

The LS3N163 is an enhancement mode P-Channel Mosfet

The LS3N163 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).

LS3N163 Features:

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

FEATURES

DIRECT REPLACEMENT FOR INTERSIL LS3N163

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 |

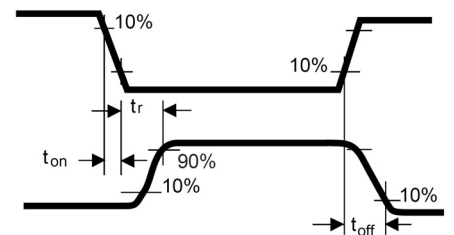
LS3N163 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

| SYMBOL | CHARACTERISTIC | MIN | TYP. | MAX | UNITS | CONDITIONS |
|--------------|-----------------------------------|----------------------|------|------|----------|--|
| I_{GSSF} | Gate Forward Current | -10 | -- | -- | pA | $V_{GS} = -40V, V_{DS} = 0V$ |
| | | $T_A = +125^\circ C$ | -- | -- | | |
| BV_{DSS} | Drain to Source Breakdown Voltage | -40 | -- | -- | V | $I_D = -10\mu A, V_{GS} = 0V$ |
| BV_{SDS} | Source-Drain Breakdown Voltage | -40 | -- | -- | | $I_S = -10\mu A, V_{GD} = 0V, V_{BD} = 0V$ |
| $V_{GS(th)}$ | 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



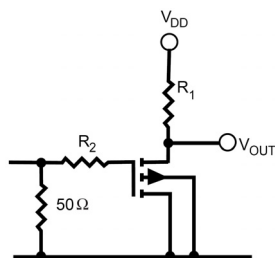
INPUT PULSE

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



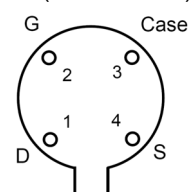
Note 1 - Absolute maximum ratings are limiting values above which LS3N163 serviceability may be impaired.
Note 2 - Device must not be tested at $\pm 125V$ more than once or longer than 300ms.
Note 3 - For design reference only, not 100% tested

Micross Components Europe

Available Packages:

LS3N163 in TO-72
LS3N163 in bare die.

TO-72 (Bottom View)



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Please contact Micross for full package and die dimensions

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