

TRANSISTOR (PNP)

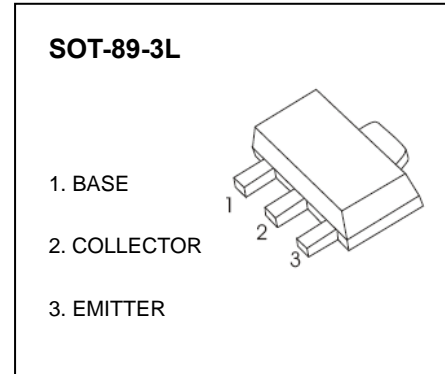
SOT-89-3L Plastic-Encapsulate Transistors

FEATURES

- NPN Complements to BCX54,BCX55,BCX56
- Low Voltage
- High Current
- AEC-Q101 qualified (Automotive grade with suffix "Q:")
- Exsemi technology

APPLICATIONS

- Medium Power General Purposes
- Driver Stages of Audio Amplifiers



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

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

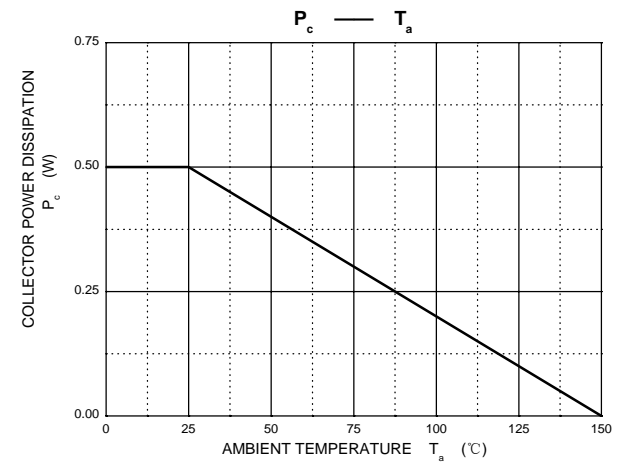
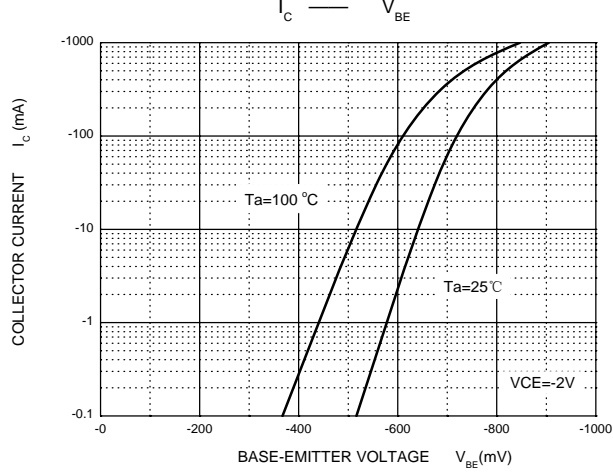
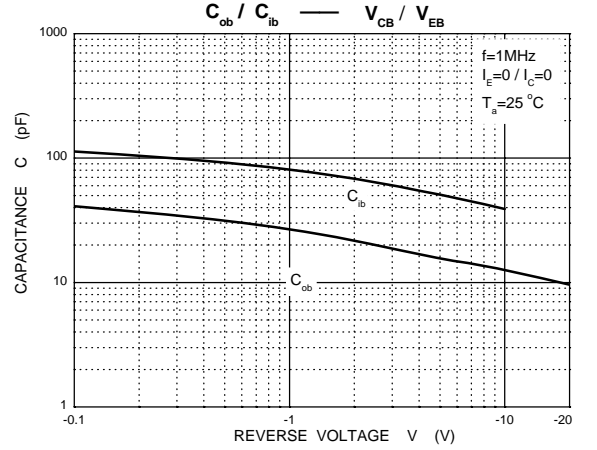
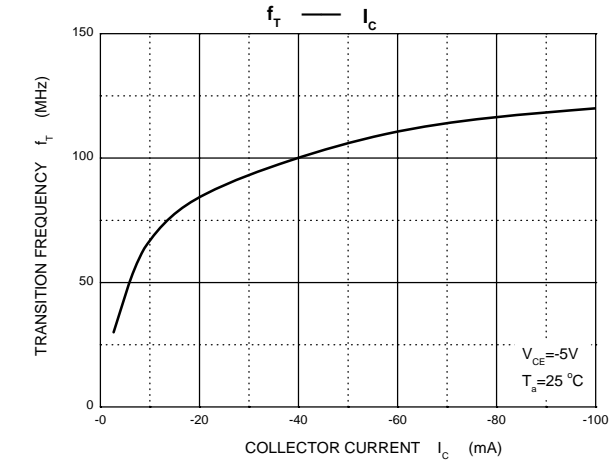
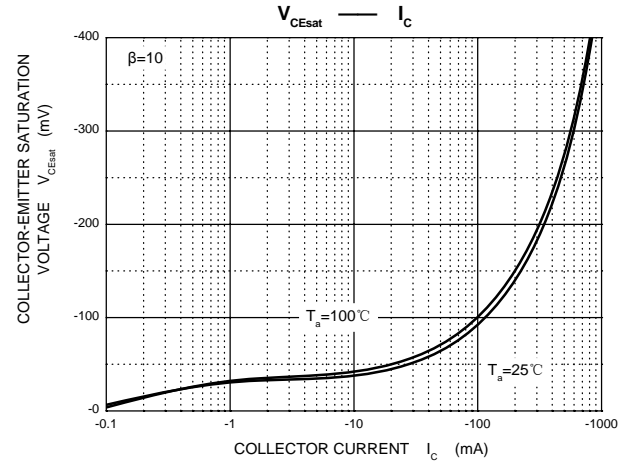
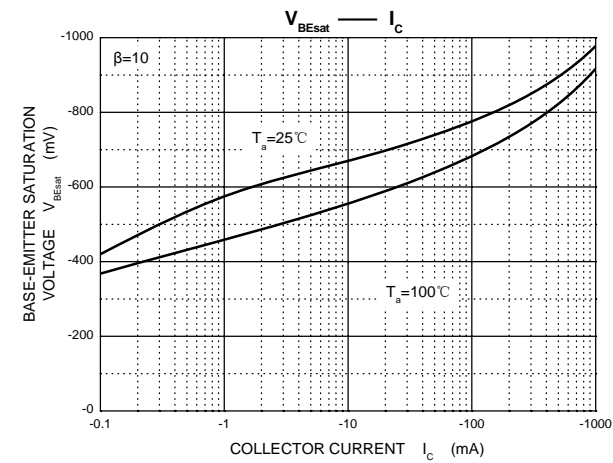
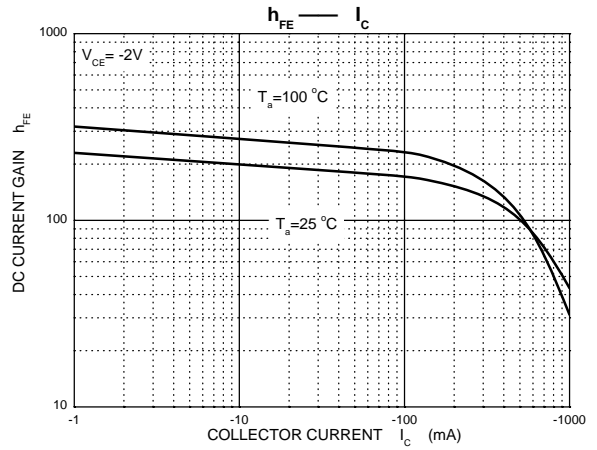
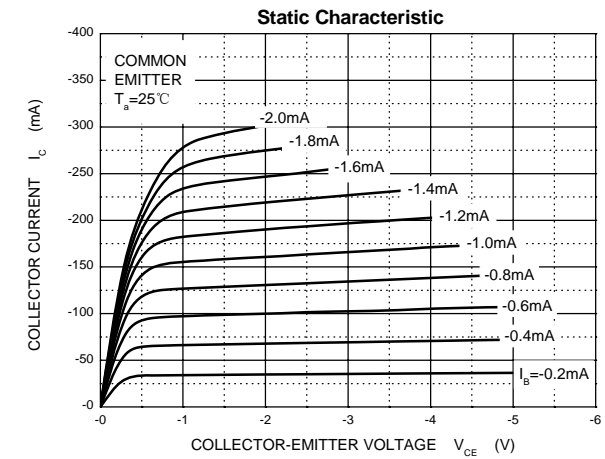
* Pulse Test

CLASSIFICATION OF $h_{FE(2)}$

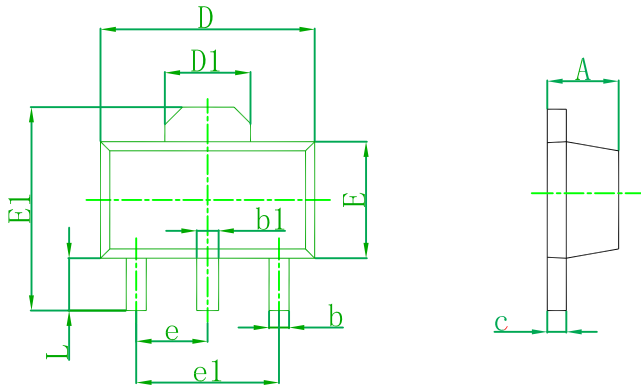
RANK	BCX51	BCX51-10	BCX51-16
	BCX52	BCX52-10	BCX52-16
	BCX53	BCX53-10	BCX53-16
RANGE	63–250	63–160	100–250

MARKING:BCX51:AA, BCX51-10:AC, BCX51-16:AD
 BCX52:AE, BCX52-10:AG, BCX52-16:AM
 BCX53:A H, BCX53-10:AK, BCX53-16:AL

Typical Characteristics

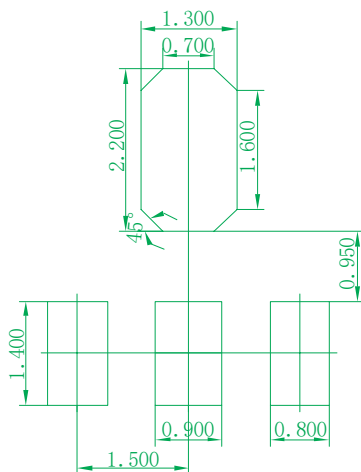


SOT-89-3L Package Outline Dimensions



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

SOT-89-3L Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

Ordering information

Device	Package	Reel
BCX51 52 53	SOT-89-3L	1000/Tape