

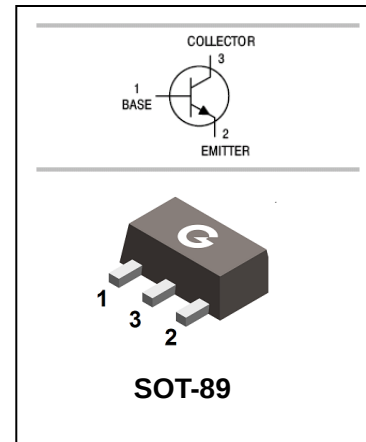
NPN Silicon AF Transistors

BCX54/BCX55/BCX56

FEATURES

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage
- Complementary types: BCX51...BCX53(PNP)

HF



ORDERING INFORMATION

Type No.	Marking	Package Code
BCX54	BA	SOT-89
BCX54-10	BC	SOT-89
BCX54-16	BD	SOT-89
BCX55	BE	SOT-89
BCX55-10	BG	SOT-89
BCX55-16	BM	SOT-89
BCX56	BH	SOT-89
BCX56-10	BK	SOT-89
BCX56-16	BL	SOT-89

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	BCX54 45	V
		BCX55 60	
		BCX56 100	
V_{CEO}	Collector-Emitter Voltage	BCX54 45	V
		BCX55 60	
		BCX56 80	
V_{EBO}	Emitter-Base Voltage	5	V
I_C	DC Collector Current	1	A
I_{CM}	Peak Collector Current	1.5	A
I_B	Base current	100	mA
I_{BM}	Peak base current	200	mA
P_{tot}	Total power dissipation $T_S=130^{\circ}\text{C}$	500	mW
T_J, T_{stg}	Junction and Storage Temperature	-65 to +150	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal resistance junction to ambient air	75	$^{\circ}\text{C/W}$
$R_{\theta JC}$	Junction-case thermal resistance	35	$^{\circ}\text{C/W}$

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

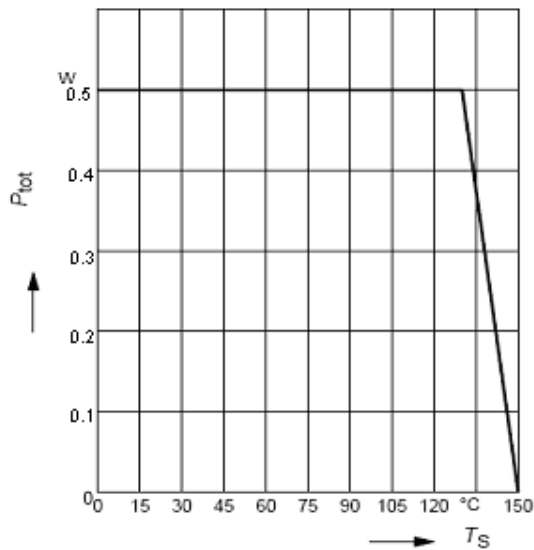
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A$ $I_B=0$ BCX54 BCX55 BCX56	45 60 100		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10mA$ $I_B=0$ BCX54 BCX55 BCX56	45 60 80		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A$ $I_C=0$	5		V
Collector cut-off current	I_{CBO}	$V_{CB}=30V$ $I_E=0$		100	nA
		$V_{CB}=30V$ $I_E=0$, $T_A=150^\circ C$		20	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5V$, $I_C = 0$		100	nA
DC current gain	h_{FE}	$V_{CE}=2V$ $I_C=5mA$	25		
		$V_{CE}=2V$ $I_C=150mA$ BCX54...56	40	250	
		$V_{CE}=2V$ $I_C=150mA$ -10 -16	63 100	160 250	
		$V_{CE}=2V$ $I_C=500mA$	25		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500mA$ $I_B=50mA$		0.5	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=500mA$ $I_B=50mA$		1.2	V
Base-emitter voltage	V_{BE}	$I_C=500mA$, $V_{CE}=2V$		1	V
Transition frequency	f_T	$V_{CE}=10V$, $I_C=50mA$, $f=20MHz$	100		MHz

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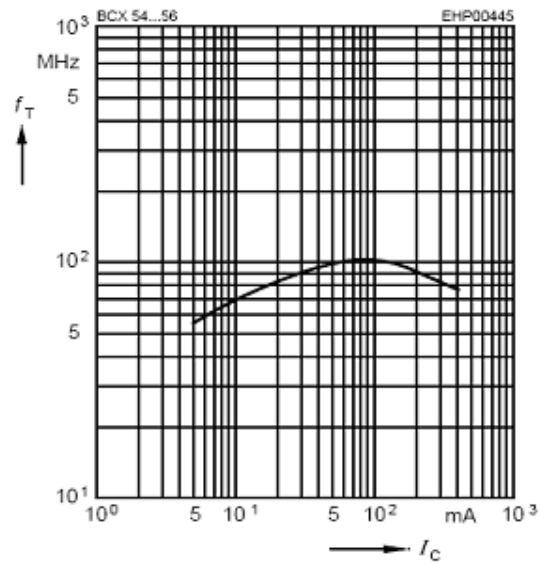
TYPICAL CHARACTERISTICS @ $T_a = 25^\circ\text{C}$ unless otherwise specified

Total power dissipation $P_{\text{tot}} = f(T_S)$



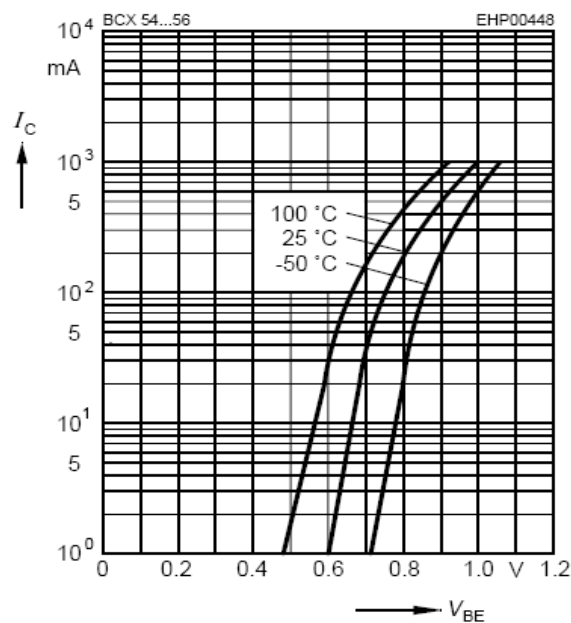
Transition frequency $f_T = f(I_C)$

$V_{CE} = 10\text{V}$



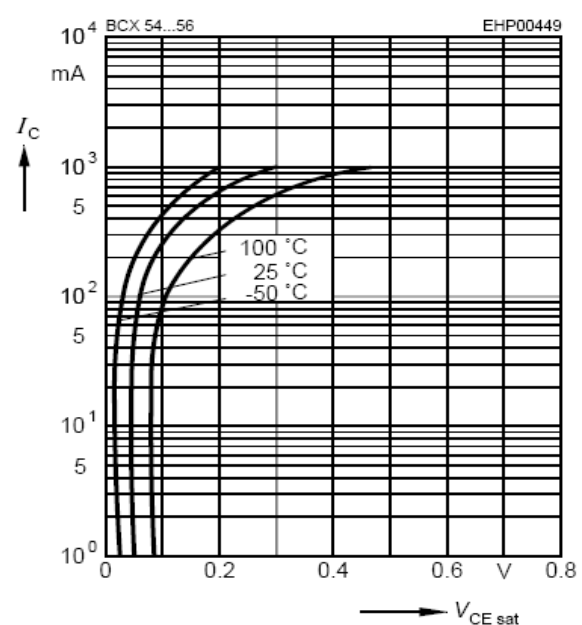
Collector current $I_C = f(V_{BE})$

$V_{CE} = 2\text{V}$



Collector-emitter saturation voltage

$I_C = f(V_{CE\text{sat}}), h_{FE} = 10$

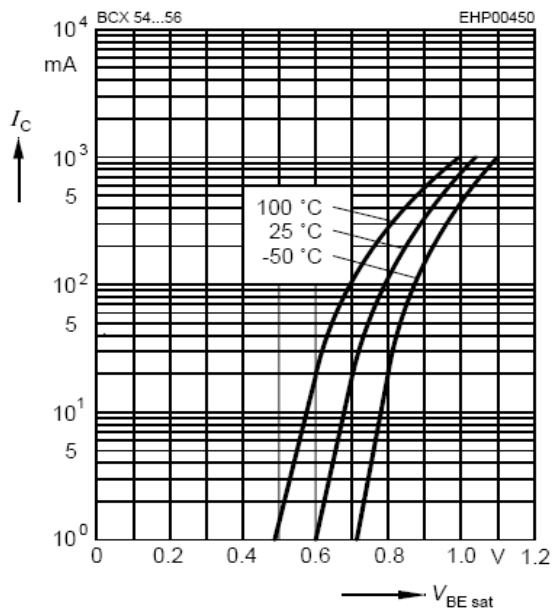


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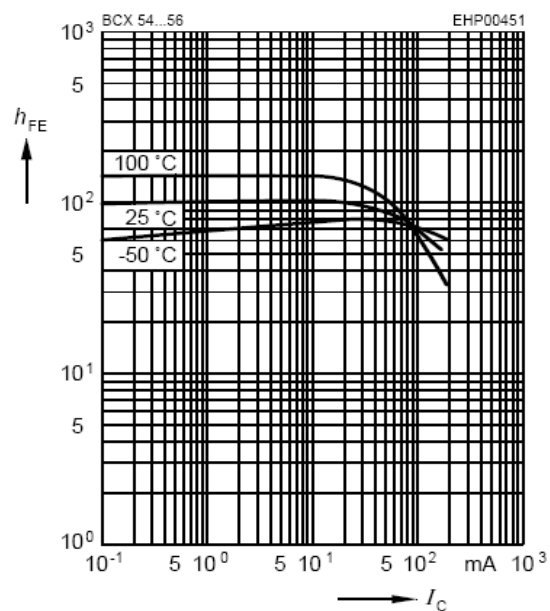
Base-emitter saturation voltage

$$I_C = f(V_{BEsat}), h_{FE} = 10$$



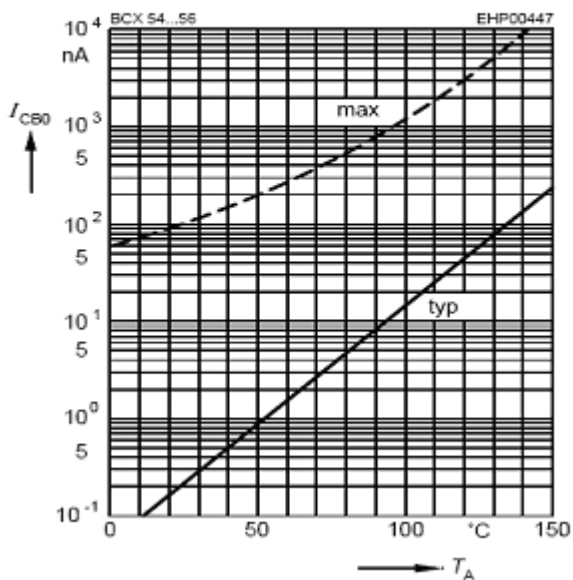
DC current gain $h_{FE} = f(I_C)$

$$V_{CE} = 2V$$



Collector cutoff current $I_{CBO} = f(T_A)$

$$V_{CB} = 30V$$



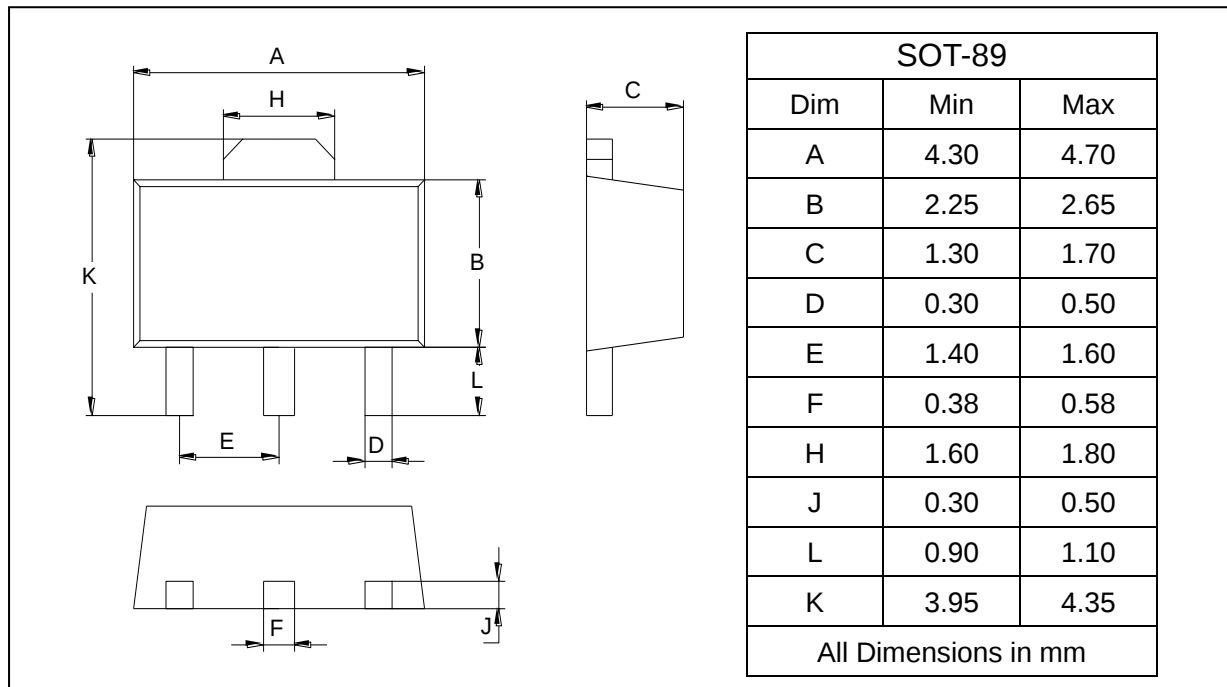
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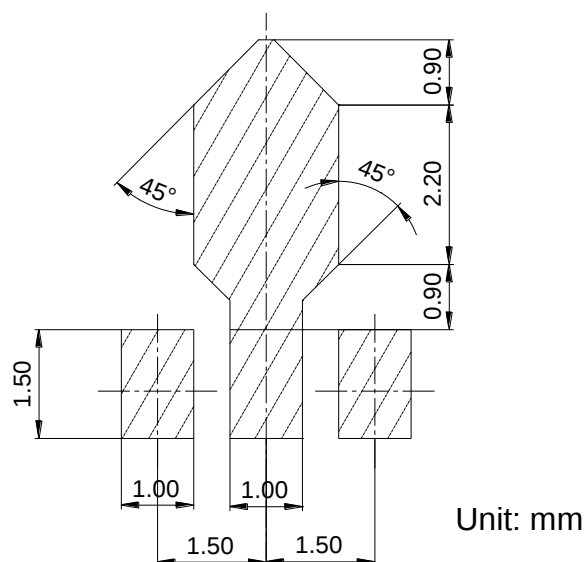
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
BCX54/BCX55/BCX56	SOT-89	1000 pcs / Tape & Reel