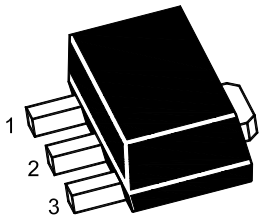
BCX52U

PNP Silicon Epitaxial Planar Power Transistor



1.Base 2.Collector 3.Emitter

SOT-89 Plastic Package

Features

- Low Saturation Voltage V_{CE}(sat)
- Epitaxial Planar Die Construction

Applications

- Medium Power Switching or Amplification Applications
- AF driver and output stages

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	60	V
Collector Emitter Voltage	$-V_{CEO}$	60	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	1	A
Peak Collector Current, Pulsed	$-I_{CM}$	1.5	A
Total Power Dissipation	P_{tot}	1	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	- 55 to + 150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient [1)]	$R_{\theta JA}$	125	℃/W

[1)] Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.

Dated: 29/04/2021 Rev:01

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}	25	-	-	-
at $-V_{CE}$ = 2 V, $-I_C$ = 150 mA	BCX52-10U	h_{FE}	63	-	160	-
	BCX52-16U	h_{FE}	100	-	250	-
at $-V_{CE}$ = 2 V, $-I_C$ = 500 mA		h_{FE}	25	-	-	-
Collector Base Breakdown Voltage at $-I_C$ = 100 µA		$-V_{BR(CBO)}$	60	-	-	V
Collector Emitter Breakdown Voltage at $-I_C$ = 10 mA		$-V_{BR(CEO)}$	60	-	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 10 µA		$-V_{BR(EBO)}$	5	-	-	V
Collector Base Cutoff Current at $-V_{CB}$ = 30 V		$-I_{CBO}$	-	-	0.1	µA
Emitter Base Cutoff Current at $-V_{EB}$ = 4 V		$-I_{EBO}$	-	-	20	nA
Collector Emitter Saturation Voltage at $-I_C$ = 0.5 A, $-I_B$ = 50 mA		$-V_{CE(sat)}$	-	-	500	mV
Base Emitter Turn-On Voltage at $-V_{CE}$ = 2 V, $-I_C$ = 500 mA		$-V_{BE(on)}$	-	-	1	V
Output Capacitance at $-V_{CB}$ = 10 V, f = 1 MHz		C_{ob}	-	-	25	pF
Transition Frequency at $-V_{CE}$ = 10 V, $-I_C$ = 50 mA, f = 100 MHz		f_T	-	105	-	MHz

Electrical Characteristics Curves

Fig. 1 Power Derating Curve

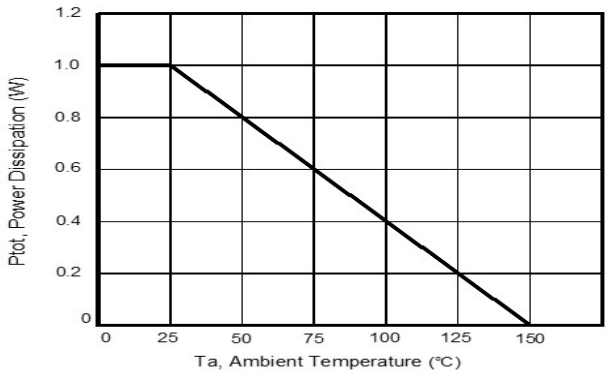


Fig. 2 h_{FE},DC Current Gain vs. Collector Current

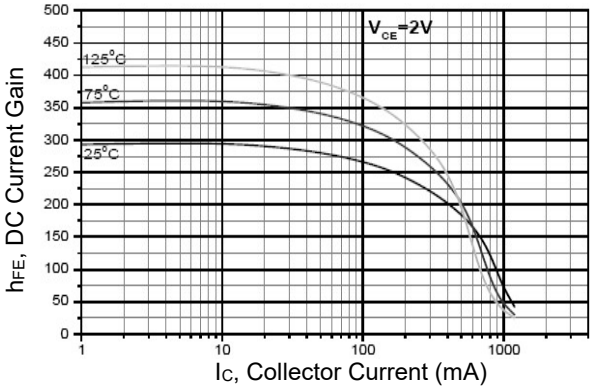


Fig. 3 $V_{BE(sat)}$ vs. Collector Current

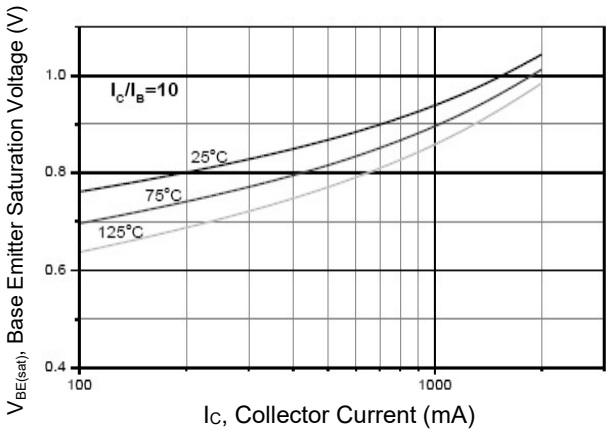
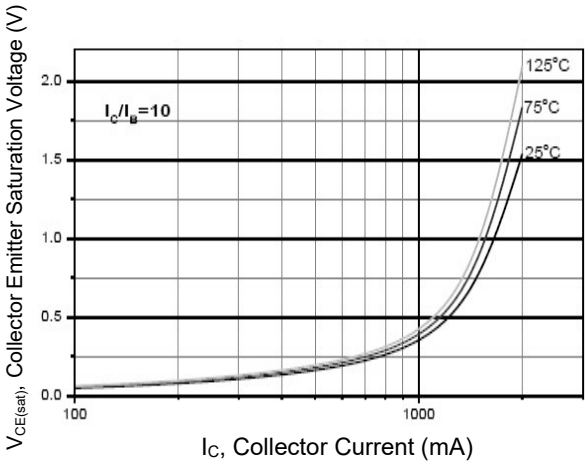
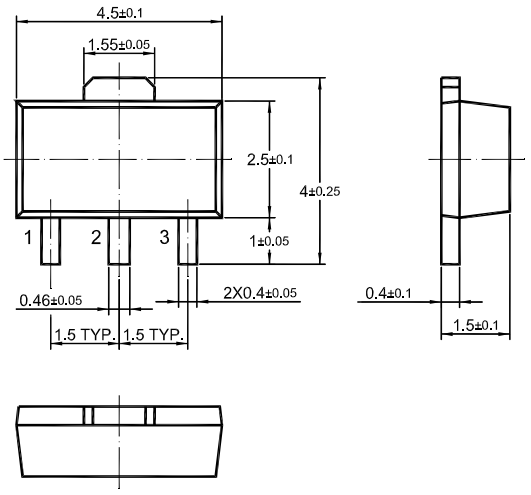


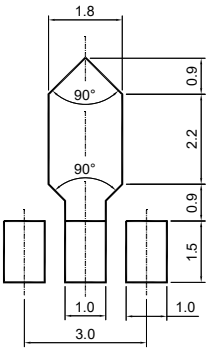
Fig. 4 $V_{CE(sat)}$ vs. Collector Current



Package Outline (Dimensions in mm) SOT-89



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-89	12	8 ± 0.1	0.315 ± 0.004	178	7	1,000
				330	13	4,000

Marking information

" BCX52-**U " = Part No. (" ** " = HFE grouping Code)
"YM" = Date Code Marking
"Y" = Year
"M" = Month
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