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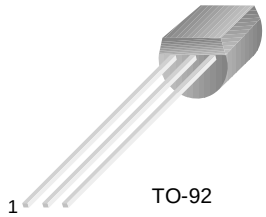
2N3859A

NPN General Purpose Amplifier

- This device designed for use as general purpose amplifier and switches requiring collector currents to 300mA.
- Sourced from Process 10.
- See PN100 for characteristics.



TO-92

1. Emitter 2. Collector 3. Base

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings* T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	60	V
V_{CBO}	Collector-Base Voltage	60	V
V_{EBO}	Emitter-Base Voltage	6.0	V
I_C	Collector Current - Continuous	500	mA
T_J, T_{ST}	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						
$BV_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C = 1.0mA, I_B = 0	60			V
$BV_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 100µA, I_E = 0	60			V
$BV_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 100µA, I_C = 0	6.0			V
I_{CBO}	Collector Cut-off Current	V_{CB} = 18V, I_E = 0			0.5	µA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 4.0V, I_C = 0			0.5	µA
On Characteristics *						
h_{FE}	DC Current Gain	V_{CE}= 1.0V, I_C = 1.0mA V_{CE}= 1.0V, I_C = 1.0mA	75 100		 200	
Small Signal Characteristics						
C_{ob}	Current Gain Bandwidth Product	V_{CB} = 10V, f = 1.0MHz			4	pF
f_T	Output Capacitance	I_C = 2.0mA, V_{CE} = 10V	90		250	MHz
rb'C_c	Collector-Base Time Constant	V_{CE} = 10V, I_C = 2.0mA f = 31.9MHz			150	pS

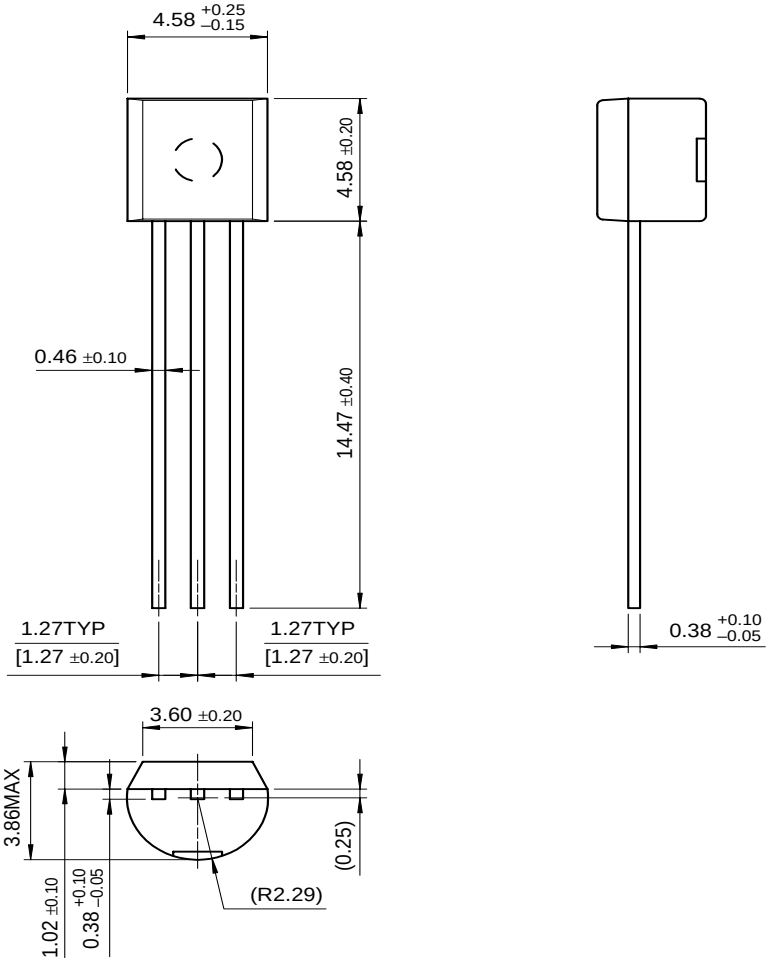
* Pulse Test: Pulse ≤ 300µs, Duty Cycle ≤ 2.0%

Thermal Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above 25°C	625 5.0	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	°C/W

Package Dimensions

TO-92



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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