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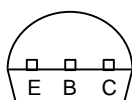
MPS918

NPN Silicon Amplifier Transistor

Features

- Simplifies Circuit Design
- Reduces Component Count

Pin Configuration
Bottom View



Maximum Ratings

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	15	V
V_{CBO}	Collector-Base Voltage	30	V
V_{EBO}	Emitter-Base Voltage	3.0	V
I_C	Collector Current, Continuous	50	mA
T_J	Operating Junction Temperature	-55 to +150	$^{\circ}C$
T_{STG}	Storage Temperature	-55 to +150	$^{\circ}C$

Thermal Characteristics

Symbol	Rating	Max	Unit
P_D	Total Device Dissipation	350	mW
	Derate above $25^{\circ}C$	2.8	mW/ $^{\circ}C$
P_D	Total Device Dissipation	0.85	W
	Derate above $25^{\circ}C$	6.8	mW/ $^{\circ}C$
R_{JC}	Thermal Resistance, Junction to Case	147	$^{\circ}C/W$
R_{JA}	Thermal Resistance, Junction to Ambient ⁽¹⁾	357	$^{\circ}C/W$

Electrical Characteristics @ $25^{\circ}C$ Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
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OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ⁽²⁾ ($I_C=3.0mA$, $I_E=0$)	15	---	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=1.0mA$, $I_E=0$)	30	---	Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=10mA$, $I_C=0$)	3.0	---	Vdc
I_{CBO}	Collector Cutoff Current ($V_{CE}=15Vdc$, $I_E=0$)	---	10	nAdc

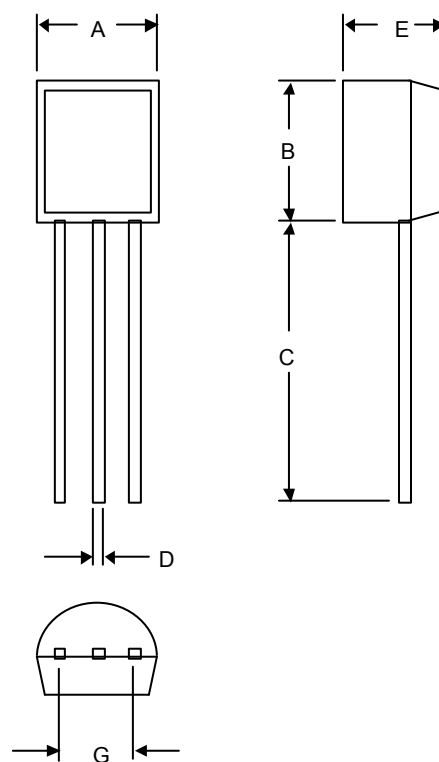
ON CHARACTERISTICS

h_{FE}	DC Current Gain ($V_{CE}=1.0Vdc$, $I_C=3.0mA$)	20	---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=10mA$, $I_B=1.0mA$)	---	0.4	Vdc
$V_{BE(sat)}$	Base-Emitter On Voltage ($I_C=10mA$, $I_B=1.0mA$)	---	1.0	Vdc

(1) R_{JA} is measured with the device soldered into a typical printed circuit board.

(2) Pulse Test: Pulse Width<300us, Duty Cycle<1.0%

TO-92



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.170	.190	4.33	4.83	
B	.170	.190	4.30	4.83	
C	.550	.590	13.97	14.97	
D	.010	.020	0.36	0.56	
E	.130	.160	3.30	3.96	
G	.010	.104	2.44	2.64	

MPS918



Symbol	Parameter	Min	Max	Units
SMALL-SIGNAL CHARACTERISTICS				
f_T	Current-Gain-Bandwidth Product ⁽²⁾ ($I_C=4.0\text{mA}$, $V_{CE}=10\text{Vdc}$, $f=100\text{MHz}$)	600	---	MHz
C_{obo}	Output Capacitance ($V_{CB}=0$, $I_E=0$, $f=1.0\text{MHz}$) ($V_{CB}=10\text{Vdc}$, $I_E=0$, $f=1.0\text{MHz}$)	---	3.0	pF
		---	1.7	
C_{ibp}	Input Capacitance ($V_{EB}=0.5\text{Vdc}$, $I_C=0$, $f=1.0\text{MHz}$)	---	2.0	pF
h_{fe}	Small-Signal Current Gain ($I_C=8.0\text{mA}$, $V_{CE}=10\text{Vdc}$, $f=1.0\text{KHz}$)	20	250	---
NF	Noise Figure ($I_C=1.0\text{mA}$, $V_{CE}=6.0\text{Vdc}$, $R_S=400\text{OHMS}$, $f=60\text{MHz}$)	---	6.0	dB

* Pulse Test: Pulse Width<300us, Duty Cycle<1.0%