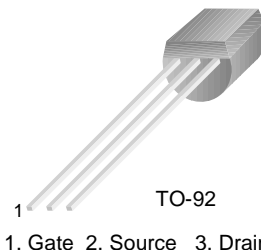


TIS73/TIS74

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.



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:

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 $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
$V_{(BR)GSS}$	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 μA
$I_{D(off)}$	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 μA
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 15\text{V}, I_D = 4.0\text{nA}$	TIS73 -4.0 TIS74 -2.0		-10 -6.0	V V
On Characteristics *						
I_{DSS}	Zero-Gate Voltage Drain Current *	$V_{DS} = 15\text{V}, V_{GS} = 0$	TIS73 50 TIS74 20		100	mA mA
$r_{DS(on)}$	Drain-Source On Resistance	$V_{DS} \leq 0.1\text{V}, V_{GS} = 0$ $f = 1.0\text{KHz}$	TIS73 TIS74		25 40	Ω Ω
Small Signal Characteristics						
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
Switching Characteristics						
t_r	Rise Time	$V_{GS(off)} = -10\text{V}, V_{GS(on)} = 0,$ $I_D = 20\text{mA}, V_{DS} = 10\text{V}$	TIS73 TIS74		3.0 4.0	ns ns
t_{on}	Turn-On Time	$V_{GS(off)} = -10\text{V}, V_{GS(on)} = 0,$ $I_D = 20\text{mA}, V_{DS} = 10\text{V}$			6.0	ns
t_{off}	Turn-Off Time	$V_{GS(off)} = -10\text{V}, V_{GS(on)} = 0,$ $I_D = 20\text{mA}, V_{DS} = 10\text{V}$	TIS73 TIS74		25 50	ns 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°C	2.8	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	$^{\circ}\text{C}/\text{W}$

Typical Characateristics

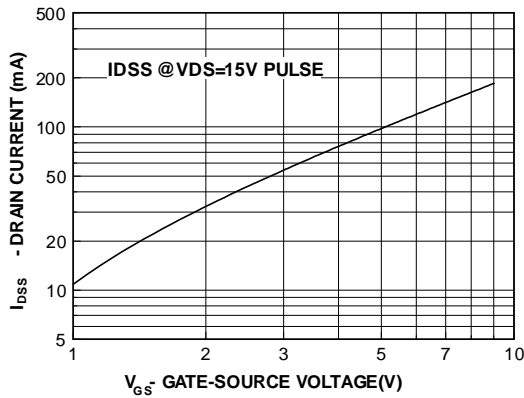


Figure 1. Transfer Characteristics

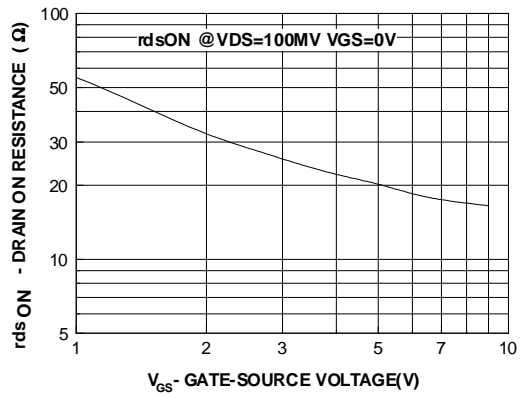


Figure 2. Transfer Characteristics

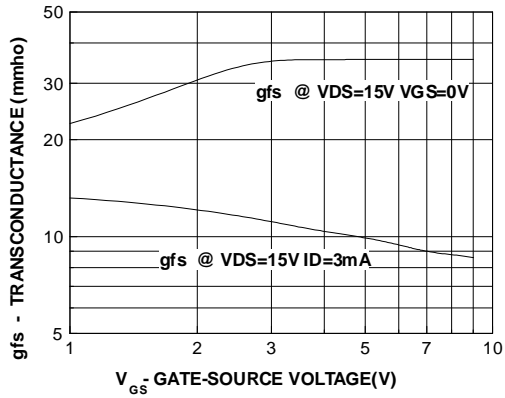


Figure 3. Transfer Characteristics

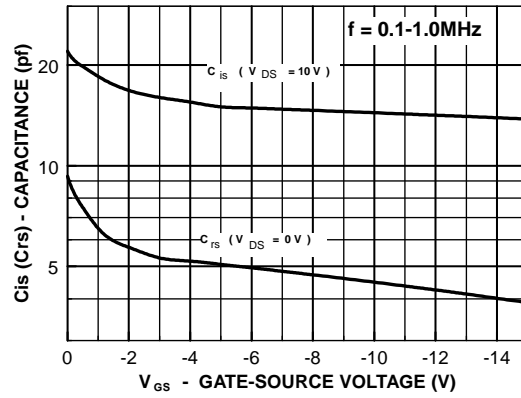


Figure 4. Capacitance vs Voltage

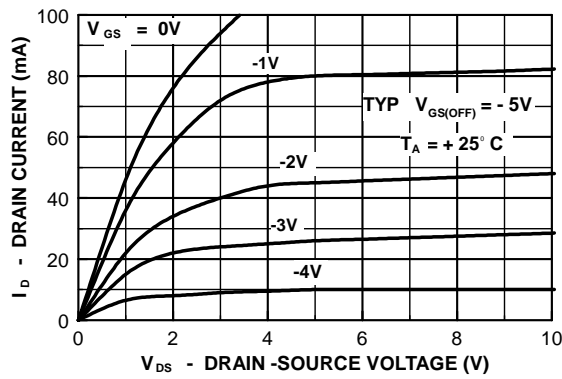


Figure 5. Common Drain-Source Characteristics

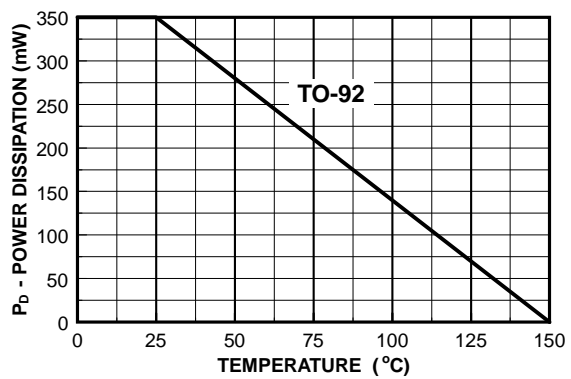


Figure 6. Power Dissipation vs Ambient Temperature

Package Dimensions

TIS73/TIS74

TO-92



Dimensions in Millimeters

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