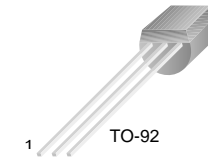


MPSA20

NPN General Purpose Amplifier

- Sourced from process 10



1. Emitter 2. Base 3. Collector

Absolute Maximum Ratings* $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Collector current - Continuous	100	mA
T_J, T_{stg}	Operating and Storage Junction Temperature	-55 ~ +150	$^\circ\text{C}$

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

NOTES:

- These ratings are based on maximum junction temperature of 150 degrees C.
- 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						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 1\text{mA}, I_B = 0$	40			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_C = 100\mu\text{A}, I_C = 0$	4			V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 30\text{V}, I_E = 0$			100	nA
On Characteristics						
h_{FE}	DC Current Gain	$I_C = 5\text{mA}, V_{CE} = 10\text{V}$	40		400	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.25	V
Small Signal Characteristics						
f_T	Current Gain Bandwidth Product	$I_C = 5\text{mA}, V_{CE} = 10\text{V}, f = 100\text{MHz}$	125			MHz
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0, f=100\text{KHZ}$			4.0	pF

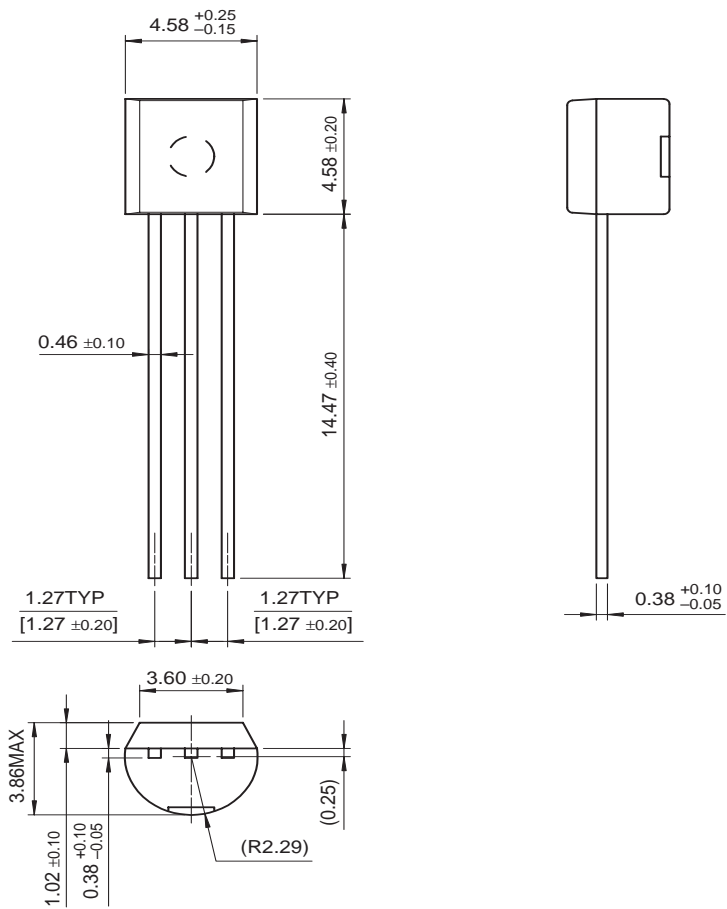
Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
P_D	Total Device Dissipation Derate above 25°C	625 5.0	mW 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	200	$^\circ\text{C}/\text{W}$

* Device mounted on FR-4 PCB $36\text{mm} \times 18\text{mm} \times 1.5\text{mm}$: mounting pad for the collector lead min. 6cm.

Package Dimensions

TO-92



Dimensions in Millimeters

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E ² C MOS™	i-Lo™	OCX™	μSerDes™	VCX™
EnSigna™	ImpliedDisconnect™	OCXPro™	SILENT SWITCHER®	Wire™
FACT™	IntelliMAX™	OPTOLOGIC®	SMART START™	
FACT Quiet Series™		OPTOPLANAR™	SPM™	
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Programmable Active Droop™		Power247™	SuperSOT™-3	
		PowerEdge™	SuperSOT™-6	

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