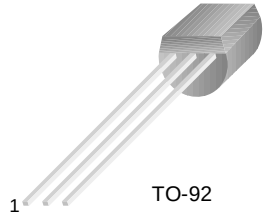
FAIRCHILD
SEMICONDUCTOR®

TIS73/TIS74

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.



TO-92

1. Gate 2. Source 3. Drain

Absolute Maximum Ratings * T_A=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	10	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_A=25°C unless otherwise noted

Symbol	Parameter	Test Condition		Min.	Typ.	Max.	Units
Off Characteristics							
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	I_G = 1.0μA, V_{DS} = 0		-30			V
I_{GSS}	Gate Reverse Current	V_{GS} = 15V, V_{DS} = 0				-2.0	nA
		V_{GS} = 15V, V_{DS} = 0, T_a = 100°C				-5.0	μA
I_D(off)	Drain Cutoff Leakage Current	V_{DS} = 15V, V_{GS} = -10V				-2.0	nA
		V_{DS} = 15V, V_{GS} = -10V, T_a = 100°C				-5.0	μA
V_{GS}(off)	Gate-Source Cutoff Voltage	V_{DS} = 15V, I_D = 4.0nA	TIS73	-4.0		-10	V
			TIS74	-2.0		-6.0	V
On Characteristics *							
I_{DSS}	Zero-Gate Voltage Drain Current *	V_{DS} = 15V, V_{GS} = 0	TIS73	50			mA
			TIS74	20		100	mA
r_{DS}(on)	Drain-Source On Resistance	V_{DS} ≤ 0.1V, V_{GS} = 0	TIS73			25	Ω
		f = 1.0KHz	TIS74			40	Ω
Small Signal Characteristics							
C_{iss}	Input Capacitance	V_{DS} = 0, V_{GS} = -10V, f = 1.0MHz				18	pF
C_{rss}	Reverse Transfer Capacitance	V_{DS} = 0, V_{GS} = -10V, f = 1.0MHz				8.0	pF
Switching Characteristics							
t_r	Rise Time	V_{GS}(off) = -10V, V_{GS}(on) = 0,					
		I_D = 20mA, V_{DS} = 10V	TIS73			3.0	ns
			TIS74			4.0	ns
t_{on}	Turn-On Time	$V_{GS(off)}$ = -10V, V_{GS}(on) = 0,					
		I_D = 20mA, V_{DS} = 10V				6.0	ns
t_{off}	Turn-Off Time	V_{GS}(off) = -10V, V_{GS}(on) = 0,					
		I_D = 20mA, V_{DS} = 10V	TIS73			25	ns
			TIS74			50	ns

* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 3.0%

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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

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Typical Characateristics

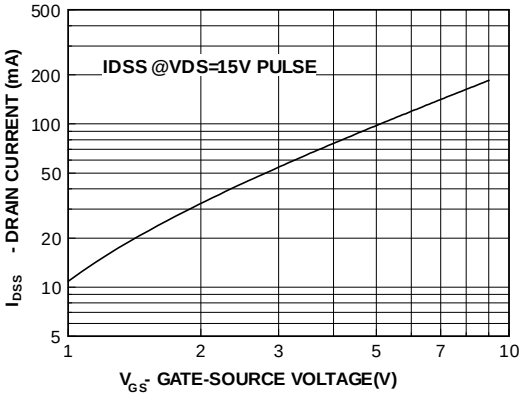


Figure 1. Transfer Characteristics

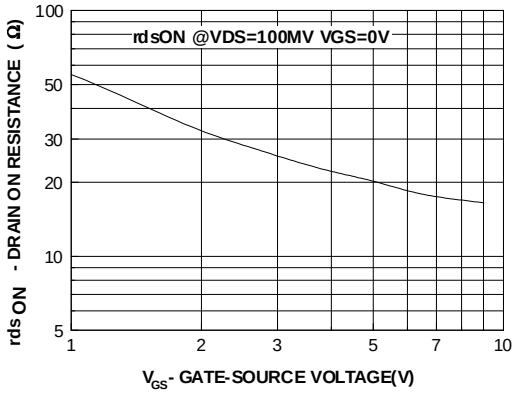


Figure 2. Transfer Characteristics

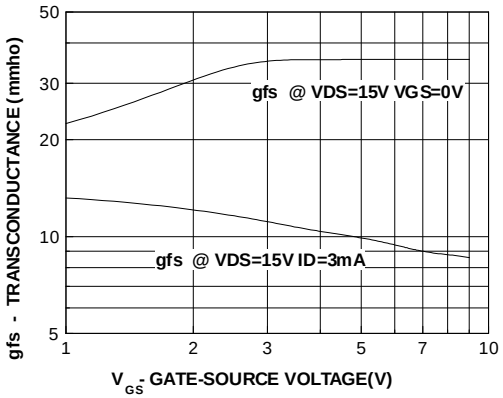


Figure 3. Transfer Characteristics

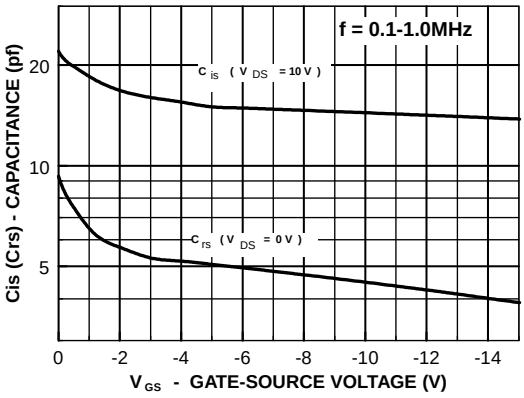


Figure 4. Capacitance vs Voltage

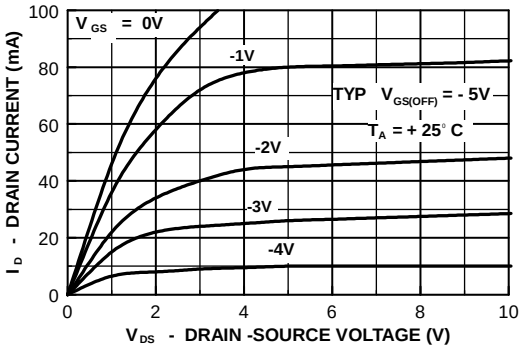


Figure 5. Common Drain-Source Characteristics

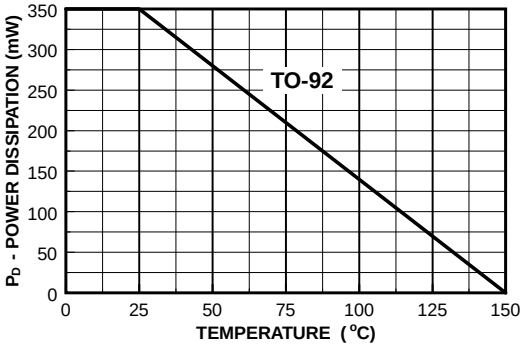
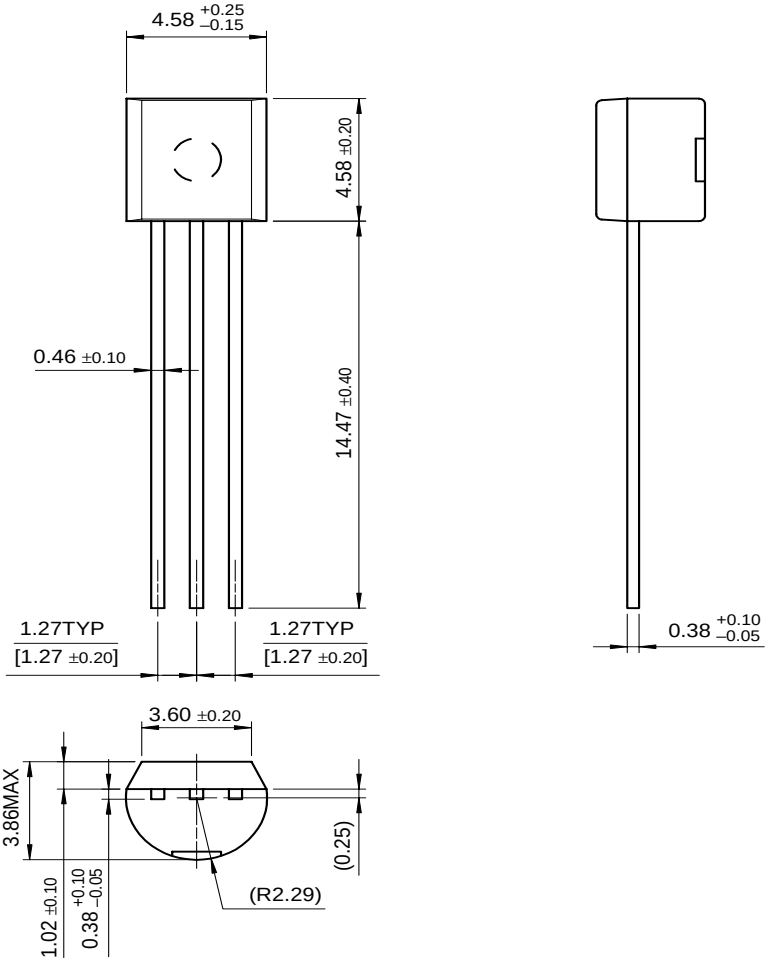


Figure 6. Power Dissipation vs Ambient Temperature

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Package Dimensions

TO-92



Dimensions in Millimeters

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CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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