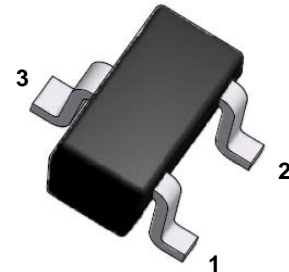


150mW SOT-523 SURFACE MOUNT Plastic Package NPN Silicon General Purpose Transistor

Green Product



SOT-523

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

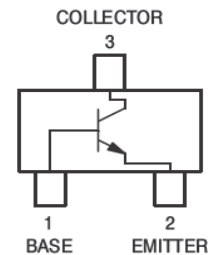
Symbol	Parameter	Value	Units
P_C	Collector Power Dissipation	150	mW
T_{STG}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
T_J	Operating Junction Temperature	+150	$^\circ\text{C}$
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current - Continuous	100	mA

These ratings are limiting values above which the serviceability of the diode may be impaired.

Specification Features:

- Low $C_{ob} = 2.0\text{pF}$ (Typical)
- Low $V_{ce(sat)} < 0.4\text{V}$
- RoHS Compliant
- Green EMC
- Matte Tin(Sn) Lead Finish
- Weight: approx. 0.002g

Electrical Symbol:



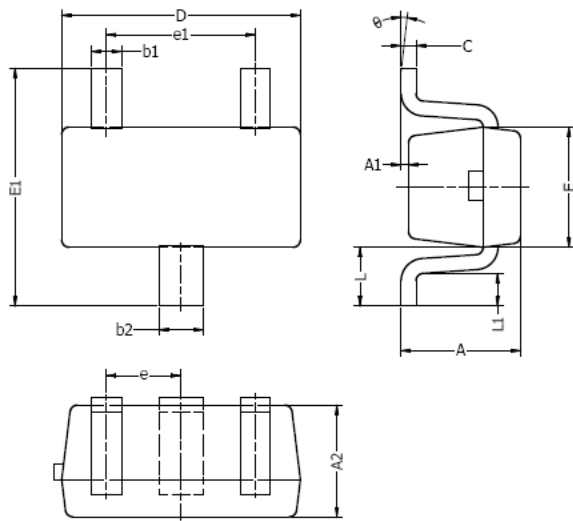
Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=50\mu\text{A}, I_E=0\text{A}$	50			Volts
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}, I_B=0\text{A}$	50			Volts
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=50\mu\text{A}, I_C=0\text{A}$	5			Volts
I_{CBO}	Collector Cut-off Current	$V_{CB}=50\text{V}, I_E=0\text{A}$			0.1	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=5\text{V}, I_C=0\text{A}$			0.1	μA
h_{FE}	DC Current Gain	$V_{CE}=6\text{V}, I_C=1\text{mA}$	120		560	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=50\text{mA}, I_B=5\text{mA}$			0.4	Volts
f_T	Transition Frequency	$V_{CE}=5\text{V}, I_C=10\text{mA}$ $f=30\text{MHz}$		280		MHz
C_{OB}	Collector Output Capacitance	$V_{CB}=12\text{V}, I_E=0\text{A},$ $f=1\text{MHz}$		2.0		pF

Classification of h_{FE}

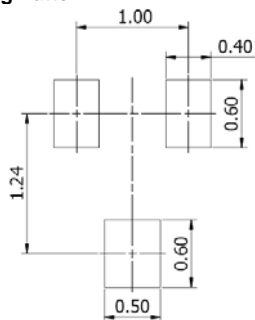
Rank	Q	R	S
Range	120 - 270	180 - 390	270 - 560
Marking	BQ	BR	BS

SOT-523 Package Outline



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.70	0.90	0.028	0.035
A1	0.00	0.10	0.000	0.004
A2	0.70	0.80	0.028	0.031
b1	0.15	0.25	0.006	0.010
b2	0.25	0.35	0.010	0.014
c	0.10	0.20	0.004	0.008
D	1.50	1.70	0.059	0.067
E	0.70	0.90	0.028	0.035
E1	1.45	1.75	0.057	0.069
e	0.50 TYP.		0.020 TYP.	
e1	0.90	1.10	0.035	0.043
L	0.40 REF.		0.016 REF.	
L1	0.10	0.30	0.004	0.012
θ	0°	8°	0°	8°

Typical Soldering Pattern:



NOTES:

1. Above package outline conforms to JEITA EAIJ ED-7500A SC-75A.
2. Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

NOTICE

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