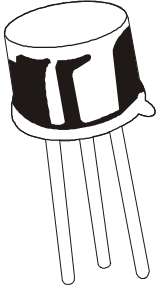


**NPN SILICON EPITAXIAL TRANSISTORS**

**BC140, -6, -10, -16**  
**BC141, -6, -10, -16**  
**TO-39**



**Medium power amplifier & switching applications**

**Complementary BC160 & BC161**

**ABSOLUTE MAXIMUM RATINGS**

DESCRIPTION	SYMBOL	BC140	BC141	UNITS
Collector -Emitter Voltage	VCE0	40	60	V
Collector -Base Voltage	VCBO	80	100	V
Emitter -Base Voltage	VEBO		7.0	V
Collector Current- Continuous	IC		1.0	A
Power Dissipation@ Ta=25 deg C	PD		0.8	W
Derate Above 25 deg C			4.6	mW/deg C
Power Dissipation@ Tc=25 deg C	PD		3.7	W
Derate Above 25 deg C			20	mW/deg C
Operating & Storage Junction Temperature Range	Tj, Tstg		-65 to +200	deg C
<b>THERMAL RESISTANCE</b>				
Junction to Ambient	Rth(j-a)		200	deg C/W
Junction to Case	Rth(j-c)		35	deg C/W

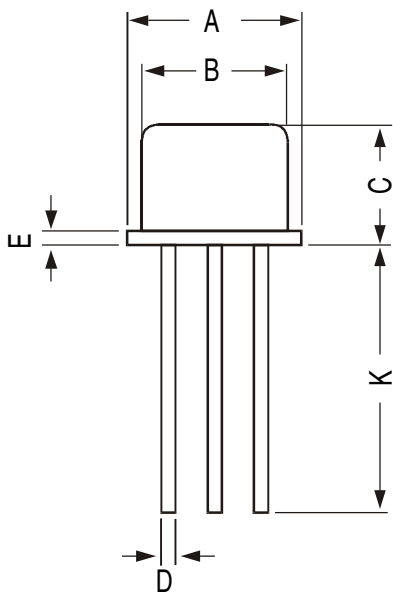
**ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)**

DESCRIPTION	SYMBOL	BC140	BC141	UNITS	
Collector -Emitter Voltage	VCES	VCE=100uA, VBE=0	>80	>100	V
	VCEO*	IC=30mA, IB=0	>40	>60	V
Emitter-Base Voltage	VEBO	IE=100uA, IC=0		>7.0	V
Collector-Cut off Current	ICES	VCE=60V, VBE=0		<100	nA
		Ta=150 deg C			
DC Current Gain	hFE*	VCE=60V, VBE=0		<100	uA
		IC=100mA, VCE=1V			
		<b>BC140,BC141</b>		40-400	
		<b>Group-6</b>		40-100	
		<b>Group-10</b>		63 to 160	
		<b>Group-16</b>		100 to 250	
Collector Emitter Saturation Voltage	VCE(Sat) *	IC=1A, IB=0.1A	<b>BC140,BC141</b>	typ 26	V
			<b>Group-6</b>	typ 15	
			<b>Group-10</b>	typ 20	
			<b>Group-16</b>	typ 30	
Base Emitter on Voltage	VBE(on) *	IC=1A, VCE=1V		<2.0	V

DESCRIPTION	SYMBOL		BC140/141	UNITS
<b><u>DYNAMIC CHARACTERISTICS</u></b>				
Current Gain Bandwidth Product	ft	IC=50mA, VCE=10V f=20MHz	>50	MHz
Out-Put Capacitance	Cob	VCB=10V, f=1MHz	<25	pF
In-Put Capacitance	Cib	VEB=0.5V, f=1MHz	<80	pF
<b><u>SWITCHING CHARACTERISTICS</u></b>				
Turn on time	ton	IC=150mA, IB1=7.5 mA	<250	ns
Turn off time	toff	IC=150mA, IB1=IB2=7.5 mA	<850	ns

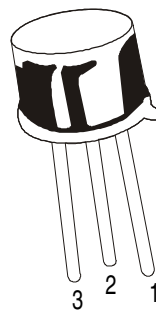
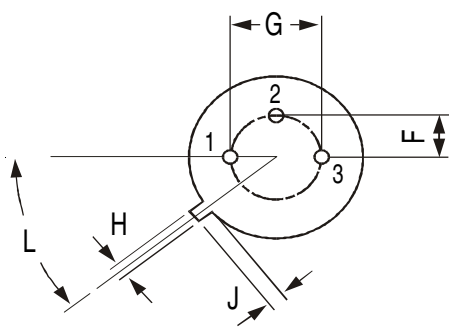
\*Pulsed: Pulse Duration=300us, Duty Cycle=1%

**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"	20.0K	17" x 15" x 13.5"	32.0K	40 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).

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