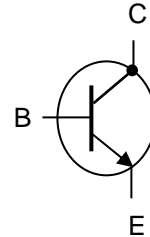


## BSX45-BSX46-BSX47

### NPN MEDIUM POWER TRANSISTORS

The BSX45-BSX46-BSX47 are NPN transistors mounted in TO-39 metal package. They are intended for use in general industrial applications. High current and low voltage. Compliance to RoHS.



#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value			Unit
		BSX45	BSX46	BSX47	
$V_{CEO}$	Collector-Emitter Voltage   $I_B = 0$	40	60	80	V
$V_{CBO}$	Collector-Base Voltage   $I_E = 0$	80	100	120	V
$V_{EBO}$	Emitter-Base Voltage   $I_C = 0$	7			V
$I_C$	Collector Current	1			A
$I_{CM}$	Collector Peak Current	1.5			A
$I_{BM}$	Base Peak Current	200			mA
$P_D$	Total Power Dissipation   $T_{amb} = 25^\circ$	6.25			W
$T_J$	Junction Temperature	200			°C
$T_{amb}$	Operating ambient temperature	-65 to +150			
$T_{Stg}$	Storage Temperature range	-65 to +150			

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJ-a}$	Thermal Resistance, Junction to ambient	200	°C/W
$R_{thJ-c}$	Thermal Resistance, Junction to case	28	°C/W

#### SWITCHING TIMES

Symbol	Ratings	Value	Unit
$t_{on}$	Turn-on time	200	ns
$t_{off}$	Turn-off time		
	$I_{Con} = 100\text{mA}; I_{Bon} = 5\text{mA}$	850	ns
	$I_{Boff} = -5\text{mA}$		

## BSX45-BSX46-BSX47

### ELECTRICAL CHARACTERISTICS

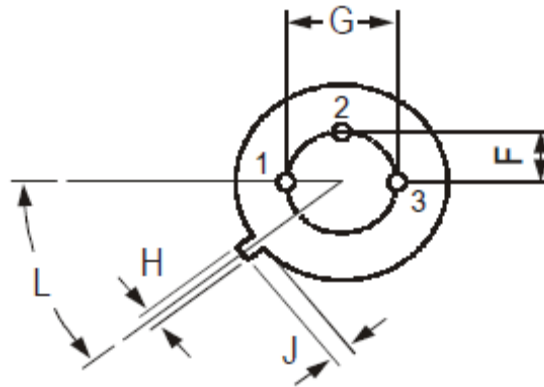
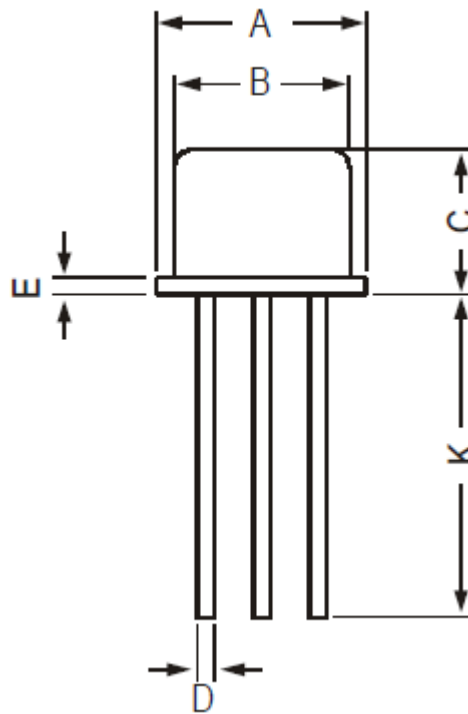
T<sub>j</sub>=25°C unless otherwise specified

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit		
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 60 V, I <sub>E</sub> = 0	-	-	30	nA		
		BSX45 BSX46						
		V <sub>CB</sub> = 80 V, I <sub>E</sub> = 0	BSX47	-	-	10	μA	
		V <sub>CB</sub> = 60 V, I <sub>E</sub> = 0 T <sub>j</sub> = 150°C	BSX45 BSX46					
V <sub>CB</sub> = 80 V, I <sub>E</sub> = 0 T <sub>j</sub> = 150°C	BSX47							
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>BE</sub> = 5.0 V, I <sub>C</sub> = 0	-	-	10	nA		
V <sub>CE(SAT)</sub>	Collector-Emitter saturation Voltage	I <sub>C</sub> = 1 A, I <sub>B</sub> = 100 mA	-	-	1	V		
		BSX45 BSX46						
		I <sub>C</sub> = 500 mA I <sub>B</sub> = 25 mA	-	-	0.9			
V <sub>BE</sub>	Base-Emitter Voltage	I <sub>C</sub> = 100 mA, V <sub>CE</sub> = 1 V	-	-	1	V		
		I <sub>C</sub> = 500 mA, V <sub>CE</sub> = 1 V	0.75	-	1.5			
		I <sub>C</sub> = 1 A, V <sub>CE</sub> = 1 V	-	-	2			
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 100 μA V <sub>CE</sub> = 1 V	15	40	-	-		
							BSX45/10	
							BSX46/10	
							BSX47/10	
		I <sub>C</sub> = 100 mA V <sub>CE</sub> = 1 V	63	100	160		250	
								BSX45/16
								BSX46/16
								BSX47/16
		I <sub>C</sub> = 500 mA V <sub>CE</sub> = 1 V	25	40	-		-	
								BSX45/10
								BSX46/10
								BSX47/10
		I <sub>C</sub> = 1 A, V <sub>CE</sub> = 1 V	35	60	-		-	
								BSX45/16
								BSX46/16
								BSX47/16
I <sub>C</sub> = 1 A, V <sub>CE</sub> = 1 V	-	20	-	-				
					BSX45/10			
					BSX46/10			
					BSX47/10			
I <sub>C</sub> = 1 A, V <sub>CE</sub> = 1 V	-	30	-	-				
					BSX45/16			
					BSX46/16			
					BSX47/16			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> = 50 mA, V <sub>CE</sub> = 10 V f = 100MHz	50	-	-	MHz		
F	Noise figure	I <sub>C</sub> = 100 μA, V <sub>CE</sub> = 5 V, R <sub>S</sub> = 1kΩ f = 1kHz, B = 200Hz	-	3.5	-	db		

## BSX45-BSX46-BSX47

### MECHANICAL DATA CASE TO-39

DIMENSIONS (mm)		
	min	max
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	-
L	42°	48°



Pin 1 :	Emitter
Pin 2 :	Base
Pin 3 :	Collector
Case :	Collector

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