



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* $T_C=25^\circ\text{C}$ 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_{STG}	Storage Temperature Range	-55 ~ 150	$^\circ\text{C}$

* This ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- These ratings 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.

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = 10\mu\text{A}, V_{DS} = 0$	20			V
I_{GSS}	Gate Reverse Current	$V_{GS} = 10\text{V}, V_{DS} = 0$			20	nA
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = -10\text{V}, I_D = -10\mu\text{A}$			8.0	V
On Characteristics						
I_{DSS}	Zero-Gate Voltage Drain Current *	$V_{DS} = -10\text{V}, V_{GS} = 0$	-0.3		-15	mA
Small Signal Characteristics						
g_{fs}	Forward Transfer Conductance	$V_{DS} = -10\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$	800		5000	μmhos
C_{iss}	Input Capacitance	$V_{DS} = -10\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$			32	pF
C_{rss}	Reverse Transfer Capacitance	$V_{DS} = -10\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$			16	pF

* Pulse Test: Pulse Width $\leq 300\text{ms}$, Duty Cycle $\leq 2\%$

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

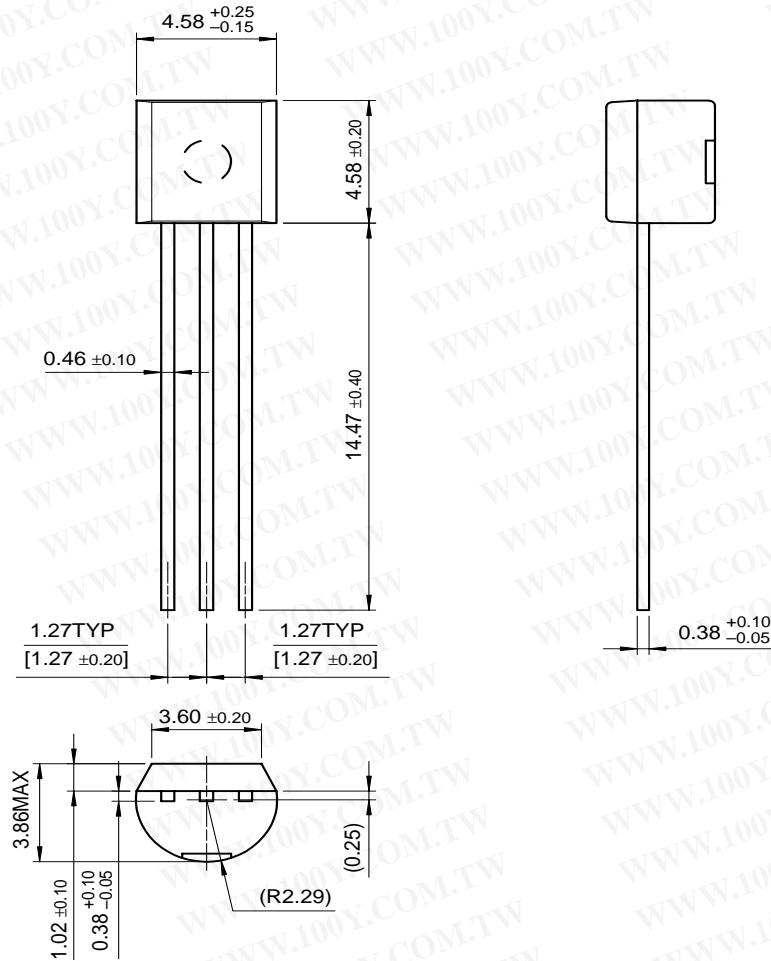
Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above 25°C	350 2.8	mW mW/ $^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C/W}$

* Device mounted on FR-4 PCB $1.6'' \times 1.6'' \times 0.06''$

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Package Dimensions

TO-92



Dimensions in Millimeters

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