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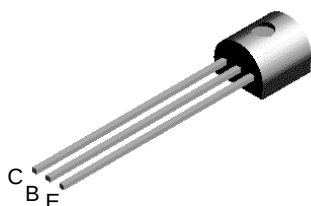
S9013

NPN Silicon Transistors

Features

- TO-92 Plastic-Encapsulate Transistors
- Capable of 0.625Watts($T_{amb}=25^{\circ}\text{C}$) of Power Dissipation.
- Collector-current 0.5A
- Collector-base Voltage 40V
- Operating and storage junction temperature range: -55°C to $+150^{\circ}\text{C}$
- Marking Code: S9013

Pin Configuration



Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
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OFF CHARACTERISTICS

$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=100\mu\text{Adc}$, $I_E=0$)	40	---	Vdc
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=0.1\text{mAdc}$, $I_E=0$)	25	---	Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=100\mu\text{Adc}$, $I_C=0$)	5.0	---	Vdc
I_{CBO}	Collector Cutoff Current ($V_{CB}=40\text{Vdc}$, $I_E=0$)	---	0.1	μAdc
I_{CEO}	Collector Cutoff Current ($V_{CE}=20\text{Vdc}$, $I_B=0$)	---	0.1	μAdc
I_{EBO}	Emitter Cutoff Current ($V_{EB}=5.0\text{Vdc}$, $I_C=0$)	---	0.1	μAdc

ON CHARACTERISTICS

$h_{FE(1)}$	DC Current Gain ($I_C=50\text{mAdc}$, $V_{CE}=1.0\text{Vdc}$)	64	300	---
$h_{FE(2)}$	DC Current Gain ($I_C=500\text{mAdc}$, $V_{CE}=1.0\text{Vdc}$)	40	---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=500\text{mAdc}$, $I_E=50\text{mAdc}$)	---	0.6	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=500\text{mAdc}$, $I_E=50\text{mAdc}$)	---	1.2	Vdc
V_{EB}	Base- Emitter Voltage ($I_E=100\text{mAdc}$)	---	1.4	Vdc

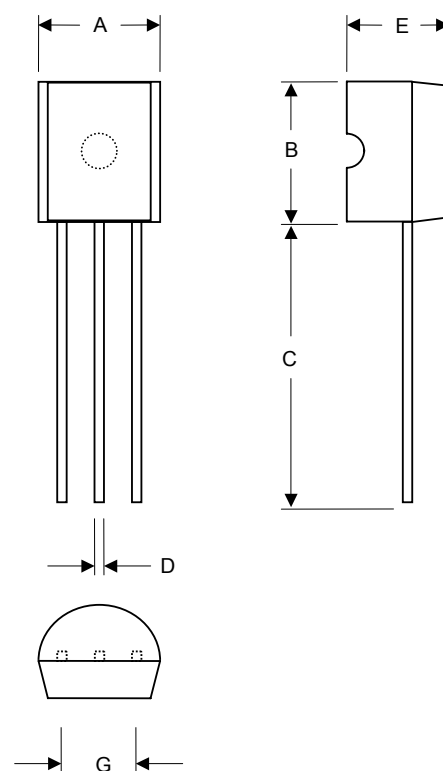
SMALL-SIGNAL CHARACTERISTICS

f_T	Transistor Frequency ($I_C=20\text{mAdc}$, $V_{CE}=6.0\text{Vdc}$, $f=30\text{MHz}$)	150	---	MHz
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CLASSIFICATION OF $h_{FE(1)}$

Rank	G	H	I
Range	120-150	150-200	190-300

TO-92



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	