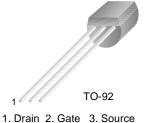


## 2N3820

## **P-Channel General Purpose Amplifier**

- This device is designed primarily for low level audio and general purpose applications with high impedance signal sources.
- · Sourced from process 89.



## **Epitaxial Silicon Transistor**

## **Absolute Maximum Ratings\*** T<sub>C</sub>=25°C unless otherwise noted

Symbol	Parameter	Ratings	Units
$V_{DG}$	Drain-Gate Voltage	-20	V
$V_{GS}$	Gate-Source Voltage	20	V
$I_{GF}$	Forward Gate Current	10	mA
T <sub>STG</sub>	Storage Temperature Range	-55 ~ 150	°C

<sup>\*</sup> This ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

## Electrical Characteristics T<sub>C</sub>=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
Off Chara	Off Characteristics					
V <sub>(BR)GSS</sub>	Gate-Source Breakdwon Voltage	$I_{G} = 10\mu A, V_{DS} = 0$	20			V
I <sub>GSS</sub>	Gate Reverse Current	$V_{GS} = 10V, V_{DS} = 0$			20	nA
V <sub>GS</sub> (off)	Gate-Source Cutoff Voltage	$V_{DS} = -10V, I_{D} = -10\mu A$			8.0	V
On Characteristics						
I <sub>DSS</sub>	Zero-Gate Voltage Drain Current *	$V_{DS} = -10V, V_{GS} = 0$	-0.3		-15	mA
Small Signal Characteristics						
gfs	Forward Transfer Conductance	$V_{DS} = -10V, V_{GS} = 0, f = 1.0KHz$	800		5000	μmhos
C <sub>iss</sub>	Input Capacitance	$V_{DS} = -10V, V_{GS} = 0, f = 1.0KHz$			32	pF
C <sub>rss</sub>	Reverse Transfer Capacitance	$V_{DS} = -10V, V_{GS} = 0, f = 1.0KHz$			16	pF
* Pulse Test: Pulse Width < 300ms Duty Cycle < 2%						

## Thermal Characteristics T<sub>A</sub>=25°C unless otherwise noted

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

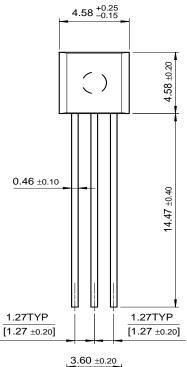
<sup>\*</sup> Device mounted on FR-4 PCB 1.6" × 1.6" × 0.06"

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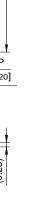
These rating are based on a maximum junction temperature of 150 degrees C.
These are steady limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

# **Package Dimensions**

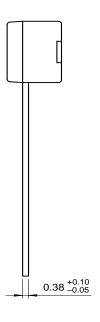
TO-92



1.02 ±0.10 0.38 <sup>+0.10</sup> 0.38 −0.05



(R2.29)



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CoolFET™	FASTr™	MicroFET™	PowerTrench <sup>®</sup>	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
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EnSigna™	$I^2C^{TM}$	$OCX^{TM}$	RapidConfigure™	UHC™
Across the board.	. Around the world.™	OCXPro™	RapidConnect™	UltraFET <sup>®</sup>
The Power Franchise™		OPTOLOGIC <sup>®</sup>	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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### **Definition of Terms**

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