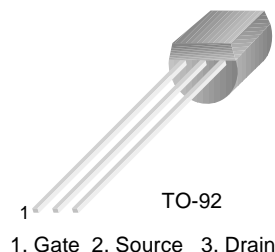


# TIS75

## N-Channel General Purpose Amplifier

- This device is designed for low level analog switching, sample and hold circuits and chopper stabilized amplifiers.
- Sourced from process 54.



## Absolute Maximum Ratings \* $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{DG}$	Drain-Gate Voltage	30	V
$V_{GS}$	Gate-Source Voltage	-30	V
$I_{GF}$	Forward Gate Current	10	mA
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range	-55 ~ +150	$^\circ\text{C}$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### NOTES:

- These ratings are based on a maximum junction temperature of 150 degrees C.
- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

## Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristics</b>						
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = 1.0\mu\text{A}, V_{DS} = 0$	-30			V
$I_{GSS}$	Gate Reverse Current	$V_{GS} = 15\text{V}, V_{DS} = 0$ $V_{GS} = 15\text{V}, V_{DS} = 0, T_a = 100^\circ\text{C}$			-2.0 -5.0	nA $\mu\text{A}$
$I_{D(off)}$	Drain Cutoff Leakage Current	$V_{DS} = 15\text{V}, V_{GS} = -10\text{V}$ $V_{DS} = 15\text{V}, V_{GS} = -10\text{V}, T_a = 100^\circ\text{C}$			-2.0 -5.0	nA $\mu\text{A}$
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 20\text{V}, I_D = 4.0\text{nA}$	-0.8		-4.0	V
<b>On Characteristics *</b>						
$I_{DSS}$	Zero-Gate Voltage Drain Current *	$V_{DS} = 15\text{V}, V_{GS} = 0$	8		80	mA
$r_{DS(on)}$	Drain-Source On Resistance	$V_{DS} \leq 0.1\text{V}, V_{GS} = 0$			60	$\Omega$
<b>Small Signal Characteristics</b>						
$C_{iss}$	Input Capacitance	$V_{DS} = 0, V_{GS} = -10\text{V}, f = 1.0\text{MHz}$			18	pF
$C_{rss}$	Reverse Transfer Capacitance	$V_{DS} = 0, V_{GS} = -10\text{V}, f = 1.0\text{MHz}$			8.0	pF
<b>Switching Characteristics</b>						
$t_r$	Rise Time	$V_{GS(off)} = -4.0\text{V}, V_{GS(on)} = 0,$ $I_D = 5.0\text{mA}, V_{DS} = 10\text{V}$			10	ns
$t_{on}$	Turn-On Time				10	ns
$t_{off}$	Turn-Off Time				100	ns

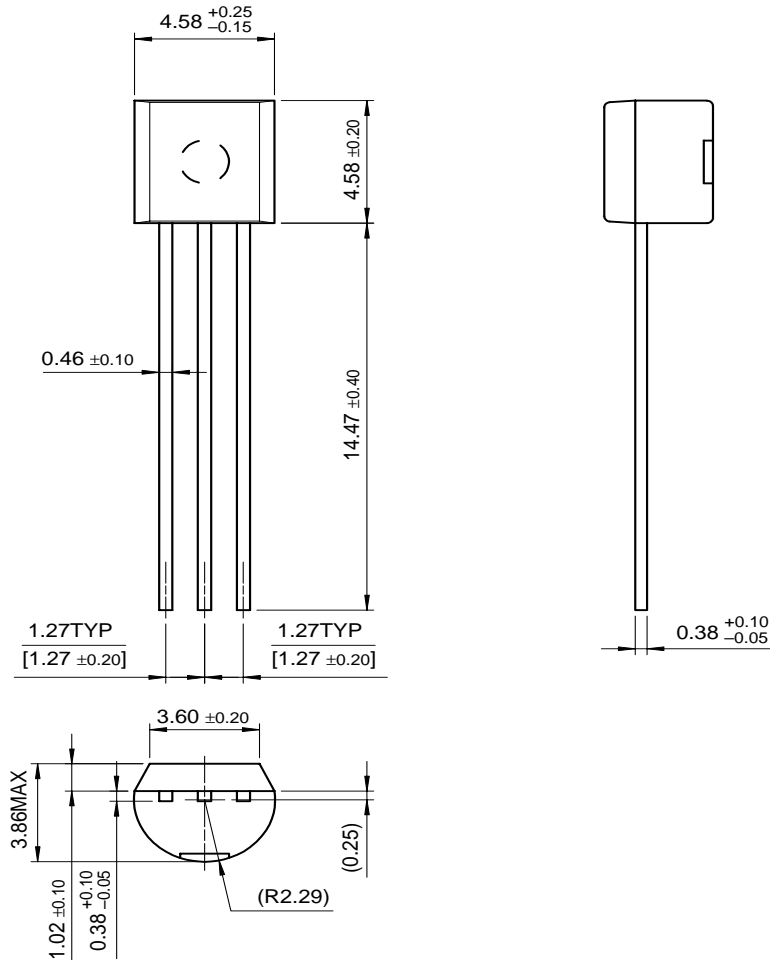
\* Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 3.0\%$

**Thermal Characteristics**  $T_a=25^{\circ}\text{C}$  unless otherwise noted

Symbol	Parameter	Max.	Units
$P_D$	Total Device Dissipation	350	mW
	Derate above $25^{\circ}\text{C}$	2.8	mW/ $^{\circ}\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	$^{\circ}\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^{\circ}\text{C/W}$

# Package Dimensions

## TO-92



Dimensions in Millimeters

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## PRODUCT STATUS DEFINITIONS

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