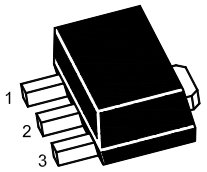
BCX53U-HAF

PNP Silicon Epitaxial Planar Transistor

Medium Power Transistor



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

Absolute Maximum Ratings (T_a = 25℃)

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	$-I_{CM}$	2	A
Total Power Dissipation	P_{tot}	0.5 [1)] 1.3 [2)]	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	- 65 to + 150	℃

[1)] Device mounted on an FR4 Printed-Circuit Board(PCB), single-sided copper, tin-plated and standard footprint.

[2)] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 6 cm^2

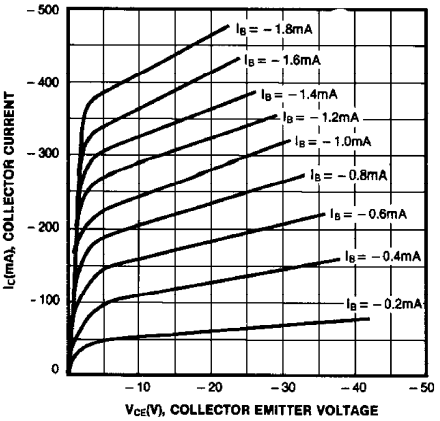
Dated: 02/04/2020 Rev: 03

Characteristics at T_a = 25℃

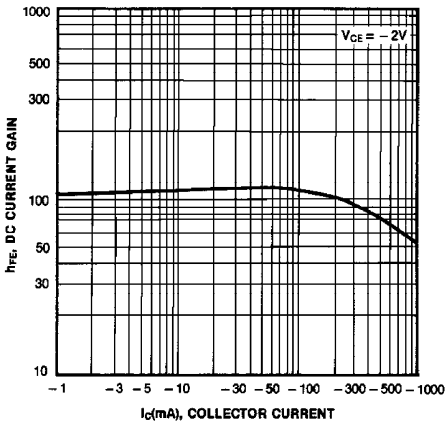
Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain						
at $-V_{CE}$ = 2 V, $-I_C$ = 5 mA		h_{FE}	40	-	-	-
at $-V_{CE}$ = 2 V, $-I_C$ = 150 mA	BCX53-10U	h_{FE}	63	-	160	-
	BCX53-16U	h_{FE}	100	-	250	-
at-V_{CE} = 2 V, $-I_C$ = 500 mA		h_{FE}	25	-	-	-
Collector Base Cutoff Current at $-V_{CB}$ = 64 V ,		$-I_{CBO}$	-	-	100	nA
Emitter Base Cutoff Current at $-V_{EB}$ = 5 V		$-I_{EBO}$	-	-	100	nA
Collector Cutoff Current at $-V_{CE}$ = 64 V, IB=0， Ta=65℃， 90%RH		$-I_{CEO}$	-	-	1	μA
Collector Base Breakdown Voltage at $-I_C$ = 100 μA		$-V_{(BR)CBO}$	100	-	-	V
Collector Emitter Breakdown Voltage at $-I_C$ = 1 mA		$-V_{(BR)CEO}$	80	-	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 100 μA		$-V_{(BR)EBO}$	5	-	-	V
Collector Emitter Saturation Voltage at $-I_C$ = 500 mA, $-I_B$ = 50 mA		$-V_{CE(sat)}$	-	-	0.5	V
Base Emitter Voltage at $-V_{CE}$ = 2 V, $-I_C$ = 500 mA		$-V_{BE}$	-	-	1	V
Transition Frequency at $-V_{CE}$ = 5 V, $-I_C$ = 50 mA, f = 100 MHz		f_T	-	145	-	MHz
Collector Capacitance at $-V_{CB}$ = 15 V, f = 1 MHz		C_c	-	15	-	pF

Electrical Characteristics Curves

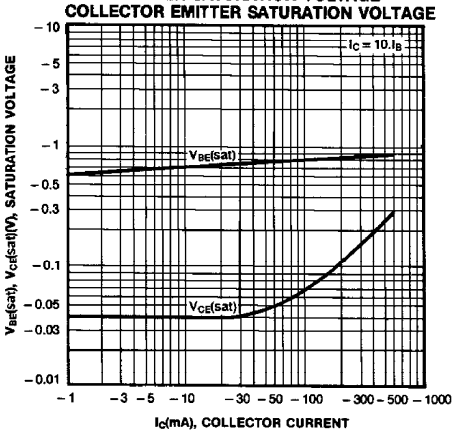
STATIC CHARACTERISTIC



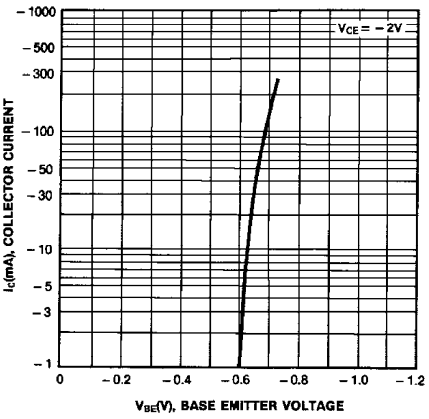
DC CURRENT GAIN



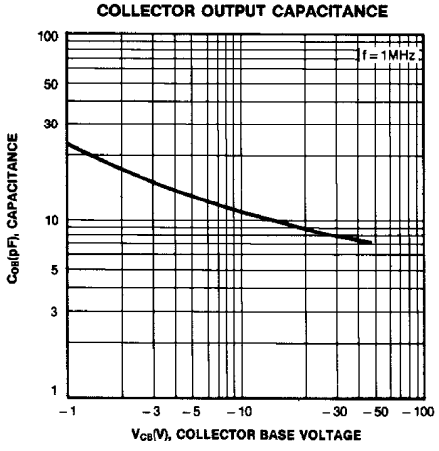
BASE EMITTER SATURATION VOLTAGE
COLLECTOR EMITTER SATURATION VOLTAGE



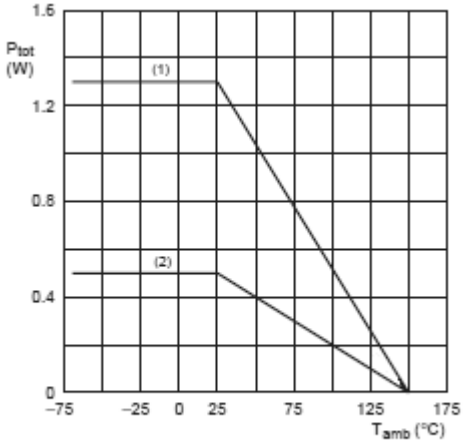
BASE EMITTER ON VOLTAGE



COLLECTOR OUTPUT CAPACITANCE



Power derating curves



(1) FR4 PCB, mounting pad for collector 6 cm^2
(2) FR4 PCB, standard footprint

Package Outline (Dimensions in mm) **SOT-89**