

Continental Device India Limited

An IS/ISO 9002 and IECQ Certified Manufacturer



NPN SILICON POWER SWITCHING TRANSISTORS

BC140, BC141



TO-39 Metal Can Package

Medium Power Amplifier and Switching Applications Complementary BC160 and BC161

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	BC140	BC141	UNITS		
Collector Emitter Voltage	V _{CEO}	40	60	V		
Collector Base Voltage	V _{CBO}	80	100	V		
Emitter Base Voltage	V _{EBO}		7.0			
Collector Current - Continuous	I _C		А			
Power Dissipation@ T _a =25°C	P _D		W			
Derate Above 25°C			mW/ ºC			
Power Dissipation@ T _c =25°C	P _D		W			
Derate Above 25°C			mW/ ºC			
Operating and Storage Junction Temperature Range	T _j , T _{stg}	- 65	°C			

THERMAL CHARACTERISTICS

Junction to Ambient in free air	$R_{th(j-a)}$	219	°C/W
Junction to Case	$R_{th(j-c)}$	44	°C/W

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Voltage	V _{CES}	$I_{C}=100\mu A, V_{BE}=0$				
		BC140	80			V
		BC141	100			V
Collector Emitter Voltage	*V _{CEO}	$I_C=30\text{mA}, I_B=0$				
		BC140	40			V
		BC141	60			V
Emitter Base Voltage	V_{EBO}	$I_{E}=100\mu A, I_{C}=0$	7			V
Collector Cut off Current	I _{CES}	V_{CE} =60V, V_{BE} =0			100	nA
		V _{CE} =60V, V _{BE} =0, T _a =150°C			100	μΑ
DC Current Gain	*h _{FE}	I _C =100mA, V _{CE} =1V				
		BC140 / BC141	40		400	
		Group-6	40		100	
		Group-10	63		160	
		Group-16	100		250	
		I _C =1A, V _{CE} =1V				
		BC140 / BC141		26		
		Group-6		15		
		Group-10		20		
		Group-16		30		

^{*}Pulsed: Pulse duration <300ms, Duty cycle < 1%

BC140, BC141



TO-39 Metal Can Package

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Saturation Voltage	*V _{CE (sat)}	I _C =1A, I _B =0.1A			1.0	V
Base Emitter on Voltage	*V _{BE (on)}	I _C =1A, V _{CE} =1V			2.0	V

DYNAMIC CHARACTERISTICS

Transition Frequency	f _T	I_C =50mA, V_{CE} =10V, f=20MHz	50		MHz
Output Capacitance	C _{ob}	V_{CB} =10V, I_E =0, f=1MHz		25	рF
Input Capacitance	C_{ib}	V_{EB} =0.5V, I_{C} =0, f=1MHz		80	рF

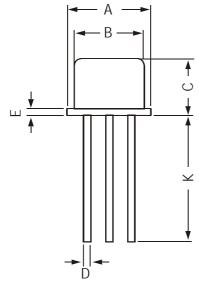
SWITCHING CHARACTERISTICS

Turn on time	t _{on}	I _C =150mA, I _{B1} =7.5mA		250	ns
Turn off time	t _{off}	I_{C} =150mA, I_{B1} = I_{B2} =7.5mA		850	ns

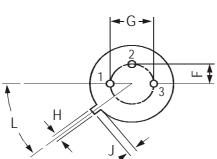
^{*}Pulsed: Pulse duration <300ms, Duty cycle < 1%

TO-39 Metal Can Package

TO-39 Metal Can Package



DIM	MIN	MAX
Α	8.50	9.39
В	7.74	8.50
С	6.09	6.60
D	0.40	0.53
Ε	_	0.88
F	2.41	2.66
G	4.82	5.33
Н	0.71	0.86
J	0.73	1.02
Κ	12.70	_
L	42 DEG	48 DEG





All dimensions are in mm

PIN CONFIGURATION

- 1. EMITTER
- 2. BASE 3. COLLECTOR

Packing Details

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size Oty Gr W		
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

Notes BC140, BC141

TO-39 Metal Can Package

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 are 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 + 91-11-2579 6150 Fax + 91-11-2579 9569, 2579 5290
e-mail sales@cdil.com www.cdil.com www.cdilsemi.com

BC140_141 Rev_1 281102E