

SILICON TRANSISTORS

BCX54, BCX55, BCX56

NPN SILICON EPITAXIAL TRANSISTOR

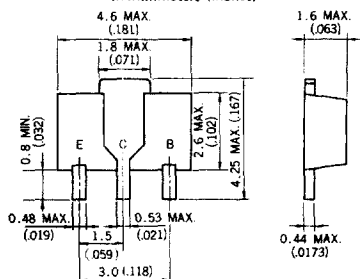
POWER MINI MOLD

DESCRIPTION

The BCX54 to 56 are designed for audio frequency power amplifier application, especially in Hybrid Integrated Circuits.

PACKAGE DIMENSIONS

in millimeters (inches)



E: Emitter
B: Base
C: Collector

FEATURES

- World Standard Miniature Package : SOT-89
- High Collector to Base Voltage : $V_{CBO} > 100$ V
- Excellent DC Current Gain Linearity
: $h_{FE} = 80$ TYP. ($V_{CE} = 2.0$ V, $I_C = 500$ mA)
- Complements to PNP type BCX51 to 53

ABSOLUTE MAXIMUM RATINGS ($T_a = 25$ °C)

Maximum Voltages and Currents	BCX54	BCX55	BCX56	
Collector to Base Voltage	V_{CBO} 45	60	100	V
Collector to Emitter Voltage	V_{CEO} 45	60	80	V
Collector to Emitter Voltage ($R_{BE} = 1$ k Ω)	V_{CER} 45	60	100	V
Emitter to Base Voltage	V_{EBO}	5.0		V
Collector Current (DC)	I_C	1.0		A
Collector Current (Pulse)*	I_C	1.5		A
Maximum Power Dissipation	P_T	2.0		W
Total Power Dissipation**		2.0		W
Maximum Temperatures				°C
Junction Temperature	T_j	150		°C
Storage Temperature Range	T_{stg}	-55 to +150		°C

* $PW \leq 10$ ms, duty cycle ≤ 50 %

**When mounted on ceramic substrate of 2.5 cm² x 0.7 mm

ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C unless otherwise noted)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			100	nA	$V_{CB} = 30$ V, $I_E = 0$
Collector Cutoff Current	I_{CBO}			10	μ A	$V_{CB} = 30$ V, $I_E = 0$, $T_j = 125$ °C
Emitter Cutoff Current	I_{EBO}			100	nA	$V_{EB} = 5.0$ V, $I_C = 0$
DC Current Gain	h_{FE1}	25				$V_{CE} = 2.0$ V, $I_C = 5.0$ mA ***
DC Current Gain	BCX54 h_{FE2}	40		250		$V_{CE} = 2.0$ V, $I_C = 150$ mA ***
DC Current Gain	BCX55, BCX56 h_{FE2}	40		160		$V_{CE} = 2.0$ V, $I_C = 500$ mA ***
DC Current Gain	h_{FE3}	25	80			$V_{CE} = 2.0$ V, $I_C = 500$ mA ***
Collector Saturation Voltage	$V_{CE(sat)}$	0.15	0.50		V	$I_C = 500$ mA, $I_B = 50$ mA ***
Base Saturation Voltage	$V_{BE(sat)}$	0.9	1.50		V	$I_C = 500$ mA, $I_B = 50$ mA ***
Base to Emitter Voltage	V_{BE}		1.0		V	$V_{CE} = 2.0$ V, $I_C = 500$ mA ***
Gain Bandwidth Product	f_T		160		MHz	$V_{CE} = 5.0$ V, $I_E = -10$ mA
Output Capacitance	C_{ob}		12		pF	$V_{CB} = 10$ V, $I_E = 0$, $f = 1.0$ MHz

*** Pulsed : $PW \leq 350$ μ s, duty cycle ≤ 2 %

h_{FE} Classification

Marking	BCX54	BCX55	BCX56
	BB	BF	BJ
	BC	BG	BK
	BD		
h_{FE2}	40 - 100	60 - 160	100 - 250

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

