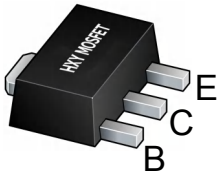
BCX54,BCX55,BCX56

NPN Plastic-Encapsulate Transistors

FEATURES

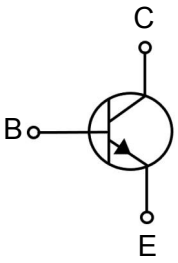
- PNP Complements to BCX51,BCX52,BCX53
- Low Voltage



SOT89-3L

Package Marking and Ordering Information

Product ID	Pack	Qty(PCS)
BCX54	SOT89-3L	1000
BCX55	SOT89-3L	1000
BCX56	SOT89-3L	1000



	63-250	63-160	100-250
Product ID	**Marking**		
BCX54	BA	BC	BD
BCX55	BE	BG	BM
BCX56	BH	BK	BL

MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

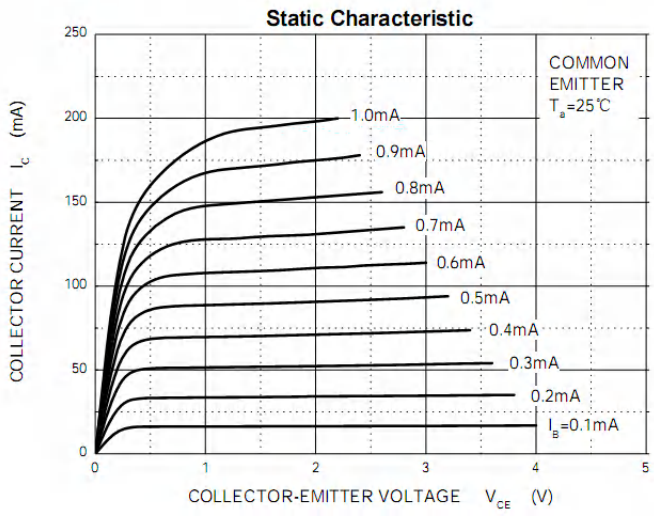
Parameter		Symbol	Limit	Unit
Collector-Base Voltage	BCX54 BCX55 BCX56	V_{CBO}	45 60 100	V
Collector-Emitter Voltage	BCX54 BCX55 BCX56	V_{CEO}	45 60 80	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	1	A
Collector Power Dissipation		P_C	500	mW
Thermal Resistance From Junction To Ambient		$R_{\Theta JA}$	250	℃/W
Junction Temperature		T_j	150	℃
Storage Temperature		T_{stg}	-55～+150	℃

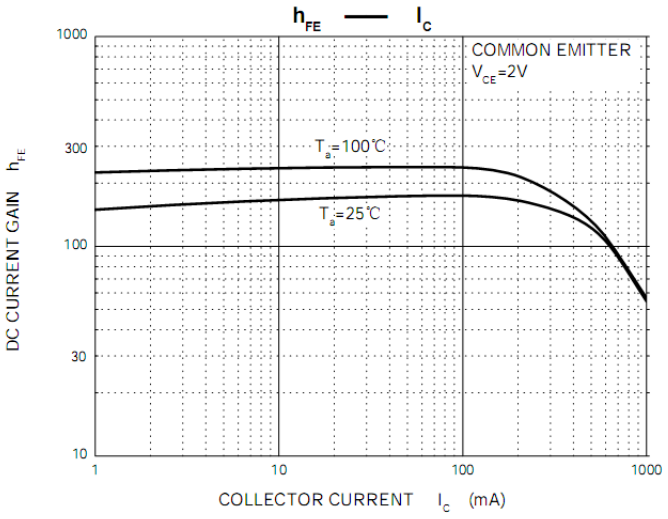
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

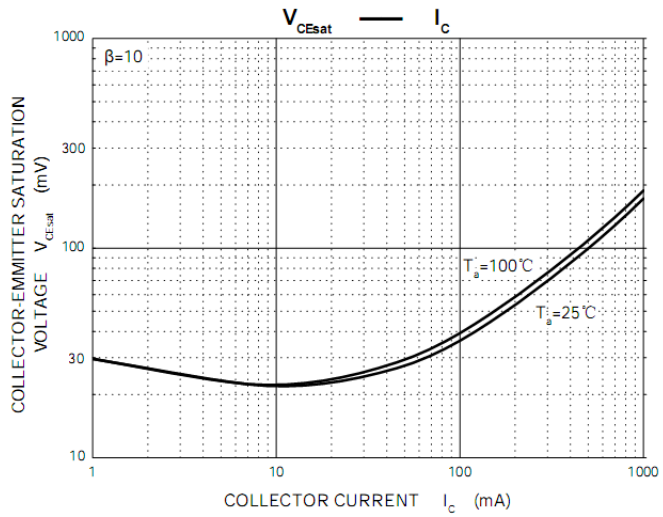
Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA,I_E=0	BCX54	45			V
			BCX55	60			
			BCX56	100			
Collector-emitter breakdown voltage	$V_{(BR)CEO}$*	I_C=10mA,I_B=0	BCX54	45			V
			BCX55	60			
			BCX56	80			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA,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		40			
	$h_{FE(2)}$*	V_{CE}=2V, I_C=150mA		63		250	
	$h_{FE(3)}$*	V_{CE}=2V, I_C=0.5A		25			
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			130		MHz

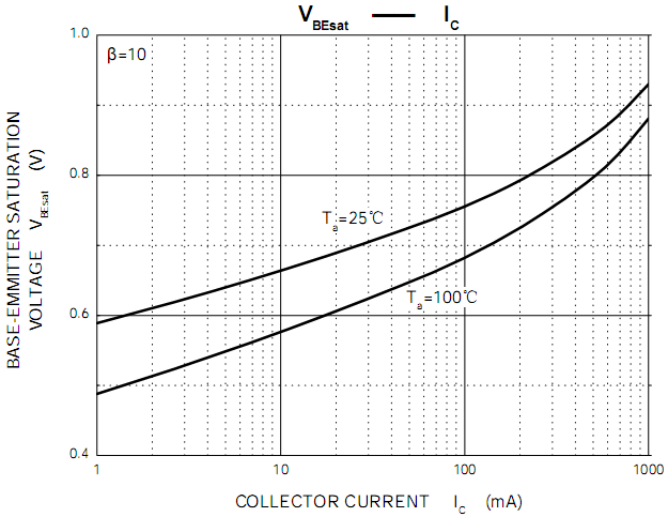
* Pulse Test

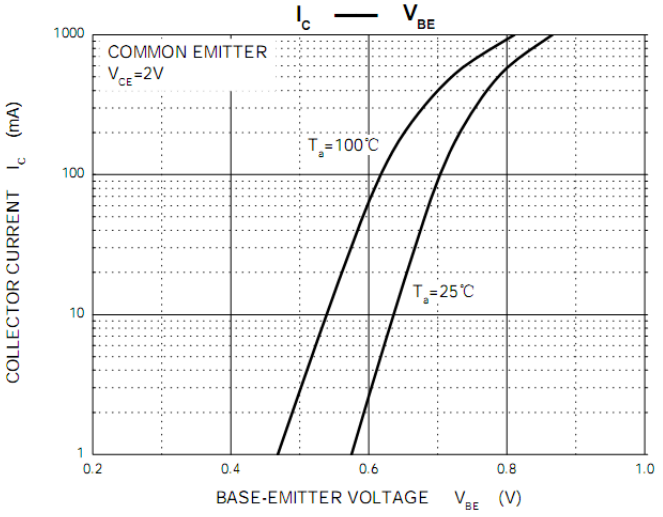
Typical Characteristics

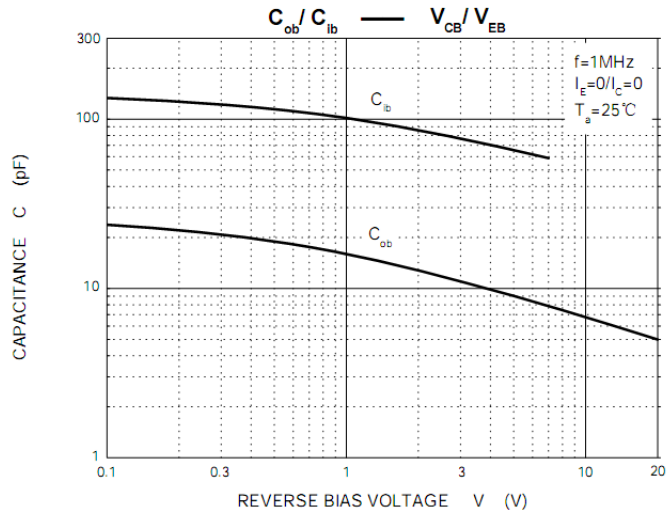


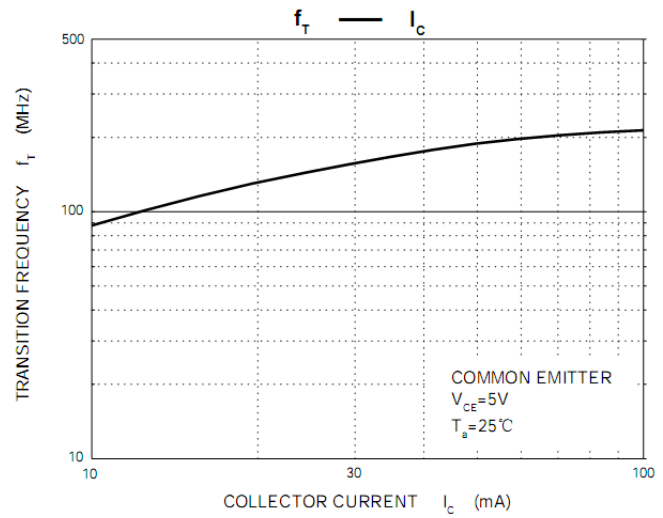


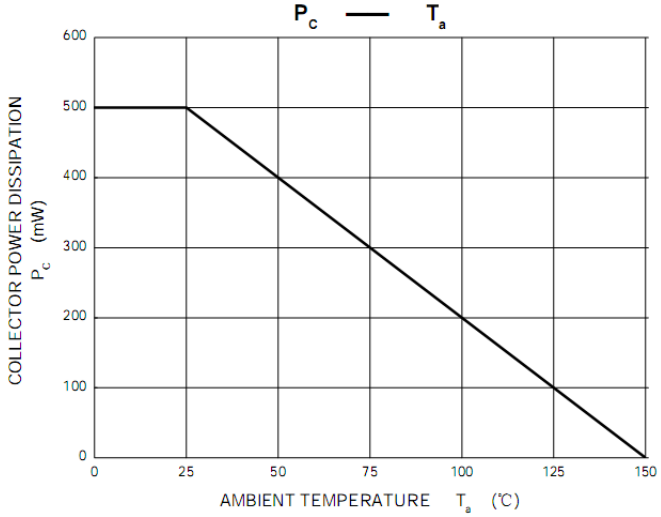

V_{CEsat} — I_C
β=10
COLLECTOR-EMMITTER SATURATION VOLTAGE V_{CEsat} (mV)
1000
300
100
30
10
T_a=100℃
T_a=25℃
1
10
100
1000
COLLECTOR CURRENT I_C (mA)


V_{BEsat} — I_C
β=10
BASE-EMMITTER SATURATION VOLTAGE V_{BEsat} (V)
1.0
0.8
0.6
0.4
T_a=25℃
T_a=100℃
1
10
100
1000
COLLECTOR CURRENT I_C (mA)

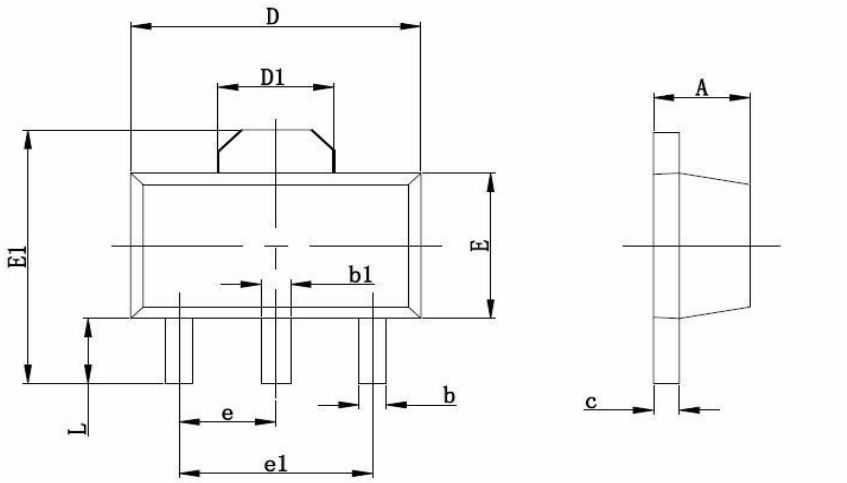

I_C — V_{BE}
COMMON EMITTER
V_{CE}=2V
COLLECTOR CURRENT I_C (mA)
1000
100
10
1
T_a=100℃
T_a=25℃
0.2
0.4
0.6
0.8
1.0
BASE-EMITTER VOLTAGE V_{BE} (V)


C_{ob} / C_{ib} — V_{CB} / V_{EB}
f=1MHz
I_E=0/I_C=0
T_a=25℃
CAPACITANCE C (pF)
300
100
10
1
C_{ib}
C_{ob}
0.1
0.3
1
3
10
20
REVERSE BIAS VOLTAGE V (V)


f_T — I_C
TRANSITION FREQUENCY f_T (MHz)
500
100
10
COMMON EMITTER
V_{CE}=5V
T_a=25℃
10
30
100
COLLECTOR CURRENT I_C (mA)


P_C — T_a
COLLECTOR POWER DISSIPATION P_C (mW)
600
500
400
300
200
100
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE T_a (℃)

SOT89-3L 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

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