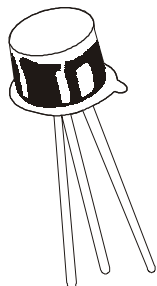


NPN SILICON PLANAR EPITAXIAL TRANSISTORS

**BSX20
TO-18**



APPLICATIONS

High Speed Saturated Switching Applications

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector -Base Voltage	VCBO	40	V
Collector -Emitter Voltage	VCES	40	V
Collector -Emitter Voltage	VCEO	15	V
Emitter -Base Voltage	VEBO	4.5	V
Collector Peak Current (t=10us)	ICM	0.5	A
Power Dissipation@ Ta=25 degC	Ptot	0.36	W
@Tc=25 deg C		1.20	W
Operating And Storage Junction Temperature Range	Tj, Tstg	-65 to +200	deg C
THERMAL RESISTANCE			
Junction to Case	Rth(j-c)	146	deg C/W
Junction to Ambient	Rth(j-a)	486	deg C/W

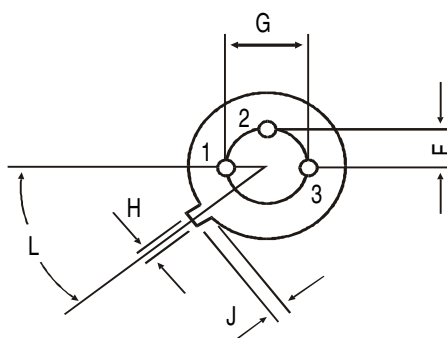
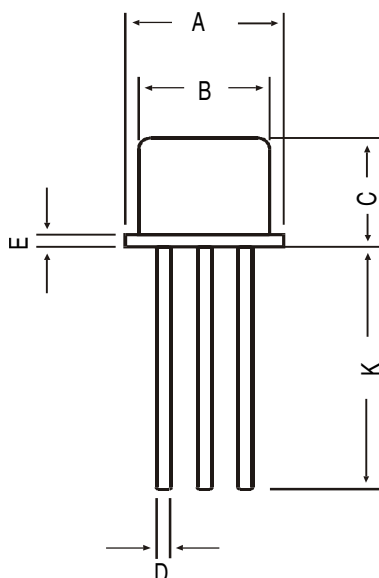
ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector-Cut off Current	ICBO	VCB=20V, IE=0	-	400	nA
		VCB=20V, IE=0, Ta=150 deg C	-	30	uA
	ICES	VCE=15V, VBE=0, Ta=55 deg C	-	400	nA
		VCE=40V, VBE=0	-	1.0	uA
Emitter-Cut off Current	ICEX	VCE=15V, VBE=-3V, Ta=55 deg C	-	600	nA
		VEB=4.5V, IC=0	-	10	uA
Base-Cut off Current	IBEX	VCE=15V, VBE=-3V, Ta=55 deg C	-	600	nA
Collector -Emitter (sus) Voltage	VCER (sus)*	IC=10mA, RBE=10 ohms	20	-	
Collector -Emitter Voltage	VCEO*	IC=10mA, IB=0	15	-	V
Collector Emitter Saturation Voltage	VCE(Sat)*	IC=10mA, IB=1mA	-	0.25	V
		IC=100mA, IB=10mA	-	0.60	V
		IC=10mA, IB=0.3mA	-	0.30	V
			-	0.30	V
Base Emitter on Voltage	VBE(on)	IC=30uA, VCE=20V, Ta=100deg C	0.35	-	V
Base Emitter Saturation Voltage	VBE(Sat) *	IC=10mA, IB=1mA	0.70	0.85	V
		IC=100mA, IB=10mA	-	1.50	V
			-	1.50	V
DC Current	hFE*	IC=10mA, VCE=1V	40	120	
		IC=100mA, VCE=2V	20	-	
		IC=10mA, VCE=1V, Ta= -55 deg C	20	-	

ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)			BSX20		
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Transition Frequency	ft	VCE=10V, IC=10mA	500	-	MHZ
Emitter Base Capacitance	Cebo	IC=0, VEB=1V	-	4.5	pF
Collector Base Capacitance	Cbo	IE=0, VCB=5V	-	4.0	pF
Storage Time	ts	IC=10mA, VCC=10V IB1=-IB2=10mA	-	13	ns
Turn-on Time	ton	IC=10mA, VCC=3V, IB1=3mA	-	12	ns
Turn-off Time	toff	IC=100mA, VCC=6V, IB1=40mA	-	7.0	ns
		IC=10mA, VCC=3V IB1=3mA, IB2= -1.5mA	-	18	ns
		IC=100mA, VCC=6V IB1=40mA, IB2= -20mA	-	21	ns

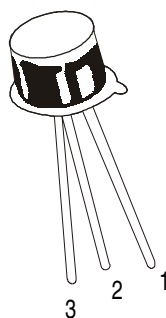
*Pulsed : Pulse duration=300us, duty cycle=1%

TO-18 Metal Can Package



DIM	MIN	MAX
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.40	0.53
E	—	0.76
F	—	1.27
G	—	2.97
H	0.91	1.17
J	0.71	1.21
K	12.70	—
L	45 DEG	

All diminsions in mm.



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-18	1K/polybag	350 gm/1K pcs	3" x 7.5" x 7.5"	5.0K	17" x 15" x 13.5"	80.0K	34 kgs

Notes

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 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).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of

Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-579 6150 Fax + 91-11-579 9569, 579 5290

e-mail sales@cdil.com www.cdil.com