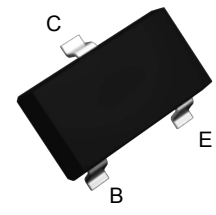


**Features**

- Low  $V_{CE(SAT)}$
- Low frequency power amplifier



SOT-23

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

Parameter	Symbol	Max.	Unit
Collector-Base Voltage	$V_{CBO}$	-40	V
Collector-Emitter Voltage	$V_{CEO}$	-32	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current-Continuous	$I_C$	-800	mA
Total Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_J$	150	$^{\circ}C$
Storage Temperature Range	$T_{STG}$	-55 To +150	$^{\circ}C$
Thermal Resistance from Junction to Ambient <sup>1</sup>	$R_{\theta JA}$	625	$^{\circ}C/W$

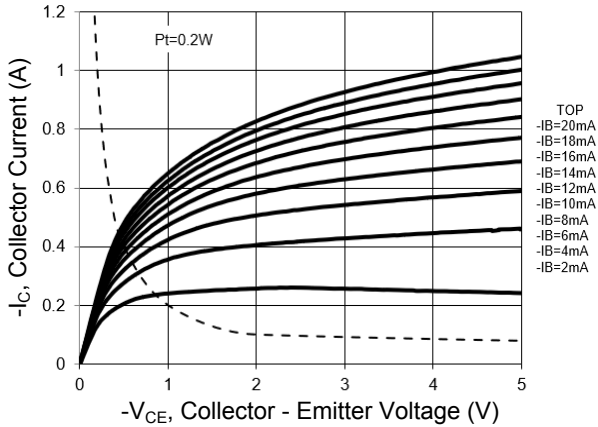
Note:

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

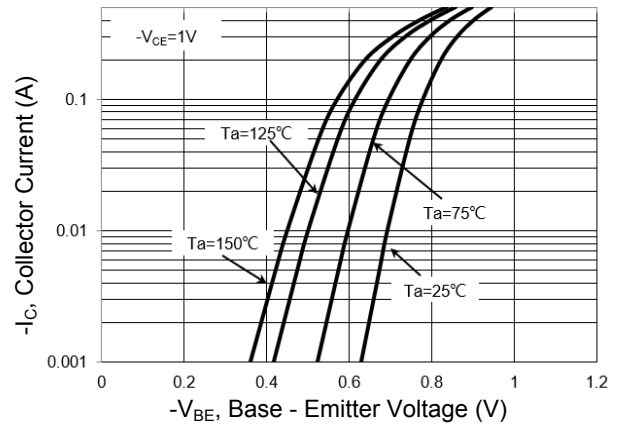
**Electrical Characteristics** ( $T_A=25^{\circ}C$  unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-50\mu A$	-40	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA$	-32	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-50\mu A$	-5	-	V
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=-20V$	-	-0.5	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=-4V$	-	-0.5	$\mu A$
DC Current Gain (MMBT1197-Q)	$h_{FE}$	$V_{CE}=-3V, I_C=-100mA$	120	270	-
DC Current Gain (MMBT1197-R)			180	390	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-500mA, I_B=-50mA$	-	-0.5	V
Transition Frequency	$f_T$	$V_{CE}=-5V, I_E=50mA, F=100MHz$	50	-	MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10V, I_E=0A, F=1MHz$	-	30	pF

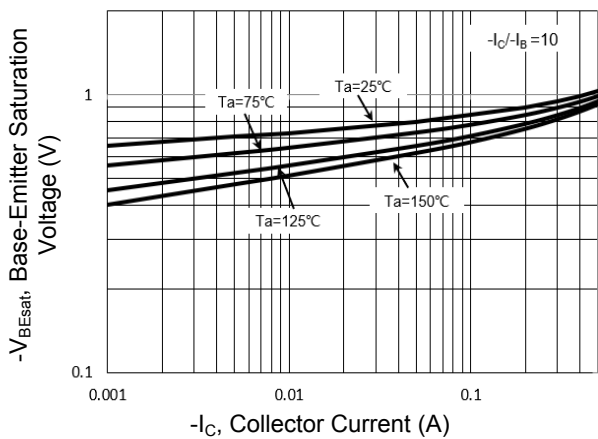
**Typical Characteristic Curves**



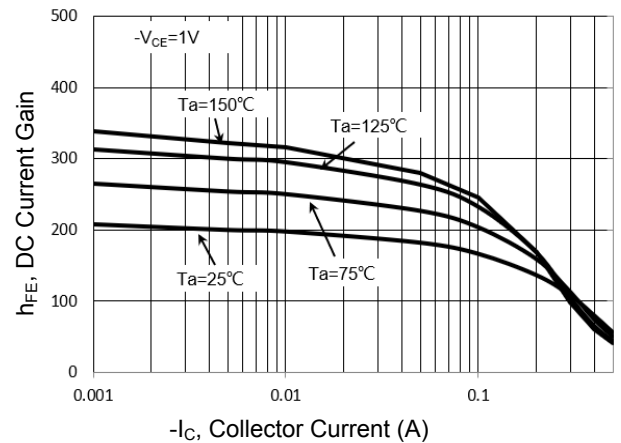
**Figure 1. Output Characteristics Curve**



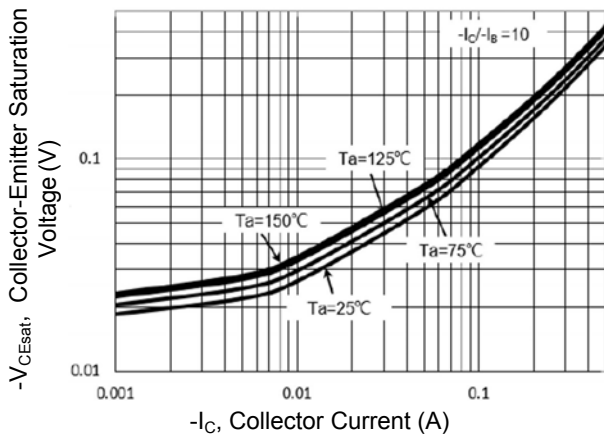
**Figure 2. Collector Current vs. Base - Emitter Voltage**



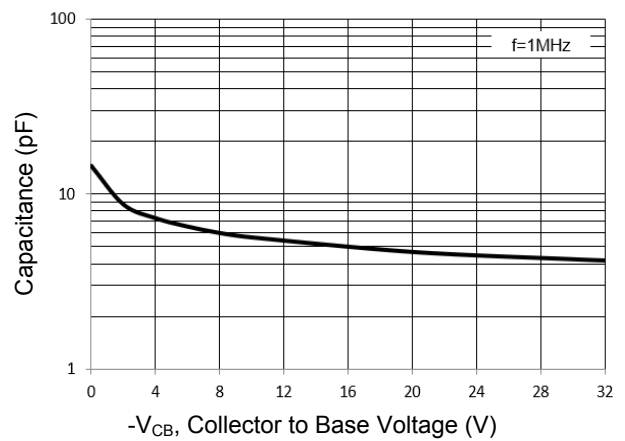
**Figure 3. Base - Emitter Saturation Voltage vs. Collector Current**



**Figure 4. DC Current Gain vs. Collector Current**

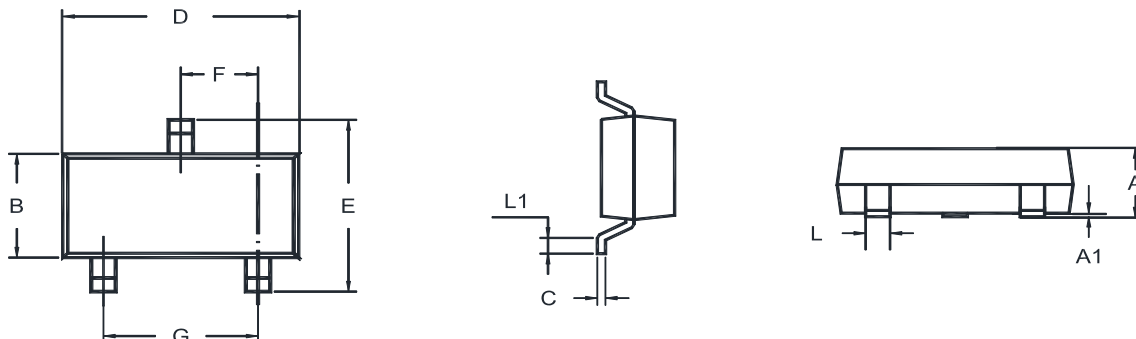


**Figure 5. Collector - Emitter Saturation Voltage vs. Collector Current**



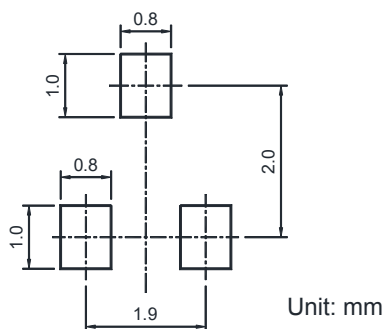
**Figure 6. Output Capacitance**

**Package Outline Dimensions (SOT-23)**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.890	1.200	0.035	0.047
A1	0.013	0.100	0.001	0.004
B	1.200	1.400	0.047	0.055
C	0.080	0.190	0.003	0.007
D	2.800	3.040	0.110	0.120
E	2.200	2.600	0.087	0.102
F	0.890	1.020	0.035	0.040
G	1.780	2.040	0.070	0.080
L	0.370	0.510	0.015	0.020
L1	0.200 Min		0.008 Min	

**Recommended Pad Layout**



**Order Information**

Device	Package	Marking	Quantity	HSF Status
MMBT1197-Q	SOT-23	B9C	3,000 pcs / Reel	RoHS Compliant
MMBT1197-R	SOT-23	B9D	3,000 pcs / Reel	RoHS Compliant