New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

NPN medium power transistors

BC140; BC141

FEATURES

- High current (max. 1 A)
- Low voltage (max. 60 V).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

NPN medium power transistor in a TO-39 metal package.
PNP complements: BC160 and BC161.

PINNING

PIN	DESCRIPTION
1	emitter
2	base
3	collector, connected to case

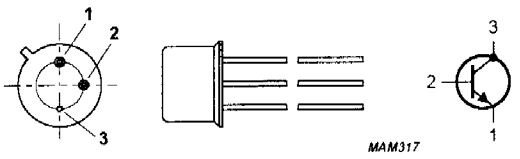

Fig.1 Simplified outline (TO-39) and symbol.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter				
	BC140		–	–	80	V
	BC141		–	–	100	V
V_{CEO}	collector-emitter voltage	open base				
	BC140		–	–	40	V
	BC141		–	–	60	V
I_{CM}	peak collector current		–	–	1.5	A
P_{tot}	total power dissipation	$T_{case} \leq 45$ °C	–	–	3.7	W
h_{FE}	DC current gain	I_C = 100 mA; V_{CE} = 1 V				
	BC140-10; BC141-10		63	100	160	
	BC140-16; BC141-16		100	160	250	
f_T	transition frequency	I_C = 50 mA; V_{CE} = 10 V; f = 100 MHz	50	–	–	MHz

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter			
	BC140		–	80	V
	BC141		–	100	V
V_{CEO}	collector-emitter voltage	open base			
	BC140		–	40	V
	BC141		–	60	V
V_{EBO}	emitter-base voltage	open collector	–	7	V
I_C	collector current (DC)		–	1	A
I_{CM}	peak collector current		–	1.5	A
I_{BM}	peak base current		–	200	mA
P_{tot}	total power dissipation	$T_{case} \leq 45$ °C	–	3.7	W
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	175	°C
T_{amb}	operating ambient temperature		–65	+150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	in free air	200	K/W
$R_{th\ j\text{-}c}$	thermal resistance from junction to case		35	K/W