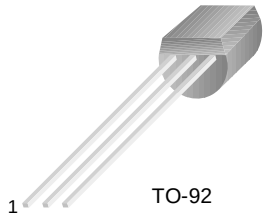
FAIRCHILD
SEMICONDUCTOR®

2N5639

N-Channel Switch

- This device is designed for low level analog switchng, sample and hold circuits and chopper stabilized amplifiers.
- Sourced from process 51.



TO-92

1. Drain 2. Source 3. Gate

Absolute Maximum Ratings * T_C=25°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	50	mA
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 ~ +150	°C

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

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

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	V_{DS} = 0, I_G = -10µA	-30			V
I_{GSS}	Gate Reverse Current	V_{GS} = -15V, V_{DS} = 0			-1.0	nA
$I_{D(off)}$	Drain Cutoff Leakage Current	V_{DS} = 12V, V_{GS} = 15V			1.0	nA
On Characteristics						
I_{DSS}	Zero-Gate Voltage Drain Current *	V_{DS} = 20V, I_{GS} = 0	25			mA
$r_{DS(on)}$	Drain-Source On Resistance	V_{GS} = 0V, I_D = 1.0mA			60	Ω
Small Signal Characteristics						
$r_{ds(on)}$	Drain-Source On Resistance	V_{DS} = V_{GS} = 0, f = 1.0kHz			60	Ω
C_{iss}	Input Capacitance	V_{DS} = 0, V_{GS} = 12V, f = 1.0MHz			10	pF
C_{rss}	Reverse Transfer Capacitance	V_{DS} = 0V, V_{GS} = 12V, f = 1.0MHz			4.0	pF
Switching Characteristics						
$t_{d(on)}$	Trun On Delay Time	V_{DD} = 10V, $V_{GS(on)}$ = 0 $V_{GS(off)}$ = -12, $I_{D(on)}$ = 12mA R_G = 50Ω			6.0	ns
t_r	Rise Time				8.0	ns
$t_{d(off)}$	Trun Off Delay Time				10	ns
t_f	Fall Time				20	ns

* Pulse Test: Pulse Width ≤ 300µs, Duty Cycle ≤ 1.0%

Thermal Characteristics T_A=25°C unless otherwise noted

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

Package Dimensions

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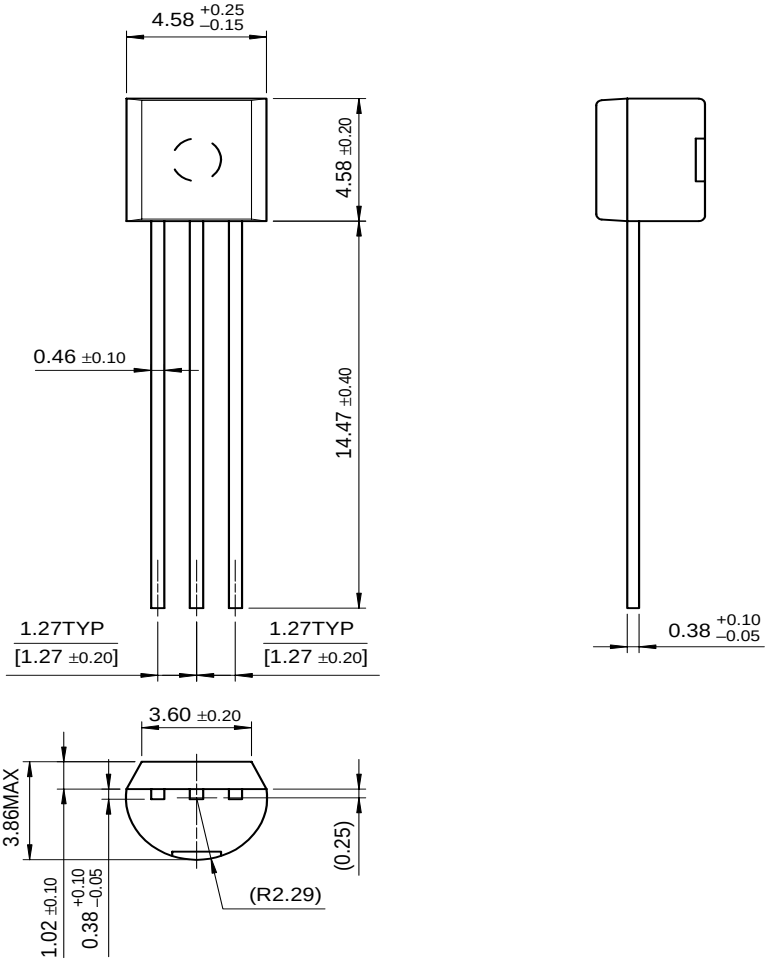

Dimensions in Millimeters

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CROSSVOLT™	FRFET™	MicroPak™	QFET®	SuperSOT™-8
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E²CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
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