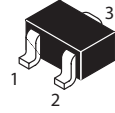


### NPN Silicon Transistor

 Lead(Pb)-Free

#### FEATURES:

\* Power dissipation

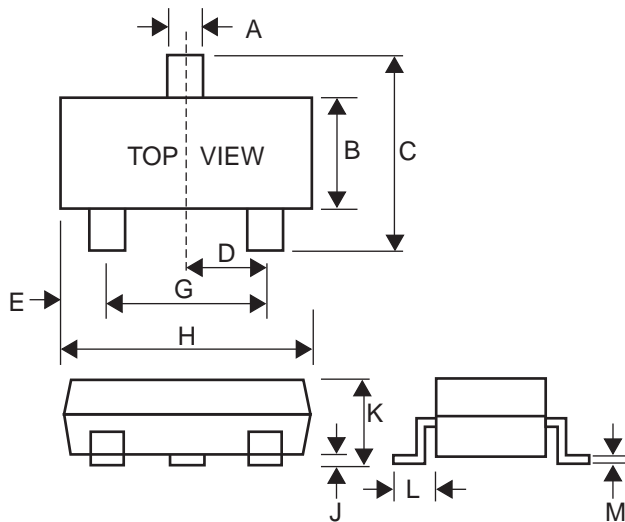


1. BASE  
2. EMITTER  
3. COLLECTOR

**SOT-323(SC-70)**

### SOT-323 Outline Dimensions

Unit:mm



SOT-323		
Dim	Min	Max
A	0.30	0.40
B	1.15	1.35
C	2.00	2.40
D	-	0.65
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.00	0.10
K	0.80	1.00
L	0.42	0.53
M	0.10	0.25

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

Rating	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	30	V
Emitter-Base Voltage	$V_{EBO}$	4	V
Collector Current -Continuous	$I_C$	20	mA
Collector Power Dissipation	$P_D$	100	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS** ( $T_a=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit
Collector-base breakdown voltage $I_C=100\mu\text{A}, I_E=0$	$V_{(BR)CBO}$	40	-	-	V
Collector-emitter breakdown voltage $I_C=1\text{mA}, I_B=0$	$V_{(BR)CEO}$	30	-	-	V
Emitter-base breakdown voltage $I_E=100\mu\text{A}, I_C=0$	$V_{(BR)EBO}$	4	-	-	V
Collector cut-off current $V_{CB}=40\text{V}, I_E=0$	$I_{CBO}$	-	-	0.1	$\mu\text{A}$
Emitter cut-off current $V_{EB}=4\text{V}, I_C=0$	$I_{EBO}$	-	-	0.5	$\mu\text{A}$
DC current gain $V_{CE}=6\text{V}, I_C=1\text{mA}$	$h_{FE}$	40	-	200	-
Transition frequency $V_{CE}=6\text{V}, I_C=1\text{mA}$	$f_T$	260	550	-	MHz
Reverse transfer capacitance $V_{CB}=10\text{V}, f=1\text{MHz}$	$C_{re}$	-	0.55	-	pF
Collector-base time constant $V_{CB}=6\text{V}, I_C=1\text{mA}, f=30\text{MHz}$	$C_C, \tau_{bb}$	-	-	25	pS
Noise figure $V_{CC}=6\text{V}, I_C=1\text{mA}, f=100\text{MHz}$	NF	-	2	5	dB
Power gain $V_{CC}=6\text{V}, I_C=1\text{mA}, f=100\text{MHz}$	G <sub>pe</sub>	17	23	-	dB

**CLASSIFICATION OF  $h_{FE}$** 

Rank	R	O	Y
Range	40-80	70-140	120-200
Marking	QR	QO	QY

## Typical Characteristics

