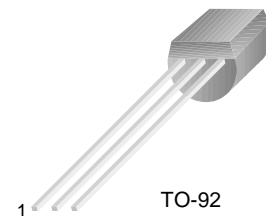


**N-Channel Switch**

- This device is designed for low level analog switching, sample and hold circuits and chopper stabilized amplifiers.
- Sourced from Process 51.
- See J111 for characteristics.



TO-92  
1. Drain 2. Source 3. Gate

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

Symbol	Parameter	Ratings	Units
$V_{DG}$	Drain-Gate Voltage	40	V
$V_{GS}$	Gate-Source Voltage	-40	V
$I_{GF}$	Forward Gate Current	50	mA
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range	-55 ~ 150	$^\circ\text{C}$

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

**NOTES:**

- 1) These rating are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady 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.	Max.	Units
<b>Off Characteristics</b>					
$V_{(BR)GS}$	Gate-Source Breakdown Voltage	$I_G = 1.0 \mu\text{A}, V_{DS} = 0$	-40		V
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 20 \text{ V}, I_D = 1.0 \text{ nA}$	-2.0	-7.0	V
$I_{DGO}$	Drain-Gate Leakage Current	$V_{DG} = 20 \text{ V}, I_S = 0$		-200	pA
<b>On Characteristics</b>					
$I_{DSS}$	Zero-Gate Voltage Drain Current *	$V_{DS} = 20 \text{ V}, V_{GS} = 0$	15		mA
$r_{DS(on)}$		$I_D = 1.0 \text{ mA}, V_{GS} = 0$		50	$\Omega$
<b>Small Signal Characteristics</b>					
$r_{ds(on)}$	Drain-Source On Resistance	$V_{DS} = V_{GS} = 0, f = 1.0 \text{ kHz}$		50	$\Omega$
$C_{iss}$	Input Capacitance	$V_{DS} = 20, V_{GS} = 0, f = 1.0 \text{ MHz}$		16	pF
$C_{rss}$	Reverse Transfer Capacitance	$V_{GS} = -20 \text{ V}, f = 1.0 \text{ MHz}$		5.0	pF
<b>Switching Characteristics</b>					
$t_{on}$	Turn-On Time	$I_{D(on)} = 6.0 \text{ mA}$		35	ns
$t_{off}$	Turn-Off Time	$V_{GS(off)} = 6.0 \text{ V}$		60	ns

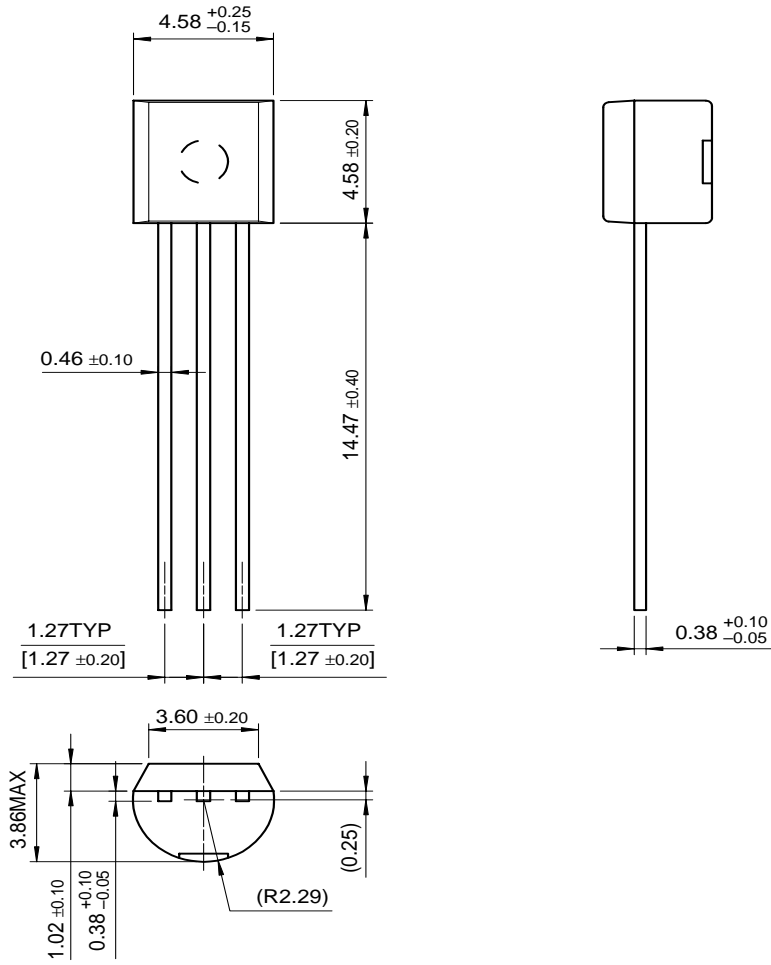
\* Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

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

Symbol	Parameter	Max.	Units
$P_D$	Total Device Dissipation	625	mW
	Derate above $25^\circ\text{C}$	5.0	mW/ $^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C}/\text{W}$

# Package Dimensions

## TO-92



Dimensions in Millimeters

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## PRODUCT STATUS DEFINITIONS

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