

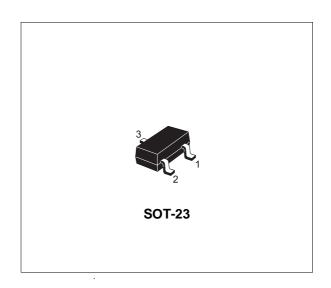
# SMALL SIGNAL NPN TRANSISTOR

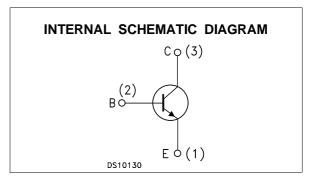
Туре	Marking		
BCX19	U1		

- SILICON EPITAXIAL PLANAR NPN TRANSISTOR
- MINIATURE SOT-23 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE AND REEL PACKING
- THE PNP COMPLEMENTARY TYPE IS BCX17

#### **APPLICATIONS**

- WELL SUITABLE FOR PORTABLE EQUIPMENT
- SMALL LOAD SWITCH TRANSISTOR WITH HIGH GAIN AND LOW SATURATION VOLTAGE





#### **ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter Value		Unit
V <sub>CBO</sub>	Collector-Base Voltage (I <sub>E</sub> = 0)	50	V
$V_{CEO}$	Collector-Emitter Voltage (I <sub>B</sub> = 0)	45	V
$V_{EBO}$	Emitter-Base Voltage (I <sub>C</sub> = 0)	5	V
Ic	Collector Current	0.5	Α
I <sub>CM</sub>	Collector Peak Current	1	Α
P <sub>tot</sub>	Total Dissipation at T <sub>C</sub> = 25 °C	250	
T <sub>stg</sub>	Storage Temperature	-65 to 150	
Tj	Max. Operating Junction Temperature	150	°C

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#### THERMAL DATA

R <sub>thj-amb</sub> •	Thermal Resistance Junction-Ambient	Max	500	°C/W	
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<sup>•</sup> Device mounted on a PCB area of 1 cm<sup>2</sup>.

### **ELECTRICAL CHARACTERISTICS** (T<sub>case</sub> = 25 °C unless otherwise specified)

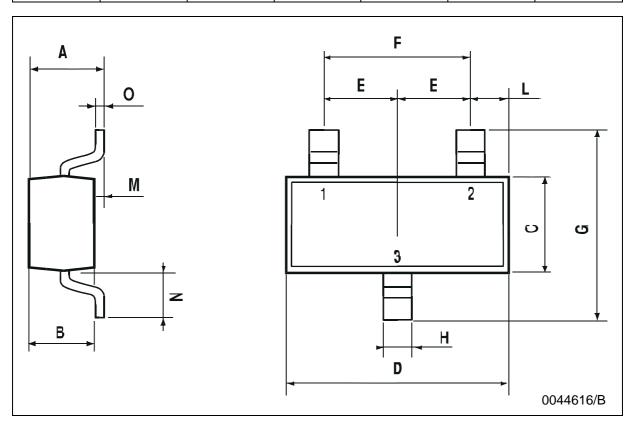
Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
Ісво	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = 20 V V <sub>CB</sub> = 20 V			100 5	nΑ μΑ
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V			100	nA
V <sub>(BR)</sub> CBO	Collector-Base Breakdown Voltage (I <sub>E</sub> = 0)	I <sub>C</sub> = 10 μA	50			V
V <sub>(BR)CEO*</sub>	Collector-Emitter Breakdown Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 10 mA	45			٧
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> = 10 μA	5			V
$V_{CE(sat)^*}$	Collector-Emitter Saturation Voltage	$I_C = 500 \text{ mA}$ $I_B = 50 \text{ mA}$			0.62	٧
V <sub>BE(on)</sub> *	Base-Emitter On Voltage	I <sub>C</sub> = 500 mA			1.2	V
h <sub>FE</sub> *	DC Current Gain	I <sub>C</sub> = 100 mA	100 70 40		600	
f⊤	Transition Frequency	$I_C = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$ $f = 100 \text{ MHz}$	100			MHz
С <sub>СВО</sub>	Collector-Base Capacitance	$I_E = 0 \text{ mA}$ $V_{CB} = 10 \text{ V}$ $f = 1 \text{MHz}$		5		pF

<sup>\*</sup> Pulsed: Pulse duration = 300 μs, duty cycle ≤ 2 %

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## **SOT-23 MECHANICAL DATA**

DIM.	mm			mils			
Dim.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
А	0.85		1.1	33.4		43.3	
В	0.65		0.95	25.6		37.4	
С	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	
Н	0.38		0.48	14.9		18.8	
L	0.3		0.6	11.8		23.6	
М	0		0.1	0		3.9	
N	0.3		0.65	11.8		25.6	
0	0.09		0.17	3.5		6.7	



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