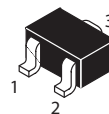


NPN Silicon Transistor

Pb Lead(Pb)-Free

FEATURES:

* Power dissipation

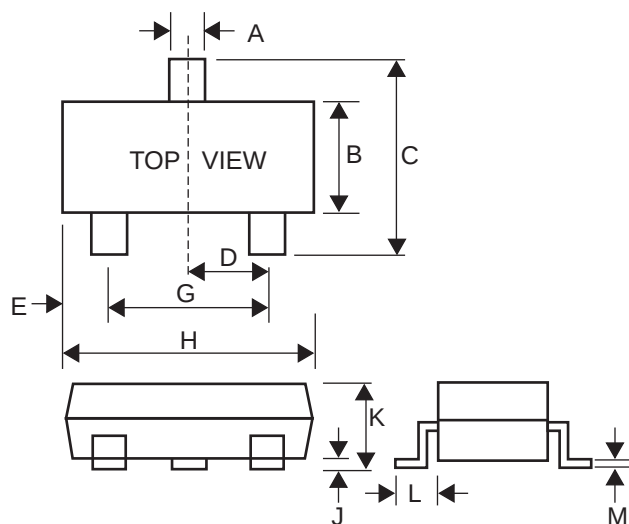


1. BASE
2. EMITTER
3. COLLECTOR

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 $I_{\text{C}}=100\mu\text{A}, I_{\text{E}}=0$	$V_{(\text{BR})\text{CBO}}$	40	-	-	V
Collector-emitter breakdown voltage $I_{\text{C}}=1\text{mA}, I_{\text{B}}=0$	$V_{(\text{BR})\text{CEO}}$	30	-	-	V
Emitter-base breakdown voltage $I_{\text{E}}=100\mu\text{A}, I_{\text{C}}=0$	$V_{(\text{BR})\text{EBO}}$	4	-	-	V
Collector cut-off current $V_{\text{CB}}=40\text{V}, I_{\text{E}}=0$	I_{CBO}	-	-	0.1	μA
Emitter cut-off current $V_{\text{EB}}=4\text{V}, I_{\text{C}}=0$	I_{EBO}	-	-	0.5	μA
DC current gain $V_{\text{CE}}=6\text{V}, I_{\text{C}}=1\text{mA}$	h_{FE}	40	-	200	-
Transition frequency $V_{\text{CE}}=6\text{V}, I_{\text{C}}=1\text{mA}$	f_{T}	260	550	-	MHz
Reverse transfer capacitance $V_{\text{CB}}=10\text{V}, f=1\text{MHz}$	C_{re}	-	0.55	-	pF
Collector-base time constant $V_{\text{CB}}=6\text{V}, I_{\text{C}}=1\text{mA}, f=30\text{MHz}$	$C_{\text{C}}, \tau_{\text{bb}}$	-	-	25	pS
Noise figure $V_{\text{CC}}=6\text{V}, I_{\text{C}}=1\text{mA}, f=100\text{MHz}$	NF	-	2	5	dB
Power gain $V_{\text{CC}}=6\text{V}, I_{\text{C}}=1\text{mA}, f=100\text{MHz}$	Gpe	17	23	-	dB

CLASSIFICATION OF h_{FE}

Rank	R	O	Y
Range	40-80	70-140	100-200
Marking	QR	QO	QY

Typical Characteristics

