

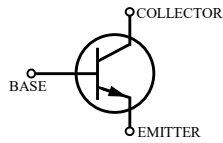
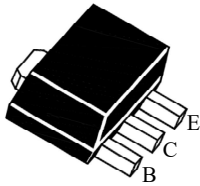


BCX56-10H / BCX56-16H

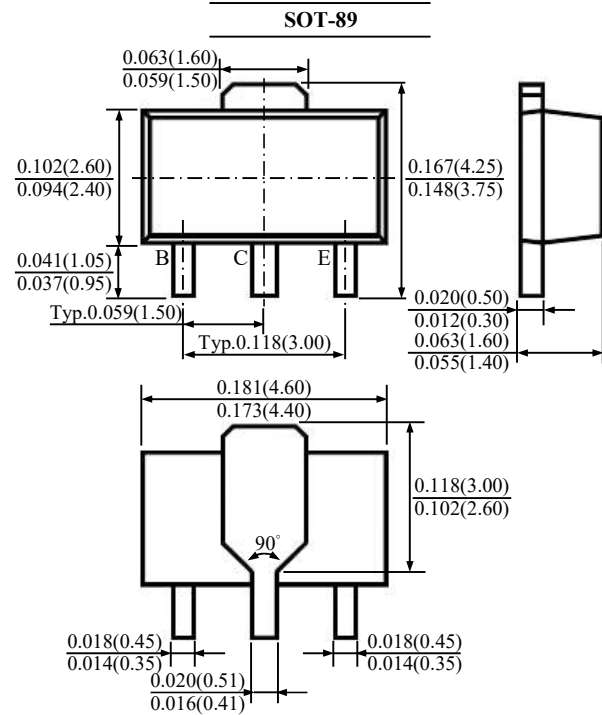
NPN TRANSISTORS

FEATURES

- Medium Power Transistor
- Suffix "H" indicates Halogen-free parts, ex. BCX56-10H



B	Base
C	Collector
E	Emitter



Dimensions in inches and (millimeter)

Maximum Ratings ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	100	V
Collector Emitter Voltage	V_{CEO}	80	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	1	A
Peak Collector Current	I_{CM}	1.5	A
Power Dissipation	P_D	(Note 1) 0.5	W
		(Note 2) 1.3	
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	(Note 1) 250	$^\circ\text{C/W}$
		(Note 2) 96	
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Note:

1. Device mounted on an FR-4 substrate PC board, with minimum recommended pad layout.
2. Device mounted on an FR-4 substrate PC board, 2oz copper, with 1-inch² copper plate.



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Electrical Characteristics ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain	$V_{CE}=2\text{V}, I_C=5\text{mA}$	h_{FE}	40	-	-	-
	BCX56-10H $V_{CE}=2\text{V}, I_C=150\text{mA}$		63	-	160	
	BCX56-16H		100	-	250	
	$V_{CE}=2\text{V}, I_C=500\text{mA}$		25	-	-	
Collector Base Cutoff Cur	$V_{CB}=30\text{V}$	I_{CBO}	-	-	100	nA
Emitter Base Cutoff Cur	$V_{EB}=5\text{V}$	I_{EBO}	-	-	100	nA
Collector Base Breakdown Voltage	$I_C=100\mu\text{A}$	$V_{(BR)CBO}$	100	-	-	V
Collector Emitter Breakdown Voltage	$I_C=1\text{mA}$	$V_{(BR)CEO}$	80	-	-	V
Emitter Base Breakdown Voltage	$I_E=100\mu\text{A}$	$V_{(BR)EBO}$	5	-	-	V
Collector Emitter Saturation Voltage	$I_C=500\text{mA}, I_B=50\text{mA}$	$V_{CE(sat)}$	-	-	0.5	V
Base Emitter Voltage	$V_{CE}=2\text{V}, I_C=500\text{mA}$	V_{BE}	-	-	1.0	V
Transition Frequency	$V_{CE}=5\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	f_T	100	-	-	MHz
Collector Capacitance	$V_{CB}=10\text{V}, f=1\text{MHz}$	C_{ob}	-	6	-	pF



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RATINGS AND CHARACTERISTIC CURVES

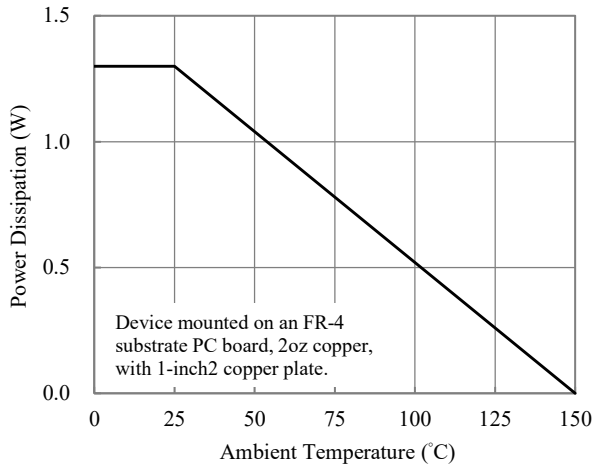


Fig. 1 Power Derating Curves

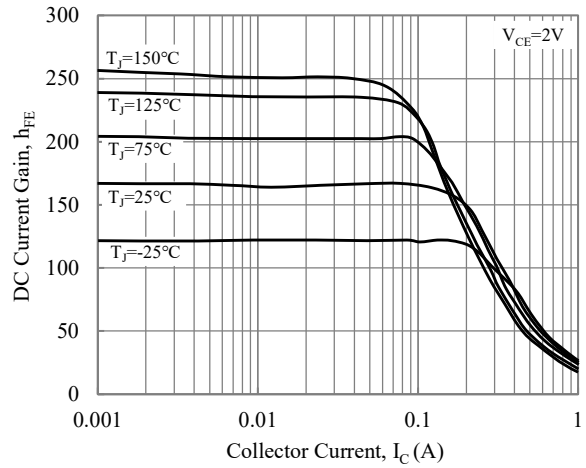


Fig. 2 Current Gain vs. Collector Current

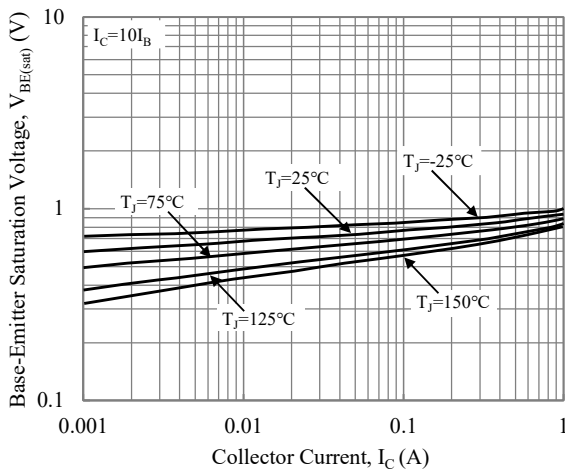


Fig. 3 Base-Emitter Saturation Voltage vs. Collector Current

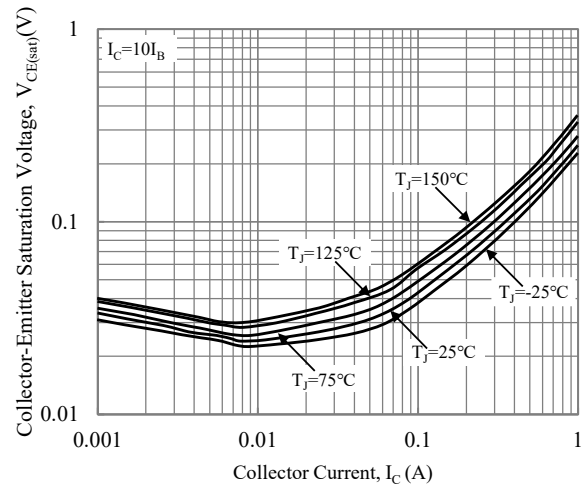


Fig. 4 Collector-Emitter Saturation Voltage vs. Collector Current

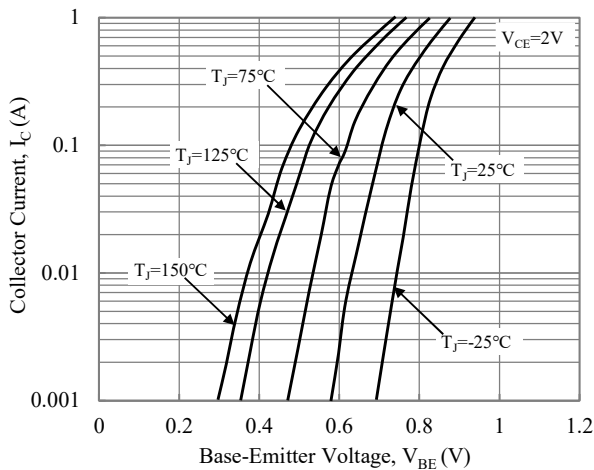


Fig. 5 Base-Emitter Voltage vs. Collector Current

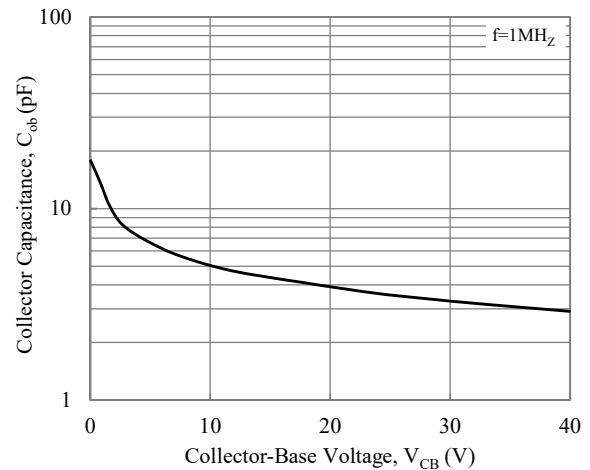


Fig. 6 Capacitance Characteristics



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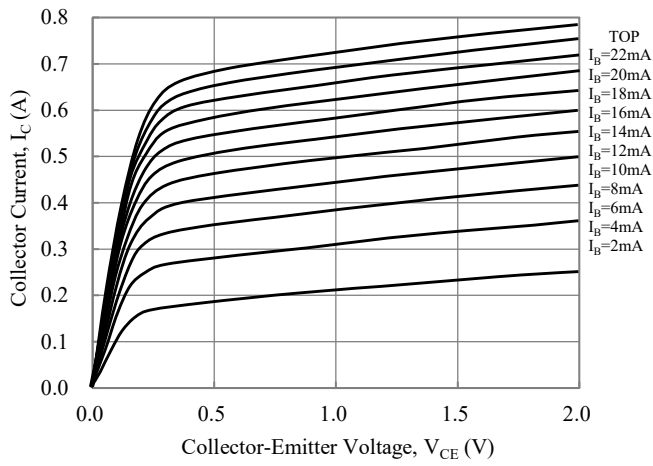


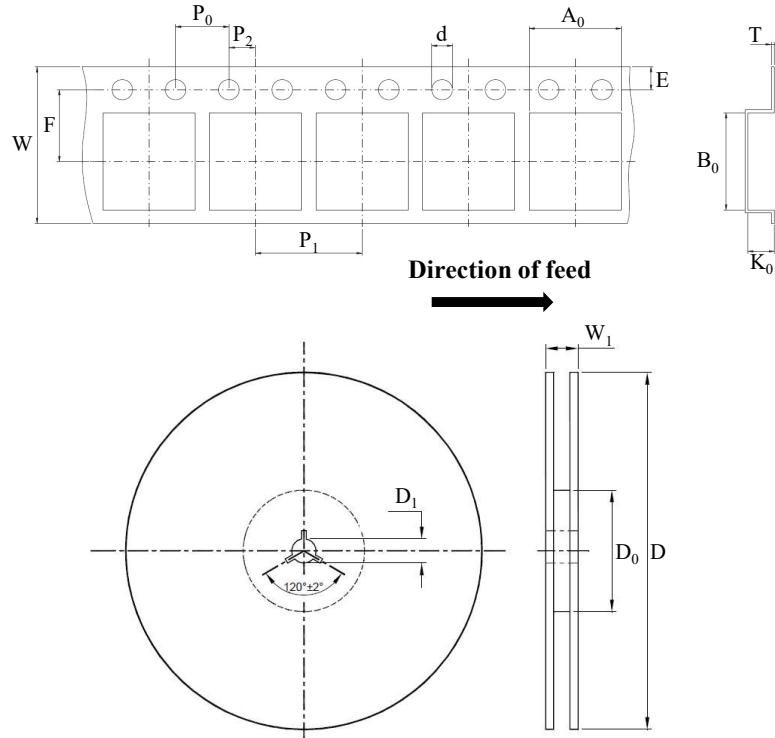
Fig. 7 Output Characteristics Curve



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TAPE & REEL SPECIFICATION



Item	Symbol	SOT-89
Carrier width	A_0	*
Carrier length	B_0	
Carrier depth	K_0	
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178.00 ± 2.00
Feed hole width	D_0	100.00
Reel inner diameter	D_1	16.40 ± 0.50
Sprocket hole position	E	1.75 ± 0.10
Punch hole position	F	5.50 ± 0.10
Sprocket hole pitch	P_0	4.00 ± 0.10
Punch hole pitch	P_1	8.00 ± 0.10
Embossment center	P_2	2.00 ± 0.10
Overall tape thickness	T	0.25 ± 0.05
Tape width	W	12.00 ± 0.20
Reel width	W_1	MAX. 20.00

Note *: A_0 , B_0 , and K_0 are determined by component size. The clearance between the components and the cavity must be within 0.05 mm min. to 0.5 mm max.

ORDER INFORMATION

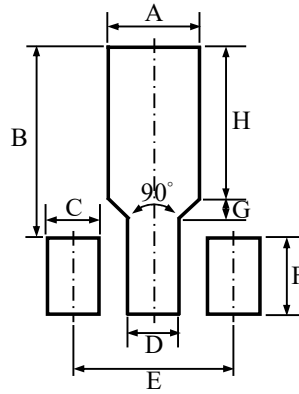
Part Number	Marking Code	Reel Size	Quantity
BCX56-10H-7	BCX56-10U	7" (D:178mm)	1,000
BCX56-16H-7	BCX56-16U		
BCX56-10H-13	BCX56-10U	13" (D:330mm)	4,000
BCX56-16H-13	BCX56-16U		



BCX56-10H / BCX56-16H

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SUGGESTED SOLDER PAD LAYOUT



Unit:mm

PACKAGE	A	B	C	D	E	F	G	H
SOT-89	1.80	3.80	1.00	1.00	3.00	1.50	0.40	3.00