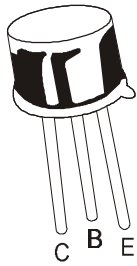


PNP SILICON POWER SWITCHING TRANSISTORS

BC160, BC161



**TO-39
Metal Can Package**

Medium Power Amplifier and Switching Applications

Complementary BC140 and BC141

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	BC160	BC161	UNITS
Collector Emitter Voltage	V_{CEO}	40	60	V
Collector Base Voltage	V_{CBO}	40	60	V
Emitter Base Voltage	V_{EBO}	5.0		V
Collector Current - Continuous	I_C	1.0		A
Power Dissipation @ $T_a=25^\circ\text{C}$ Derate Above 25°C	P_D	0.8 4.57		W mW/ $^\circ\text{C}$
Power Dissipation @ $T_c=25^\circ\text{C}$ Derate Above 25°C	P_D	4.0 22.73		W mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +200		$^\circ\text{C}$

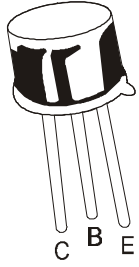
THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Voltage	V_{CES}	$I_C=100\mu\text{A}, V_{BE}=0$ BC160 BC161	40 60			V V
Collector Emitter Voltage	$*V_{CEO}$	$I_C=10\text{mA}, I_B=0$ BC160 BC161	40 60			V V
Emitter Base Voltage	V_{EBO}	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector Cut off Current	I_{CES}	$V_{CE}=40\text{V}, V_{BE}=0,$ BC160 $V_{CE}=60\text{V}, V_{BE}=0,$ BC161 $T_a=150^\circ\text{C}$ $V_{CE}=40\text{V}, V_{BE}=0,$ BC160 $V_{CE}=60\text{V}, V_{BE}=0,$ BC161			100 100 100 100	nA nA μA μA
DC Current Gain	$*h_{FE}$	$I_C=100\text{mA}, V_{CE}=1\text{V}$ BC160 / BC161 Group-6 Group-10 Group-16	40 40 63 100		400 100 160 250	

*Pulsed: Pulse duration $\leq 300\text{ms}$, duty cycle $\leq 1\%$

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
DC Current Gain	$*h_{FE}$	$I_C=1\text{A}, V_{CE}=1\text{V}$ BC160 / BC161 Group-6 Group-10 Group-16		26 15 20 30		
Collector Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C=1\text{A}, I_B=0.1\text{A}$			1.0	V
Base Emitter on Voltage	$*V_{BE(on)}$	$I_C=1\text{A}, V_{CE}=1\text{V}$			1.7	V

DYNAMIC CHARACTERISTICS

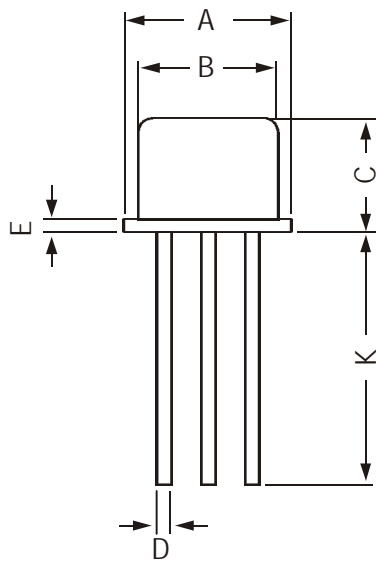
Transition Frequency	f_T	$I_C=50\text{mA}, V_{CE}=10\text{V}, f=20\text{MHz}$	50			MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$			30	pF
Input Capacitance	C_{ib}	$V_{EB}=10\text{V}, I_C=0, f=1\text{MHz}$			180	pF

SWITCHING CHARACTERISTICS

Turn on time	t_{on}	$I_C=150\text{mA}, I_{B1}=5\mu\text{A}$			500	ns
Turn off time	t_{off}	$I_C=100\text{mA}, I_{B1}=I_{B2}=5\mu\text{A}$			650	ns

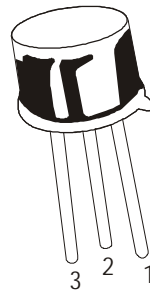
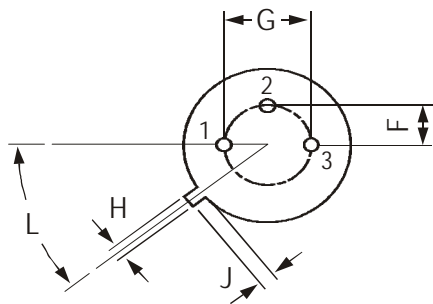
*Pulsed: Pulse duration $\leq 300\text{ms}$, duty cycle $\leq 1\%$

TO-39 Metal Can Package



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

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	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

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