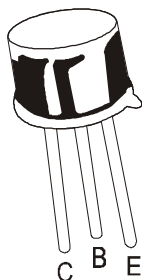


NPN SILICON PLANAR TRANSISTORS



BSX45

BSX46

BSX47

TO-39

Metal Can Package

AMPLIFIER TRANSISTORS

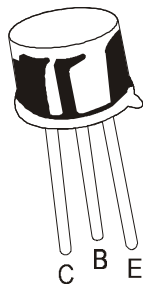
ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL		BSX45	BSX46	BSX47	UNITS
Collector Emitter Voltage	V_{CEO}		40	60	80	V
Collector Emitter Voltage	V_{CES}		80	100	120	V
Emitter Base Voltage	V_{EBO}			7.0		V
Collector Current Continuous	I_C			1.0		A
Power Dissipation @ Ta=25° C	P_D			1.0		W
Derate Above 25° C				5.71		mW/ °C
Power Dissipation@ Tc=25° C	P_D			5.0		W
Derate Above 25° C				28.6		mW/ °C
Operating And Storage Junction Temperature Range	T_j, T_{stg}			-65 to +200		°C
THERMAL RESISTANCE						
Junction to Ambient	$R_{th(j-a)}$			200		°C/W
Junction to Case	$R_{th(j-c)}$			35		°C/W

ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	BSX45	BSX46	BSX47	UNITS
Collector Emitter Voltage	V_{CEO}^*	$I_C=30mA, I_B=0$	>40	>60	>80	V
	V_{CES}	$I_C=100\mu A, V_{BE}=0$	>80	>100	>120	V
Emitter Base Voltage	V_{EBO}	$I_E=100\mu A, I_C=0$		>7.0		V
Collector Cut off Current	I_{CES}	$V_{CE}=60V, V_{BE}=0$	<10	<10		nA
		$V_{CE}=80V, V_{BE}=0$			<10	nA
	I_{CES}	$T_C=150^\circ C$				
		$V_{CE}=60V, V_{BE}=0$	<10	<10		μA
		$V_{CE}=80V, V_{BE}=0$			<10	μA
Emitter Cut off Current	I_{EBO}	$V_{EB}=5V, I_C=0$		<10		nA

NPN SILICON PLANAR TRANSISTORS



BSX45
BSX46
BSX47

TO-39
Metal Can Package

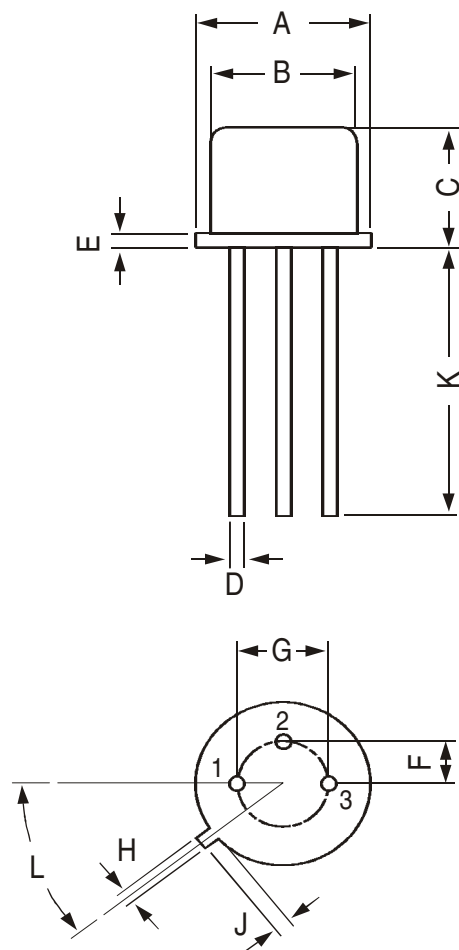
ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE	UNITS
DC Current Gain	h_{FE}	$I_C=0.1\text{mA}, V_{CE}=1\text{V}$		
		Group -6	>10	
		Group -10	>15	
		Group -16	>25	
	h_{FE}	$I_C=100\text{mA}, V_{CE}=1\text{V}^*$		
		Group -6	40 to 100	
		Group -10	63 to 160	
		Group -16	100 to 250	
	h_{FE}	$I_C=500\text{mA}, V_{CE}=1\text{V}^*$		
		Group -6	>15	
		Group -10	>25	
		Group -16	>35	
Base Emitter on Voltage	$V_{BE(on)}^*$	$I_C=100\text{mA}, V_{CE}=1\text{V}$	<1.0	V
		$I_C=500\text{mA}, V_{CE}=1\text{V}$	0.75 to 1.5	V
		$I_C=1\text{A}, V_{CE}=1\text{V}$	<2.0	V
Collector Emitter Saturation Voltage	$V_{CE(sat)}^*$	$I_C=1\text{A}, I_B=0.1\text{A}$	<1.0	V
<u>DYNAMIC CHARACTERISTICS</u>				
Transition Frequency	f_T	$I_C=50\text{mA}, V_{CE}=10\text{V}$ $f=20\text{MHz}$	>50	MHz
Emitter Base Capacitance	C_{ib}	$V_{BE}=0.5\text{V}, f=1\text{MHz}$	<80	pF
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		
BSX45			<25	pF
BSX46			<20	pF
BSX47			<15	pF
Turn on time	t_{on}	$I_C=100\text{mA}, I_{B1}=-I_{B2}=$	<200	ns
Turn off time	t_{off}	5mA	<850	ns

*Pulse Test: Pulse Duration =300μs, Duty Cycle =1%

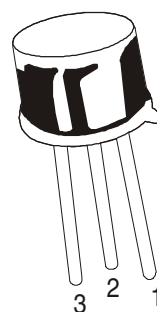
BSX45
BSX46
BSX47

TO-39 Metal Can Package



All dimensions are in mm

DIM	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 DEG	48 DEG



PIN CONFIGURATION
 1. EMITTER
 2. BASE
 3. COLLECTOR

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-39	500 pcs/polybag	540 gm/500 pcs	3" x 7.5" x 7.5"	20K	17" x 15" x 13.5"	32K	40 kgs

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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