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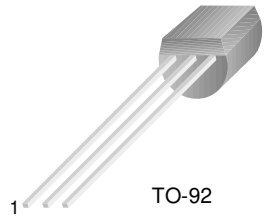
FAIRCHILD
SEMICONDUCTOR®

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 V_{GS} = 15V, V_{DS} = 0, T_a = 100°C				-2.0 -5.0	nA μA
I_D(off)	Drain Cutoff Leakage Current	V_{DS} = 15V, V_{GS} = -10V V_{DS} = 15V, V_{GS} = -10V, T_a = 100°C				-2.0 -5.0	nA μA
V_{GS}(off)	Gate-Source Cutoff Voltage	V_{DS} = 15V, I_D = 4.0nA	TIS73 TIS74	-4.0 -2.0		-10 -6.0	V V
On Characteristics *							
I_{DSS}	Zero-Gate Voltage Drain Current *	V_{DS} = 15V, V_{GS} = 0	TIS73 TIS74	50 20		 100	mA mA
r_{DS}(on)	Drain-Source On Resistance	V_{DS} ≤ 0.1V, V_{GS} = 0 f = 1.0KHz	TIS73 TIS74			25 40	Ω 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 TIS74			3.0 4.0	ns 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 TIS74			25 50	ns ns

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

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

Typical Characateristics

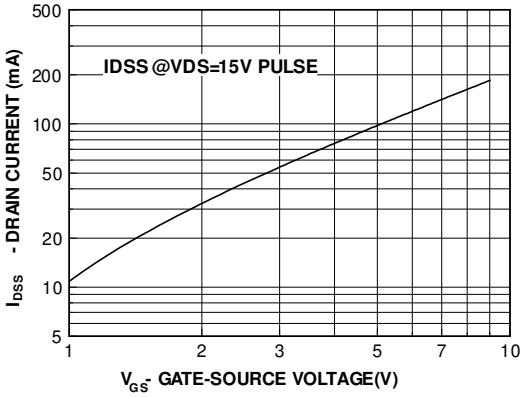


Figure 1. Transfer Characteristics

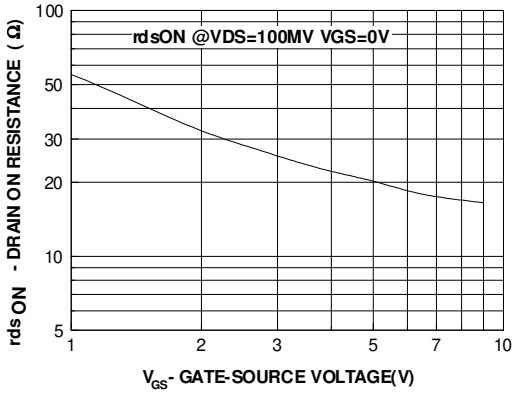


Figure 2. Transfer Characteristics

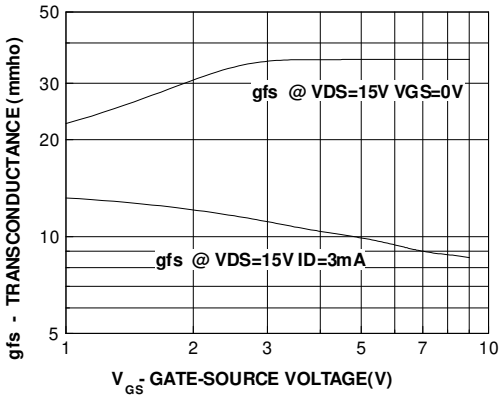


Figure 3. Transfer Characteristics

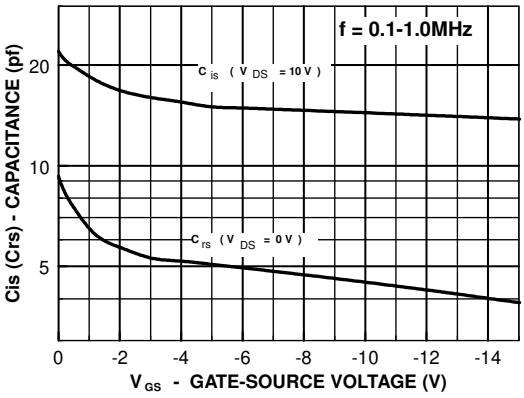


Figure 4. Capacitance vs Voltage

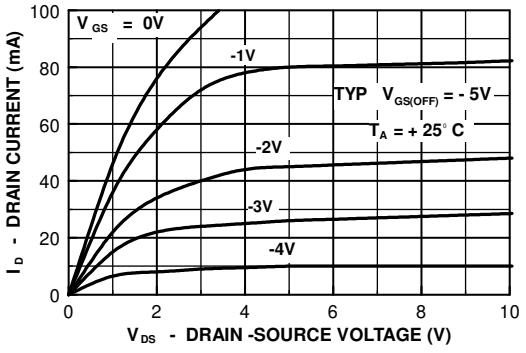


Figure 5. Common Drain-Source Characteristics

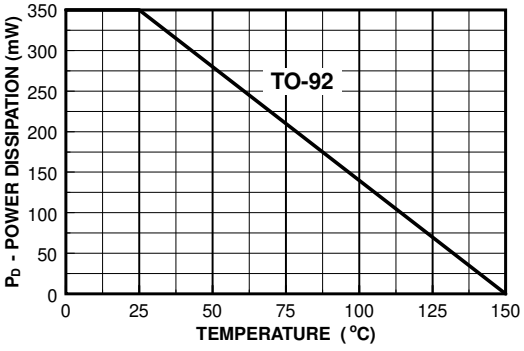
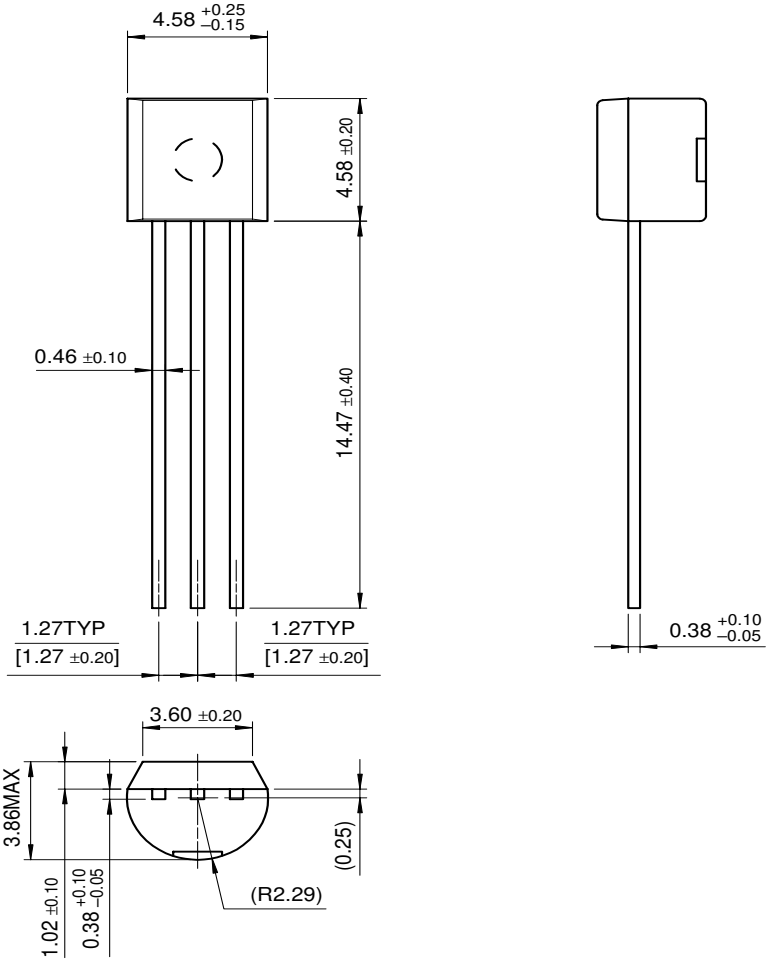


Figure 6. Power Dissipation vs Ambient Temperature

Package Dimensions

TO-92



Dimensions in Millimeters

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CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
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Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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