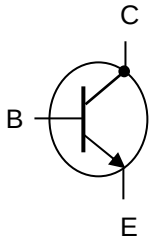
BSX45-BSX46-BSX47

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°	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	I_{Con} = 100mA; I_{Bon} = 5 mA	200	ns
t_{off}	Turn-off time	I_{Boff} = -5 mA	850	ns

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ELECTRICAL CHARACTERISTICS

Tj=25°C unless otherwise specified

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
I_{CBO}	Collector Cutoff Current	V_{CB} = 60 V, I_E =0	BSX45	-	-	30	nA
			BSX46				
		V_{CB} = 80 V, I_E =0	BSX47				
		V_{CB} = 60 V, I_E = 0 T_j = 150°C	BSX45	-	-	10	µA
			BSX46				
		V_{CB} = 80 V, I_E =0 T_j = 150°C	BSX47				
I_{EBO}	Emitter Cutoff Current	V_{BE} = 5.0 V, I_C =0		-	-	10	nA
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage	I_C = 1 A, I_B = 100 mA	BSX45	-	-	1	V
			BSX46				
		I_C = 500 mA I_B = 25 mA	BSX47	-	-	0.9	
V_{BE}	Base-Emitter Voltage	I_C = 100 mA, V_{CE} = 1 V		-	-	1	V
		I_C = 500 mA, V_{CE} = 1 V		0.75	-	1.5	
		I_C = 1 A, V_{CE} = 1 V		-	-	2	
h_{FE}	DC Current Gain	I_C = 100 µA V_{CE} = 1 V	BSX45/10	15	40	-	-
			BSX46/10				
			BSX47/10				
			BSX45/16	25	90	-	
			BSX46/16				
		I_C = 100 mA V_{CE} = 1 V	BSX45/10	63	100	160	
			BSX46/10				
			BSX47/10				
			BSX45/16	100	160	250	
			BSX46/16				
			BSX47/16				
		I_C = 500 mA V_{CE} = 1 V	BSX45/10	25	40	-	
			BSX46/10				
			BSX47/10				
			BSX45/16	35	60	-	
			BSX46/16				
		I_C = 1 A, V_{CE} = 1 V	BSX45/10	-	20	-	
			BSX46/10				
			BSX47/10				
			BSX45/16	-	30	-	
			BSX46/16				
f_T	Transition frequency	I_C = 50 mA, V_{CE} = 10 V f = 100MHz		50	-	-	MHz
F	Noise figure	I_C = 100 µA, V_{CE} = 5 V, RS=1kΩ f = 1kHz, B =200Hz		-	3.5	-	db

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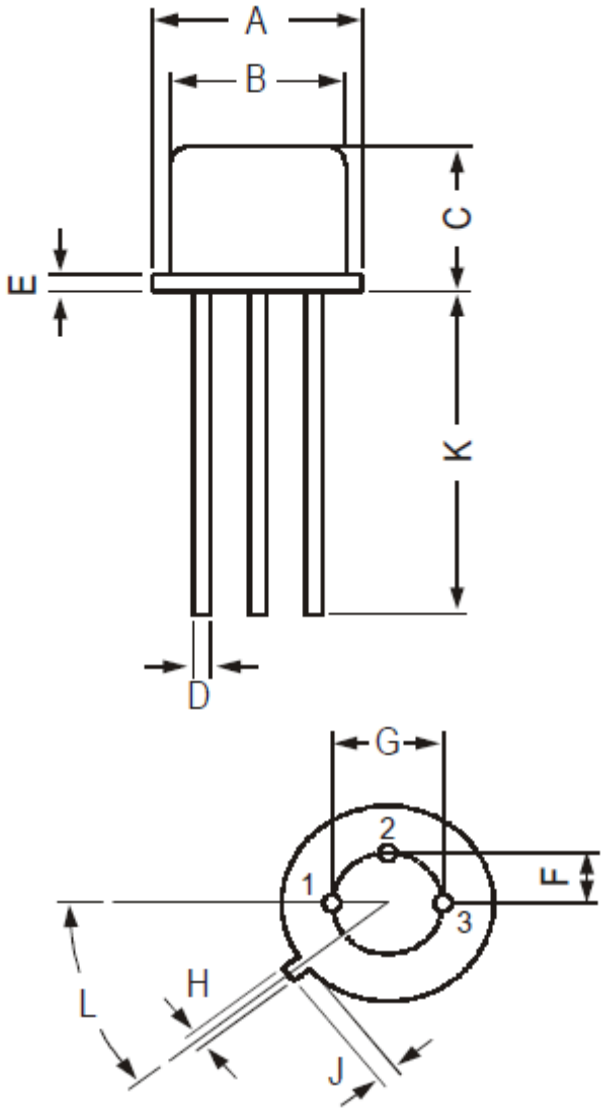
MECHANICAL DATA CASE TO-39

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

Revised August 2012