

FEATURES

NPN Complements to BCX54,BCX55,BCX56

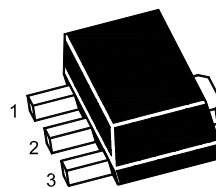
Low Voltage

High Current

APPLICATIONS

Medium Power General Purposes

Driver Stages of Audio Amplifiers



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{CBO}	Collector-Base Voltage	BCX51	-45	V
		BCX52	-60	
		BCX53	-100	
V_{CEO}	Collector-Emitter Voltage	BCX51	-45	V
		BCX52	-60	
		BCX53	-80	
V_{EBO}	Emitter-Base Voltage		-5	V
I_C	Collector Current		-1	A
P_C	Collector Power Dissipation		500	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient		250	$^{\circ}\text{C}/\text{W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range		-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

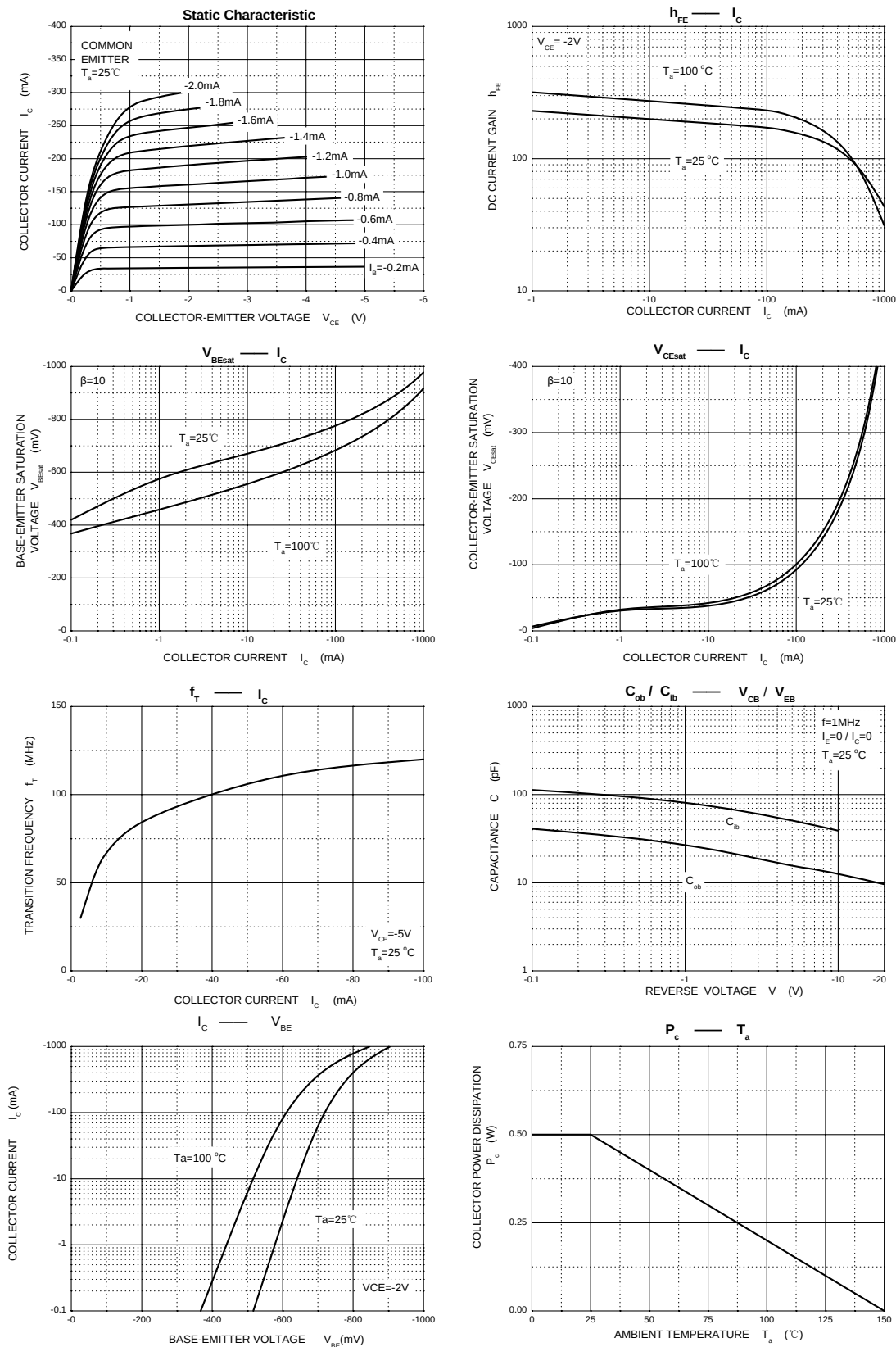
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100\mu A, I_E = 0$	BCX51	-45		V
			BCX52	-60		
			BCX53	-100		
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C = -10mA, I_B = 0$	BCX51	-45		V
			BCX52	-60		
			BCX53	-80		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100\mu A, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -30V, I_E = 0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5V, I_C = 0$			-0.1	μA
DC current gain	$h_{FE(1)}^*$	$V_{CE} = -2V, I_C = -5mA$	63			
	$h_{FE(2)}^*$	$V_{CE} = -2V, I_C = -150mA$	63		250	
	$h_{FE(3)}^*$	$V_{CE} = -2V, I_C = -0.5A$	40			
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C = -0.5A, I_B = -50mA$			-0.5	V
Base-emitter voltage	V_{BE}^*	$V_{CE} = -2V, I_C = -0.5A$			-1	V
Transition frequency	f_T	$V_{CE} = -5V, I_C = -10mA, f = 100MHz$		50		MHz

* Pulse Test

CLASSIFICATION OF $h_{FE(2)}$

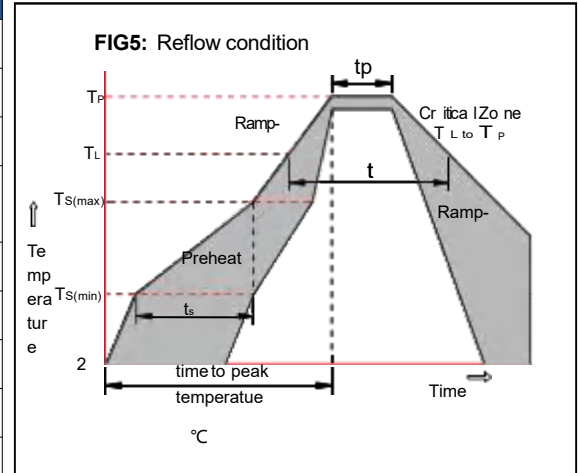
RANK	BCX51 BCX52 BCX53	BCX51-10 BCX52-10 BCX53-10	BCX51-16 BCX52-16 BCX53-16
RANGE	63-250	63-160	100-250

RATING AND CHARACTERISTIC CURVES



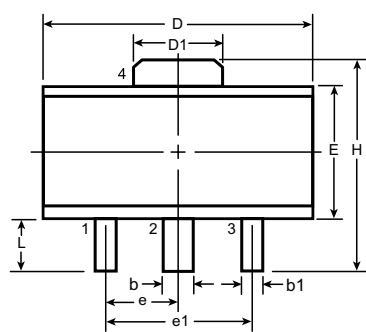
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 °C
	-Temperature Max ($T_{s(max)}$)	+200 °C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3 °C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 °C/sec. Max
Reflow	-Temperature (T_L) (Liquid us)	+217 °C
	-Temperature (t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5) °C
Time within 5 °C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6 °C/sec. Max
Time 25 °C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260 °C

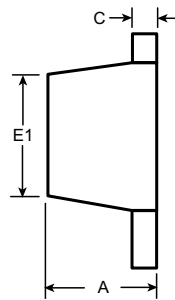


Package Dimensions & Suggested Pad Layout

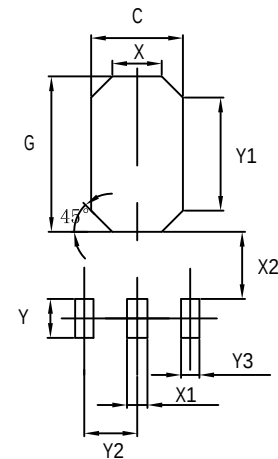
SOT89



Top View



Side View

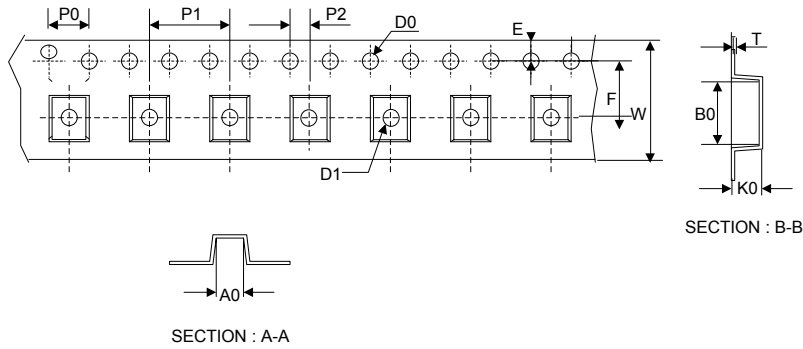


Symbol	A	b	b1	C	D	D1	E	E1	e	e1	H	L
MIN	1.40	0.44	0.36	0.3	4.40	1.50	2.29	2.00*	1.50	3.00	3.94	0.89
NOM	-	-	-	-	-	-	-	-	BSC	BSC	-	-
MAX	1.60	0.56	0.48	0.5	4.60	1.75	2.60	2.29	-	-	4.25	1.20

Dimensions	Value (in mm)
C	2.50
G	3.60
X	1.40
X1	0.90
X2	0.90
Y	1.40
Y1	2.60
Y2	1.50
Y3	0.90

Tape & reel specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	8.00±0.20
P2	2.00±0.20
D0	1.60±0.20
D1	1.60±0.20
E	1.75±0.20
F	7.50±0.15
W	16.00±0.20
A0	6.30±0.20
B0	8.25±0.20
K0	2.60±0.20
T	0.23±0.10
D2	180.0±5.0
D3	60Min.
D4	R32.0±2.0
G	R86.5±2.0
H	R30.0±2.0
I	13.0±2.0
W1	13.20±2.0
W2	16.50±2.0
Quantity: 1000PCS	

13" Reel

