BCX54, BCX55, BCX56

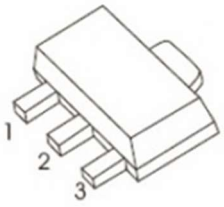
NPN Plastic-Encapsulate Transistor

Features

- Epoxy meets UL-94 V-0 flammability rating
- Power Dissipation of 500mW
- High Stability and High Reliability
- Complementary to BCX51, BCX52, BCX53

Appearance & Symbol

SOT-89



1. BASE
2. COLLECTOR
3. EMITTER

Mechanical Data

- Package: SOT-89
- Mounting Position: Any
- Terminals: Plated solderable per MIL-STD-750, method 2026
- Tape Reel: 3000pcs

Application

- Amplifying signal
- Electronic switch
- Oscillating circuit
- Variable resistance

Marking information

Marking: BCX54:BA, BCX54-10:BC, BCX54-16:BD

BCX55:BE, BCX55-10:BG, BCX55-16:BM

BCX56:BH, BCX56-10:BK, BCX56-16:BL

Absolute Maximum Ratings (T_A = 25°C unless otherwise specified)

Parameter	Symbol	BCX54	BCX55	BCX56	Unit
Collector-Base Voltage	V_{CBO}	45	60	100	V
Collector-Emitter Voltage	V_{CEO}	45	60	80	V
Emitter-Base Voltage	V_{EBO}	5			V
Collector Current - Continuous	I_C	1			A
Power Dissipation	P_D	500			mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250			℃/W
Junction Temperature	T_J	-55 to +150			℃
Junction and Storage Temperature	T_{STG}	-55 to +150			℃

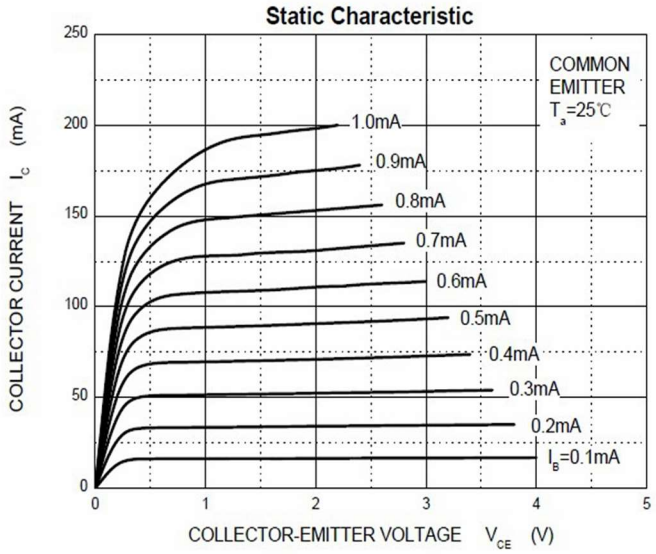
Electrical Characteristics (T_A = 25°C unless otherwise specified)

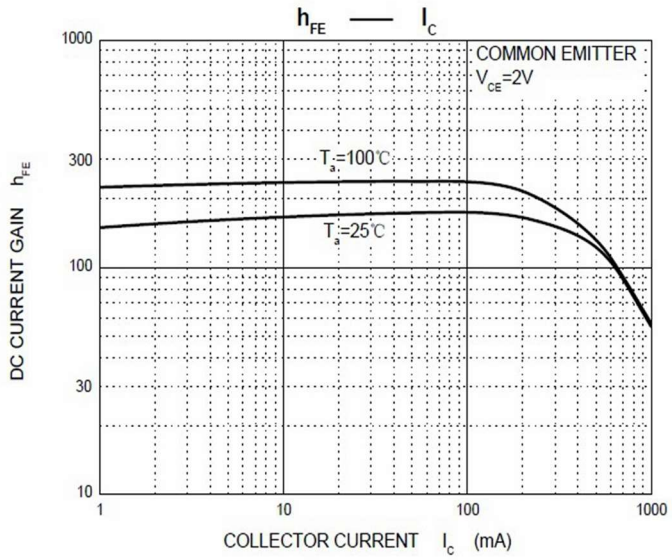
Parameter		Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	BCX54	$V_{(BR)CBO}$	I_C=100uA, I_E=0	45		V
	BCX55			60		
	BCX56			100		
Collector-emitter breakdown voltage	BCX54	$V_{(BR)CEO}$	I_C=10mA, I_B=0	45		V
	BCX55			60		
	BCX56			80		
Emitter-base breakdown voltage		$V_{(BR)EBO}$	I_E=10uA, I_C=0	5		V
Collector cut-off current		I_{CBO}	V_{CB}=30V, I_E=0		100	nA
Emitter cut-off current		I_{EBO}	V_{EB}=5V, I_C=0		100	nA
DC current gain		h_{FE}	V_{CE}=2V, I_C=5mA	40		
			V_{CE}=2V, I_C=150mA	63	250	
			V_{CE}=2V, I_C=500mA	25		
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=500mA, I_B=50mA		0.5	V
Base -emitter saturation voltage		$V_{BE(sat)}$	I_C=500mA, V_{CE}=2V		1.0	V
Transition frequency		f_T	V_{CE}=5V, I_C=10mA, f=100MHz	130		MHz

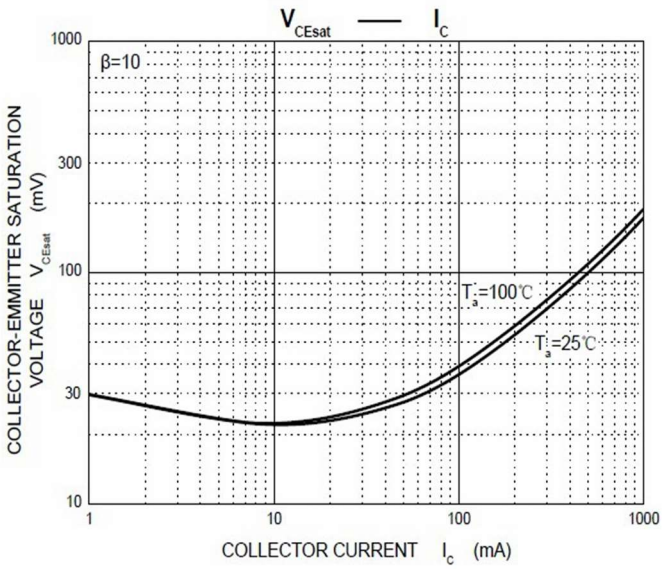
Classification of $h_{FE(2)}$

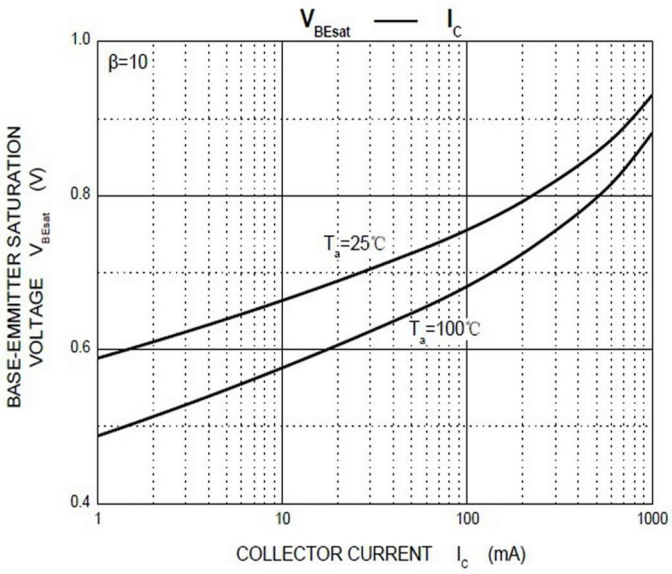
Rank	BCX54 BCX55 BCX56	BCX54-10 BCX55-10 BCX56-10	BCX54-16 BCX55-16 BCX56-16
Range	63 - 250	63 - 160	100 - 250

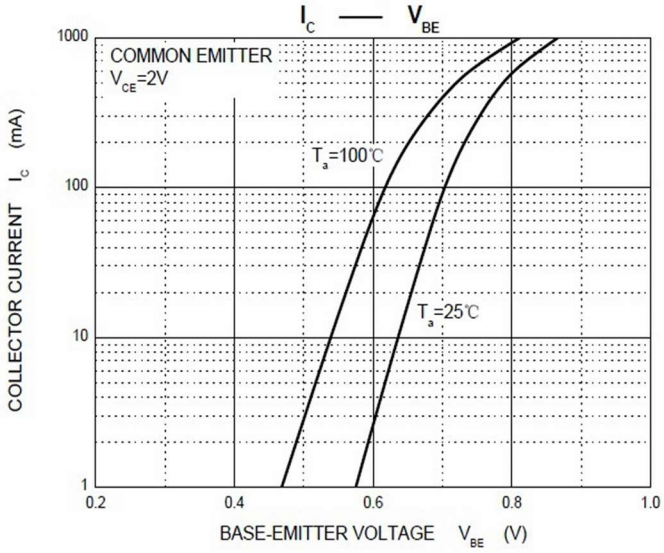
Typical Characteristics

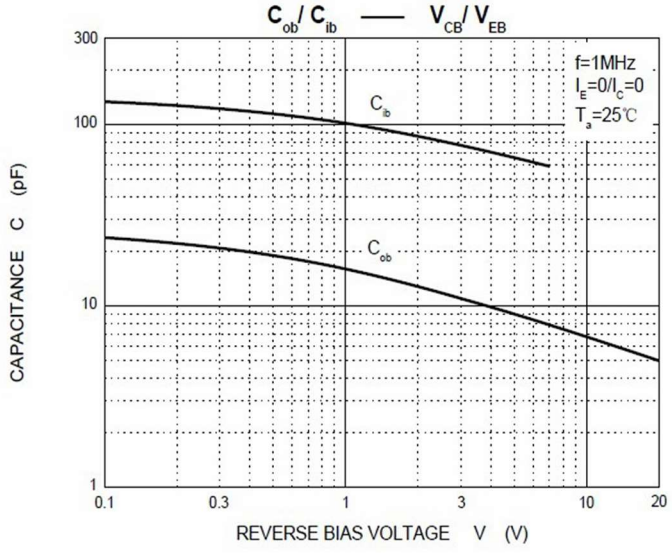












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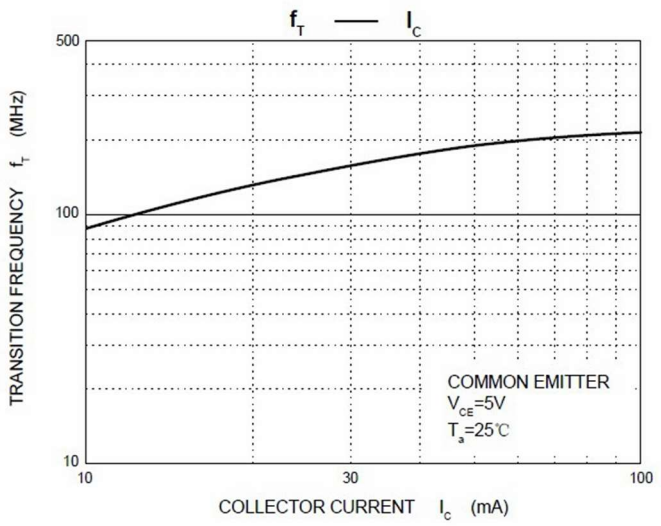
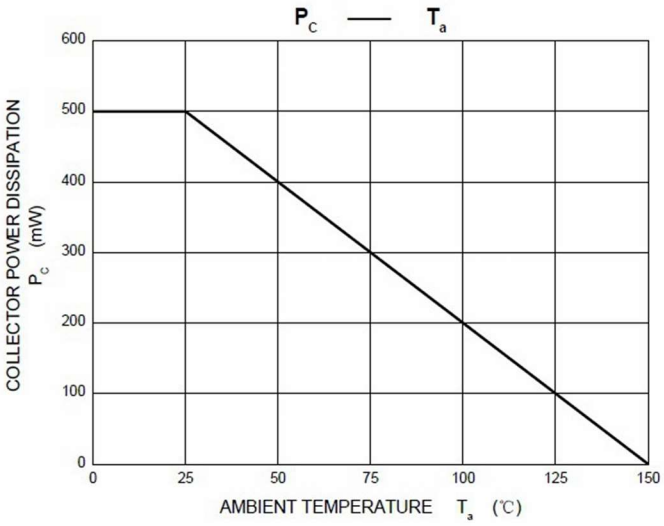
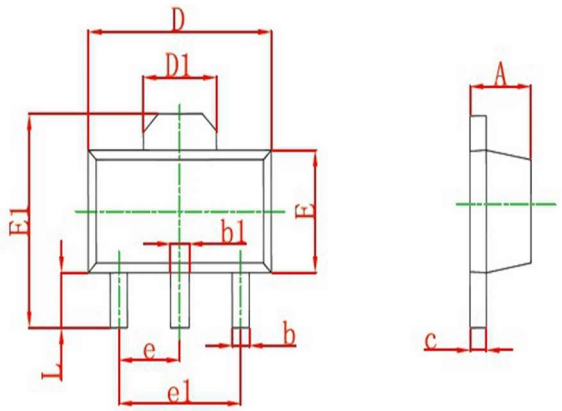


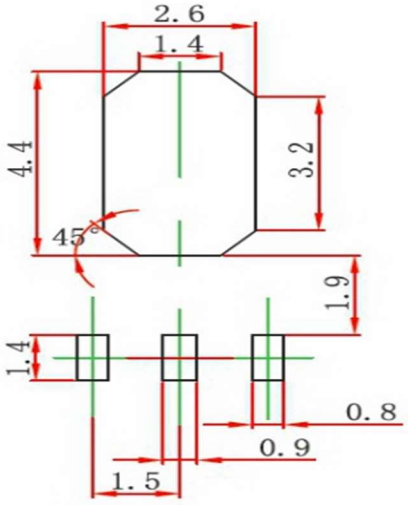


Package Outline Dimensions (Units: mm) SOT-89



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

Suggested Pad layout



Dimensions in millimetrers