



## 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\*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>DG</sub>	Drain-Gate Voltage	30	V
V <sub>GS</sub>	Gate-Source Voltage	- 30	V
I <sub>GF</sub>	Forward Gate Current	10	mA
T <sub>J</sub> , T <sub>stg</sub>	Operating and Storage Junction Temperature Range	-55 to +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.

#### Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		TIS73 / TIS74	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	625	mW
		5.0	mW/°C
R <sub>θJC</sub>	Thermal Resistance, Junction to Case	83.3	°C/W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	200	°C/W

## N-Channel General Purpose Amplifier

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### Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
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#### OFF CHARACTERISTICS

$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = 1.0 \mu A, V_{DS} = 0$	- 30		V
$I_{GSS}$	Gate Reverse Current	$V_{GS} = 15 V, V_{DS} = 0$ $V_{GS} = 15 V, V_{DS} = 0, T_A = 100^\circ C$		- 2.0 - 5.0	nA $\mu A$
$I_{D(off)}$	Drain Cutoff Leakage Current	$V_{DS} = 15 V, V_{GS} = 10 V$ $V_{DS} = 15 V, V_{GS} = 10 V, T_A = 100^\circ C$		- 2.0 - 5.0	nA $\mu A$
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 15 V, I_D = 4.0 nA$	- 4.0 - 2.0	- 10 - 6.0	V V

#### ON CHARACTERISTICS

$I_{DSS}$	Zero-Gate Voltage Drain Current*	$V_{DS} = 15 V, V_{GS} = 0$	50 20	100	mA mA
$r_{DS(on)}$	Drain-Source On Resistance	$V_{DS} \leq 0.1 V, V_{GS} = 0,$ $f = 1.0 kHz$		25 40	$\Omega$ $\Omega$

#### SMALL-SIGNAL CHARACTERISTICS

$C_{iss}$	Input Capacitance	$V_{DS} = 0, V_{GS} = 10 V, f = 1.0 MHz$		18	pF
$C_{rss}$	Reverse Transfer Capacitance	$V_{DS} = 0, V_{GS} = 10 V, f = 1.0 MHz$		8.0	pF

#### SWITCHING CHARACTERISTICS

$t_r$	Rise Time	$V_{GS(off)} = 10 mA, V_{GS(on)} = 0,$ $I_D = 20 mA, V_{DS} = 10 V$		3.0 4.0	ns ns
$t_{on}$	Turn-On Time	$V_{GS(off)} = 10 mA, V_{GS(on)} = 0,$ $I_D = 20 mA, V_{DS} = 10 V$		6.0	ns
$t_{off}$	Turn-Off Time	$V_{GS(off)} = 10 mA, V_{GS(on)} = 0,$ $I_D = 20 mA, V_{DS} = 10 V$		25 50	ns ns

\*Pulse Test: Pulse Width  $\leq 300 \mu s$ , Duty Cycle  $\leq 3.0\%$

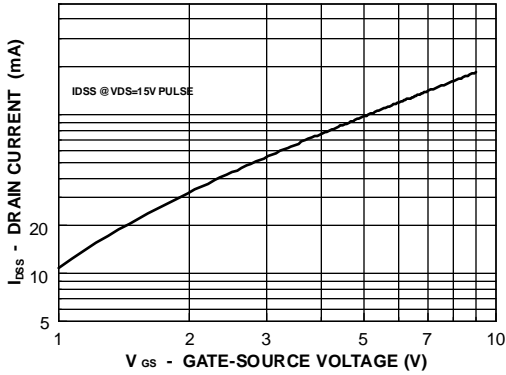
# N-Channel General Purpose Amplifier

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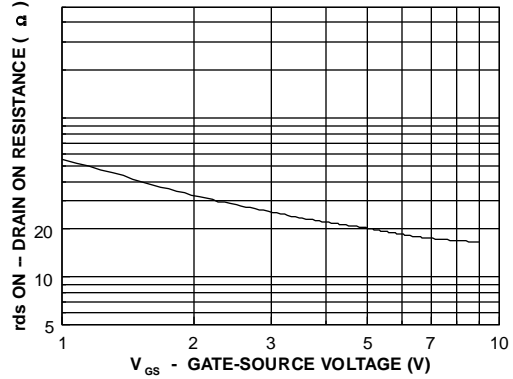
TIS73 / TIS74

## Typical Characteristics

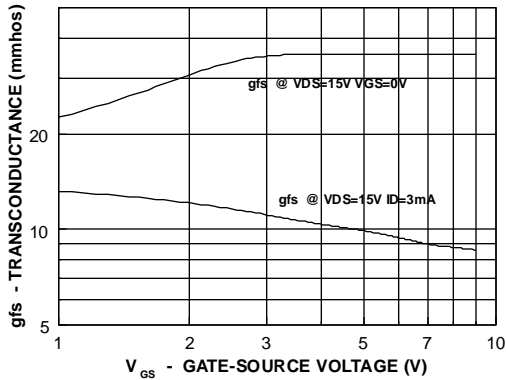
**Parametric Interaction**



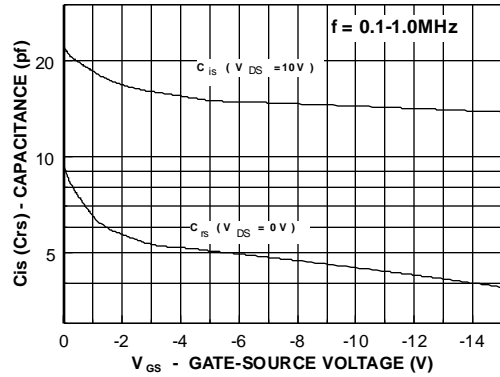
**Parametric Interaction**



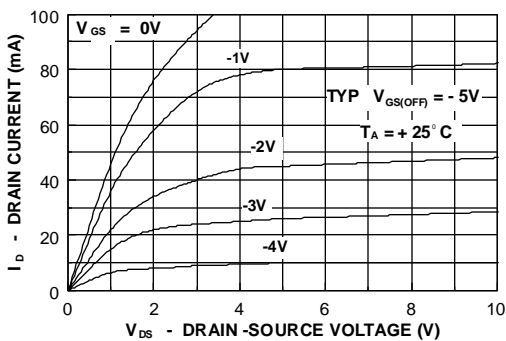
**Parametric Interaction**



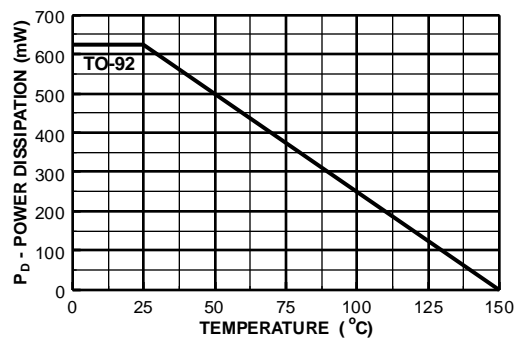
**Capacitance vs Voltage**



**Common Drain-Source Characteristics**



**POWER DISSIPATION vs AMBIENT TEMPERATURE**



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