakage Current	--	--	10	pA	$V_{GS} = -35V, V_{DS} = 0V$
$I_{DSS}$	Drain Leakage Current "Off"	--	--	10	nA	$V_{GS} = 10V, V_{DS} = 10V$
$I_{D(on)}$	Drain Current "On"	10	--	--	mA	$V_{GS} = 10V, V_{DS} = 10V$
$g_{fs}$	Forward Transconductance	1000	--	--	$\mu S$	$V_{DS} = 10V, I_D = 2mA, f = 1kHz$
$r_{DS(on)}$	Drain to Source "On" Resistance	--	--	200	$\Omega$	$V_{GS} = 10V, I_D = 0A, f = 1kHz$
$C_{rss}$	Reverse Transfer Capacitance	--	--	1.3	pF	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$
$C_{iss}$	Input Capacitance	--	--	5		$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$
$C_{db}$	Drain to Body Capacitance	--	--	5.0		$V_{DB} = 10V, f = 1MHz$

#### SWITCHING CHARACTERISTICS

SYMBOL	CHARACTERISTIC	MAX	UNITS	CONDITIONS
$t_{d(on)}$	Turn On Delay Time	3	ns	$V_{DD} = 10V, I_{D(on)} = 10mA, V_{GS(on)} = 10V, V_{GS(off)} = 0V, R_G = 50\Omega$
$t_r$	Turn On Rise Time	10		
$t_{d(off)}$	Turn Off Delay Time	3		
$t_f$	Turn Off Fall Time	15		

Note 1 - Absolute maximum ratings are limiting values above which 3N170 serviceability may be impaired.

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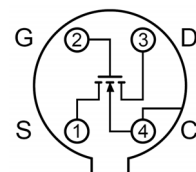
Available Packages:

3N170 in TO-72

3N170 in bare die.

Please contact Micross for full package and die dimensions

TO-72 (Bottom View)



\* Body tied to case

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