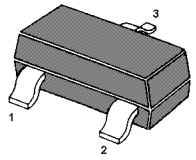
MMBTSC2223

NPN Silicon Epitaxial Planar Transistor

High frequency amplifier

The transistor is subdivided into three groups, R, O and Y, according to its DC current gain.



1.BASE 2.EMITTER 3.COLLECTOR

TO-236 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	30	V
Collector Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	20	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 + 150	°C

Characteristics at T_{amb}=25 °C

Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 6 V, I_C = 1 mA Current Gain Group	R	h_{FE}	40	-	80	-
	O	h_{FE}	60	-	120	-
	Y	h_{FE}	90	-	180	-
Collector Base Cutoff Current at V_{CB} = 30 V		I_{CBO}	-	-	100	nA
Emitter Base Cutoff Current at V_{EB} = 4 V		I_{EBO}	-	-	100	nA
Collector Base Breakdown Voltage at I_C = 10 µA		$V_{(BR)CBO}$	30			V
Collector Emitter Breakdown Voltage at I_C = 1 mA		$V_{(BR)CEO}$	20	-	-	V
Emitter Base Breakdown Voltage at I_E = 10 µA		$V_{(BR)EBO}$	4	-	-	V
Collector Emitter Saturation Voltage at I_C = 10 mA, I_B = 1 mA		$V_{CE(sat)}$	-	-	0.3	V
Gain Bandwidth Product at V_{CE} = 6 V, $-I_E$ =1 mA		f_T	-	600	-	MHz
Output Capacitance at V_{CB} = 6 V, I_E = 0, f = 1 MHz		C_{ob}	-	1	-	pF

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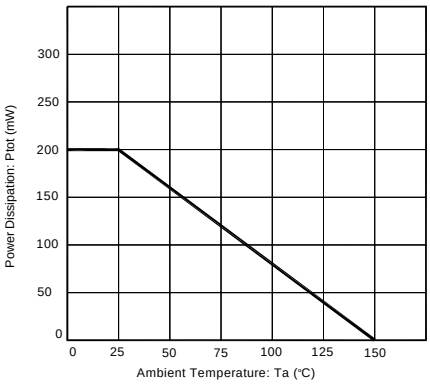
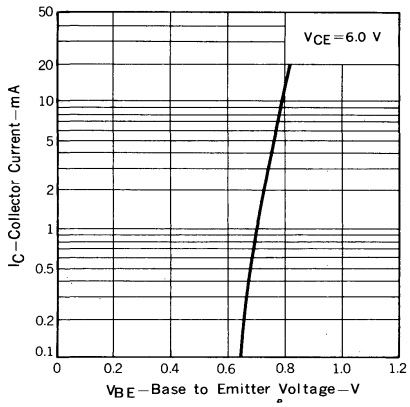
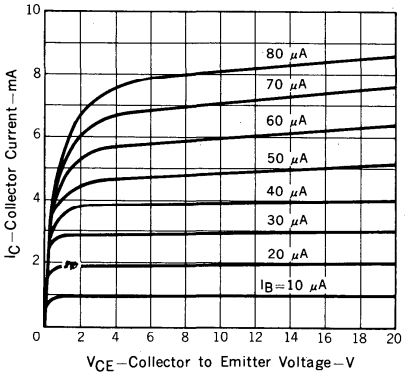
Power Dissipation vs Ambient Temperature



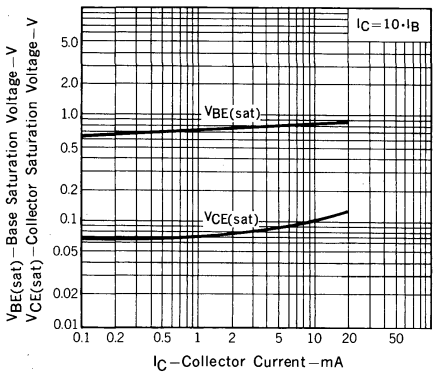
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



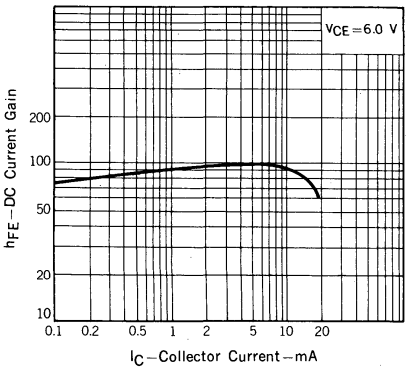
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



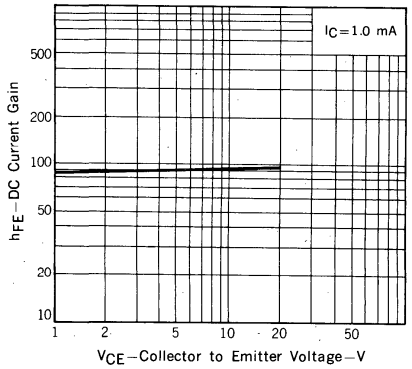
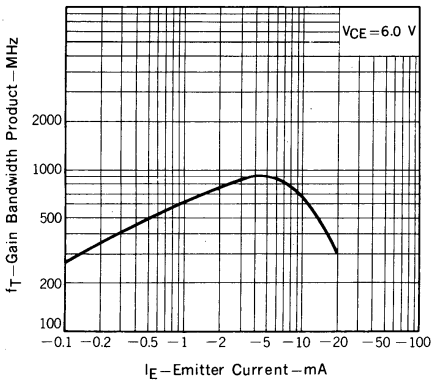
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



DC CURRENT GAIN vs. COLLECTOR CURRENT



DC CURRENT GAIN vs. COLLECTOR TO EMITTER VOLTAGE



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT