

PNP BC160 – BC161

GENERAL PURPOSE TRANSISTORS

They are silicon planar epitaxial PNP transistors mounted in TO-39 metal package. They are particularly designed for audio amplifiers and switching applications up to 1A. NPN complements are the BC140 – BC141. Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
$-V_{CBO}$	Collector-Base Voltage $I_E = 0$	BC160	40	V
		BC161	60	
$-V_{CEO}$	Collector-Emitter Voltage $I_B = 0$	BC160	40	V
		BC161	60	
$-V_{EBO}$	Emitter-Base Voltage $I_C = 0$	BC160	5	V
		BC161		
$-I_C$	Collector Current	BC160	1	A
		BC161		
$-I_B$	Base Current	BC160	0.1	A
		BC161		
P_{tot}	Total Power Dissipation	@ $T_{case} = < 45^\circ$	3.7	W
		@ $T_{amb} = < 45^\circ$	0.65	
T_J	Junction Temperature		175	$^\circ C$
T_{Stg}	Storage Temperature range		-55 to +175	$^\circ C$

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-c}	Thermal Resistance, Junction-case	35	K/ W
$R_{thJ-amb}$	Thermal Resistance, Junction-ambient	200	K/ W

PNP BC160 – BC161

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit		
$-I_{CES}$	Collector – Cutoff Current	$I_E = 0 ; V_{CES} = 40 \text{ V}$	BC160	-	-	100	nA	
		$I_E = 0 ; V_{CES} = 60 \text{ V}$	BC161	-	-	-	-	
		$I_E = 0 ; V_{amb} = 150^\circ\text{C}$	$V_{CES} = 40 \text{ V}$	BC160	-	-	100	μA
			$V_{CES} = 60 \text{ V}$	BC161	-	-	-	-
$-V_{CB0}$	Collector – Base Breakdown Voltage	$-I_C = 100 \mu\text{A}$	BC160	40	-	-	V	
		$I_E = 0$	BC161	60	-	-		
$-V_{CE0} (*)$	Collector – Emitter Breakdown Voltage	$-I_C = 10 \text{ mA}$	BC160	40	-	-	V	
		$I_B = 0$	BC161	60	-	-		
$-V_{EB0}$	Emitter – Base Breakdown Voltage	$-I_E = 100 \mu\text{A}$	BC160	5	-	-	V	
		$I_C = 0$	BC161					
$-V_{CE(SAT)} (*)$	Collector-Emitter saturation Voltage	$-I_C = 100 \text{ mA} , -I_B = 10 \text{ mA}$	-	0.1	-	V		
		$-I_C = 500 \text{ mA} , -I_B = 50 \text{ mA}$	-	0.35	-			
		$-I_C = 1 \text{ A} , -I_B = 100 \text{ mA}$	-	0.6	1			
$-V_{BE} (*)$	Base-Emitter Voltage	$-I_C = 1 \text{ A} , -V_{CE} = 1 \text{ V}$	-	1	1.7	-		
$h_{FE} (*)$	DC Current Gain	$-I_C = 100 \mu\text{A} , -V_{CE} = 1 \text{ V}$	Gr 10	-	80	-	-	
			Gr 16	-	120	-		
		$-I_C = 100 \text{ mA} , -V_{CE} = 1 \text{ V}$	Gr 10	63	100	160		
			Gr 16	100	160	250		
		$-I_C = 1 \text{ A} , -V_{CE} = 1 \text{ V}$	Gr 10	-	20	-		
			Gr 16	-	30	-		
f_T	Transition Frequency	$-I_C = 50 \text{ mA} , -V_{CE} = 10 \text{ V}$	50	-	-	MHz		
C_{CB0}	Collector – base Capacitance	$I_E = 0 ; -V_{CB} = 20 \text{ V}$ $f = 1 \text{ MHz}$	-	15	30	pF		
t_{off}	Turn-off times	$-I_C = 100 \text{ mA}$ $-I_{B1} = -I_{B2} = 5 \text{ mA}$	-	-	650	ns		
t_{on}	Turn-on times	$-I_C = 100 \text{ mA}$ $-I_{B1} = 1 \text{ mA}$	-	-	500	ns		

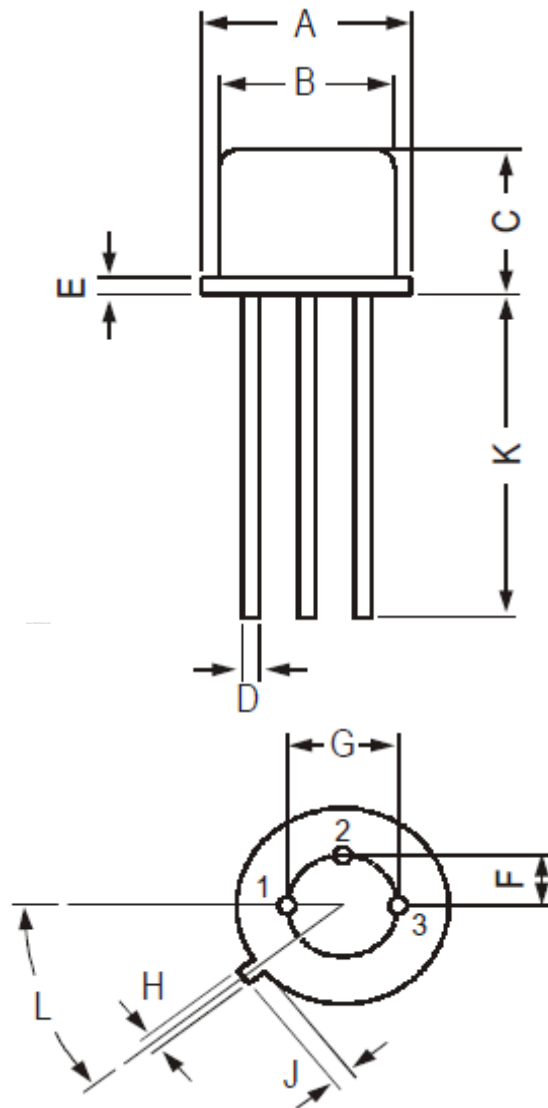
(*) Pulsed : pulse duration = 300 μs , duty cycle = 1%

PNP BC160 – BC161

MECHANICAL DATA CASE TO-39

DIMENSIONS (mm)		
	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°	48°

Pin 1 :	Emitter
Pin 2 :	Base
Pin 3 :	Collector
Case :	Collector



Revised September 2012

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.