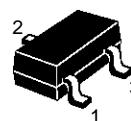


SMALL SIGNAL NPN TRANSISTOR

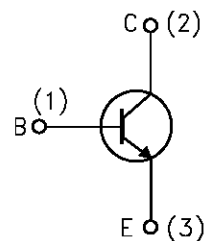
Type	Marking
BCX19	U1

- SILICON EPITAXIAL PLANAR NPN TRANSISTORS
- MINIATURE PLASTIC PACKAGE FOR APPLICATION IN SURFACE MOUNTING CIRCUITS
- MEDIUM CURRENT AF AMPLIFICATION AND SWITCHING
- PNP COMPLEMENTS IS BCX17



SOT-23

INTERNAL SCHEMATIC DIAGRAM



SC08960

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CES}	Collector-Emitter Voltage ($V_{BE} = 0$)	50	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	45	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	5	V
I_C	Collector Current	0.5	A
I_{CM}	Collector Peak Current	1	A
I_B	Base Current	0.1	A
I_{BM}	Base Peak Current	0.2	A
I_{EM}	Emitter Peak Current	-1	A
P_{tot}	Total Dissipation at $T_C = 25^\circ\text{C}$	350	mW
T_{stg}	Storage Temperature	-65 to 150	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	150	$^\circ\text{C}$

BCX19

THERMAL DATA

$R_{thj-amb}$	Thermal Resistance Junction-Ambient	Max	350	$^{\circ}\text{C}/\text{W}$
R_{thj-SR}	Thermal Resistance Junction-Substrate	Max	290	$^{\circ}\text{C}/\text{W}$

• Mounted on a ceramic substrate area = 15 x 15 x 0.6 mm

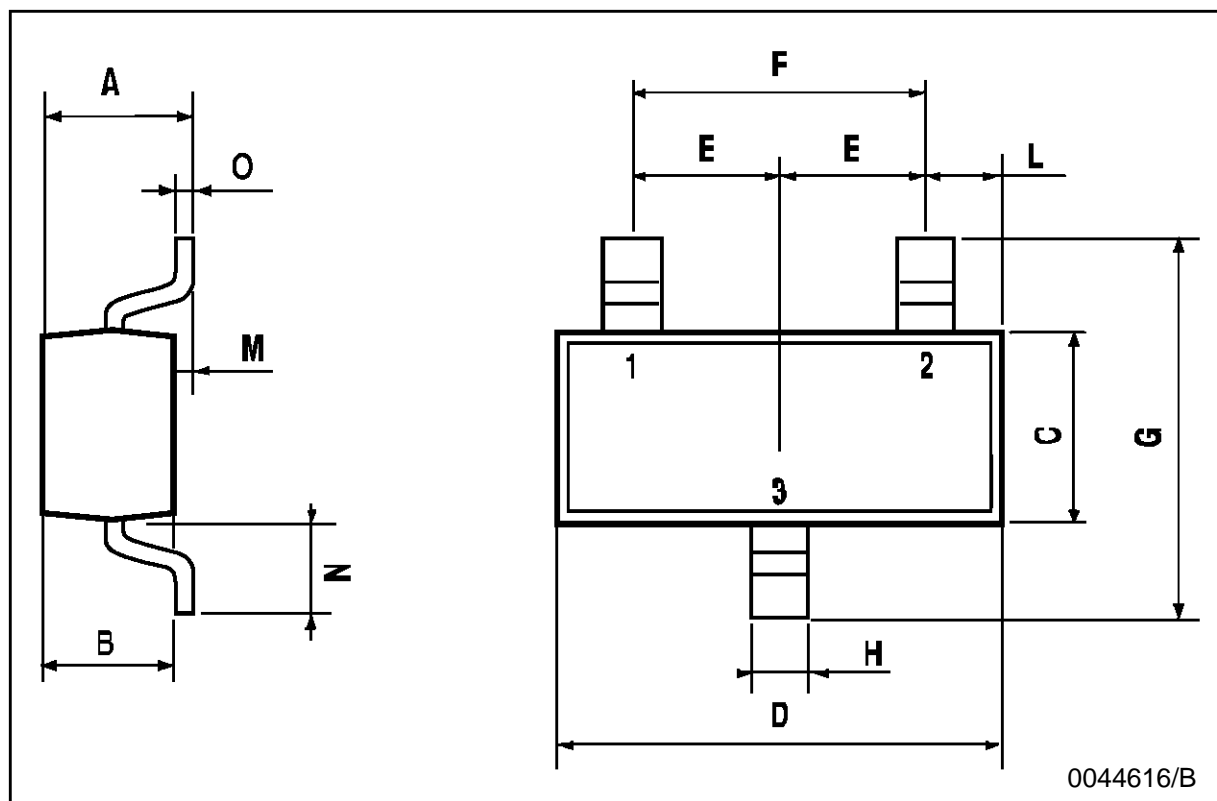
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 20\text{ V}$ $V_{CB} = 20\text{ V}$ $T_j = 150^{\circ}\text{C}$			100 5	nA μA
$V_{(BR)CES}^*$	Collector-Emitter Breakdown Voltage ($V_{BE} = 0$)	$I_C = 10\ \mu\text{A}$	50			V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ($I_B = 0$)	$I_C = 10\text{ mA}$	45			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_C = 0$)	$I_E = 10\ \mu\text{A}$	5			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 500\text{ mA}$ $I_B = 50\text{ mA}$			0.62	V
$V_{BE(on)}^*$	Base-Emitter On Voltage	$I_C = 500\text{ mA}$ $V_{CE} = 1\text{ V}$			1.2	V
h_{FE}^*	DC Current Gain	$I_C = 100\text{ mA}$ $V_{CE} = 1\text{ V}$ $I_C = 300\text{ mA}$ $V_{CE} = 1\text{ V}$ $I_C = 500\text{ mA}$ $V_{CE} = 1\text{ V}$	100 70 40			
f_T	Transition Frequency	$I_C = 10\text{ mA}$ $V_{CE} = 5\text{ V}$ $f = 100\text{ MHz}$		200		MHz
C_{CB}	Collector Base Capacitance	$I_E = 0\text{ mA}$ $V_{CB} = 10\text{ V}$ $f = 1\text{ MHz}$		6		pF

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 2\%$

SOT-23 MECHANICAL DATA

DIM.	mm			mils		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	0.85		1.1	33.4		43.3
B	0.65		0.95	25.6		37.4
C	1.20		1.4	47.2		55.1
D	2.80		3	110.2		118
E	0.95		1.05	37.4		41.3
F	1.9		2.05	74.8		80.7
G	2.1		2.5	82.6		98.4
H	0.38		0.48	14.9		18.8
L	0.3		0.6	11.8		23.6
M	0		0.1	0		3.9
N	0.3		0.65	11.8		25.6
O	0.09		0.17	3.5		6.7



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