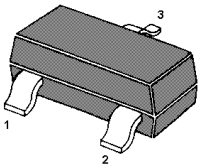
MMBTSB1197

PNP Silicon Epitaxial Planar Transistor

Low frequency transistor

The transistor is subdivided into two groups Q and R according to its DC current gain.



1.BASE 2.EMITTER 3.COLLECTOR

SOT-23 Plastic Package

Absolute Maximum Ratings (T_a = 25℃)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	32	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	800	mA
Power Dissipation	P_{tot}	200	mW
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)]	$R_{\theta JA}$	625	℃/W

[1)] Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

Dated : 13/05/2021 Rev:02

Characteristics at T_a =25℃

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain at $-V_{CE}$ = 3 V, $-I_C$ = 100 mA	Q R	h_{FE} h_{FE}	120 180	270 390	- -
Collector Cutoff Current at $-V_{CB}$ = 20 V		$-I_{CBO}$	-	0.5	μA
Emitter Cutoff Current at $-V_{EB}$ = 4 V		$-I_{EBO}$	-	0.5	μA
Collector Base Breakdown Voltage at $-I_C$ = 50 μA		$-V_{(BR)CBO}$	40	-	V
Collector Emitter Breakdown Voltage at $-I_C$ = 1 mA		$-V_{(BR)CEO}$	32	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 50 μA		$-V_{(BR)EBO}$	5	-	V
Collector Saturation Voltage at $-I_C$ = 500 mA, $-I_B$ = 50 mA		$-V_{CE(sat)}$	-	0.5	V
Output Capacitance at $-V_{CB}$ = 10 V, I_E = 0 A, f = 1 MHz		C_{ob}	-	30	pF
Transition Frequency at $-V_{CE}$ = 5 V, I_E = 50 mA, f = 100 MHz		f_T	50	-	MHz

Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

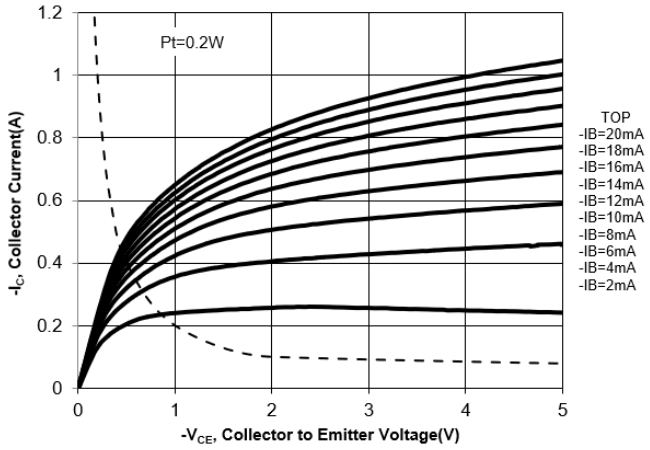


Fig. 2 Collector Current vs. Base to Emitter Voltage

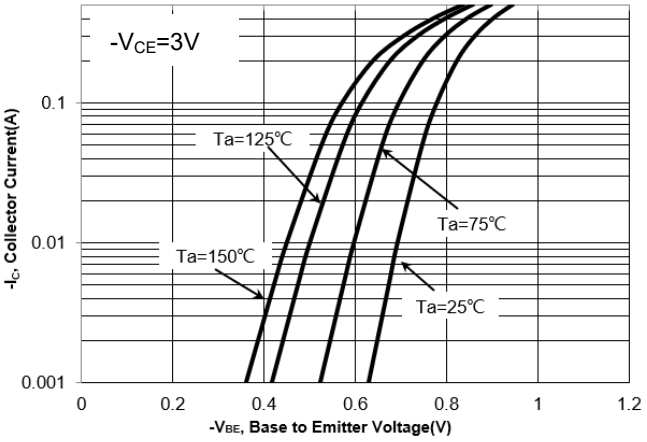


Fig. 3 V_{BESAT} vs. Collector Current

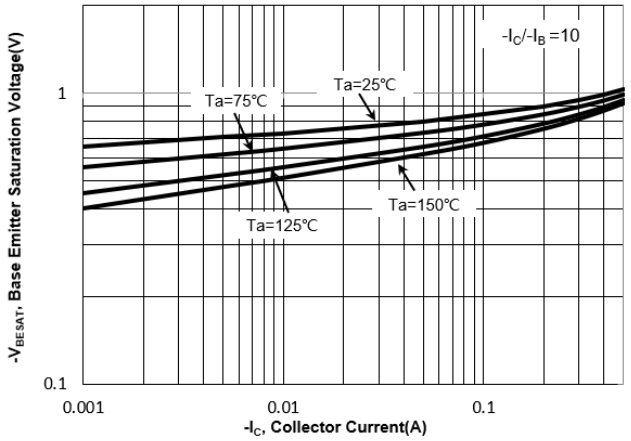


Fig. 4 h_{FE},DC Current Gain vs. Collector Current

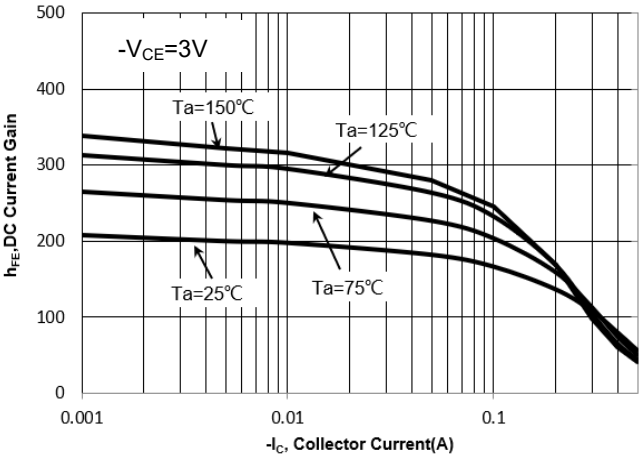


Fig. 5 V_{CESAT} vs. Collector Current

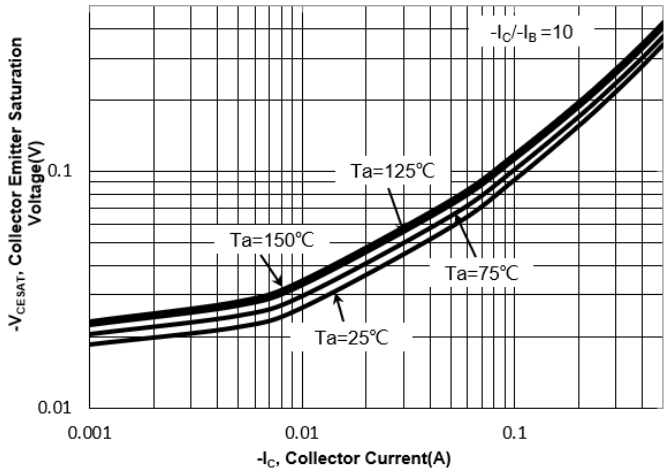
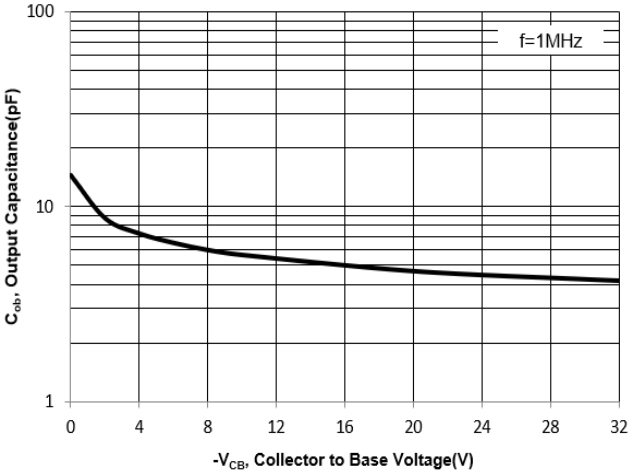


Fig. 6 Output Capacitance

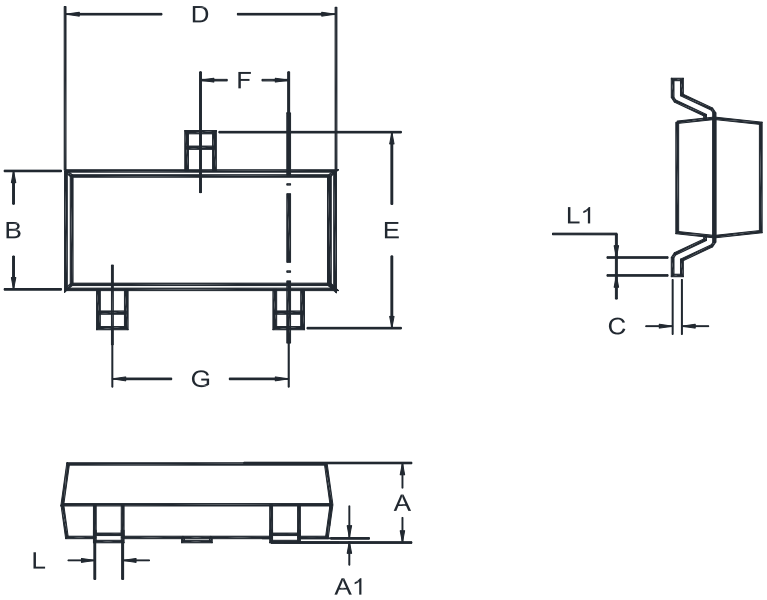


Dated : 13/05/2021 Rev:02

MMBTSB1197

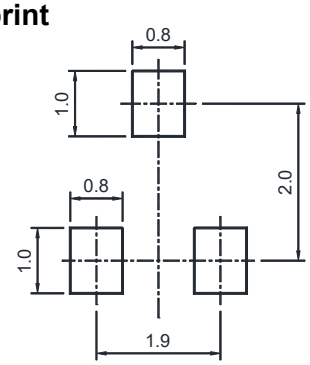
Package Outline (Dimensions in mm)

SOT-23



Unit	A	A1	B	C	D	E	F	G	L	L1
mm	1.20 0.89	0.100 0.013	1.40 1.20	0.19 0.08	3.04 2.80	2.6 2.2	1.02 0.89	2.04 1.78	0.51 0.37	0.2 MIN

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-23	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

" *** " = Part No.
MMBTSB1197Q/R=B9C/B9D
" YM " = Date Code Marking
" Y " = Year
" M " = Month
Font type: Arial