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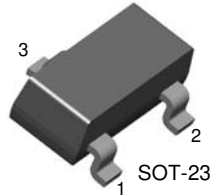
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



MMBT5770

NPN RF Transistor

- This device is designed for use as RF amplifiers, oscillators and multipliers with collector currents in the 1.0 mA to 30 mA range.
- Sourced from process 43.



1. Base 2. Emitter 3. Collector

Absolute Maximum Ratings T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CB0}	Collector-Base Voltage	30	V
V _{CEO}	Collector-Emitter Voltage	15	V
V _{EBO}	Emitter-Base Voltage	4.5	V
I _C	Collector Current - Continuous	10	mA
T _J , T _{STG}	Operating and Storage Junction Temperature Range	-55 to +150	°C

Thermal Characteristics T_a = 25°C unless otherwise noted

Symbol	Parameter	Max.	Units
P _D	Total Device Dissipation Derate above 25°C	225 1.8	mW mW/°C
R _{θJA}	Thermal Resistance, Junction to Ambient	556	°C/W

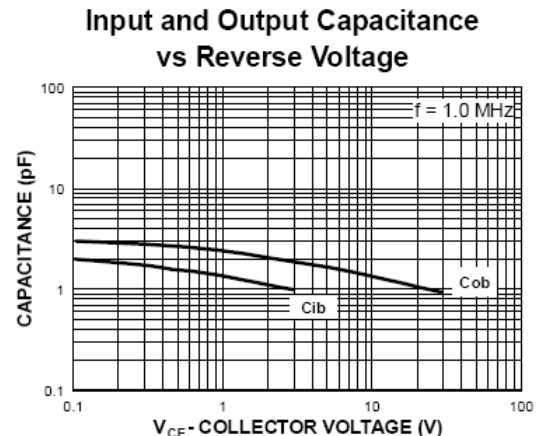
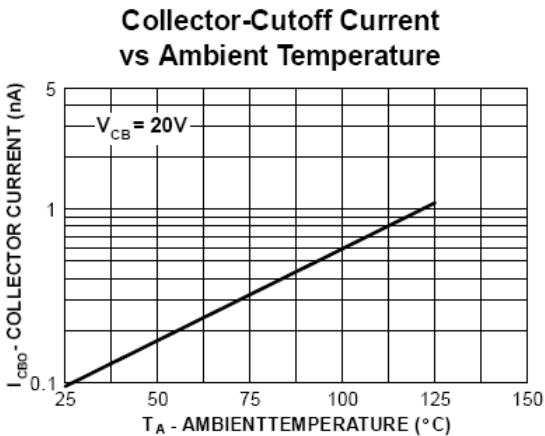
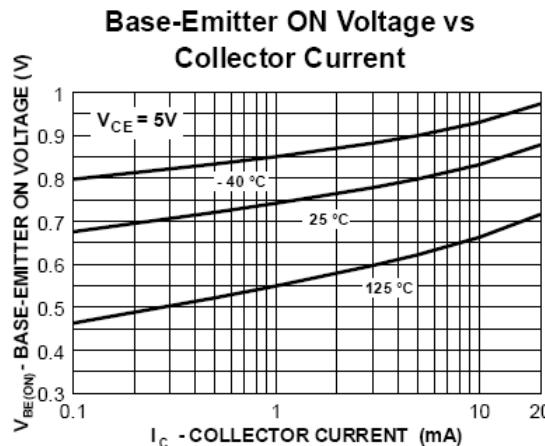
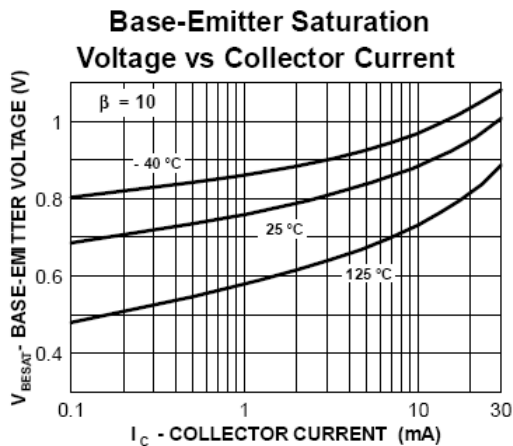
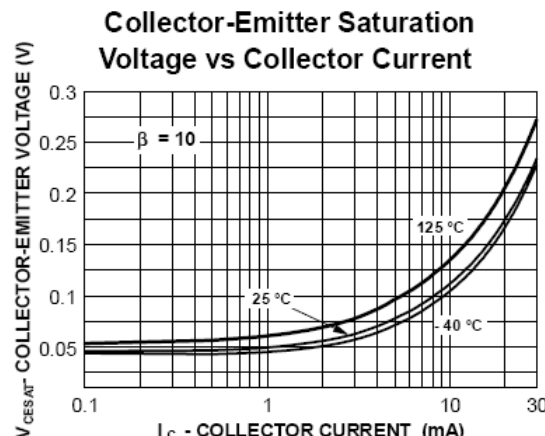
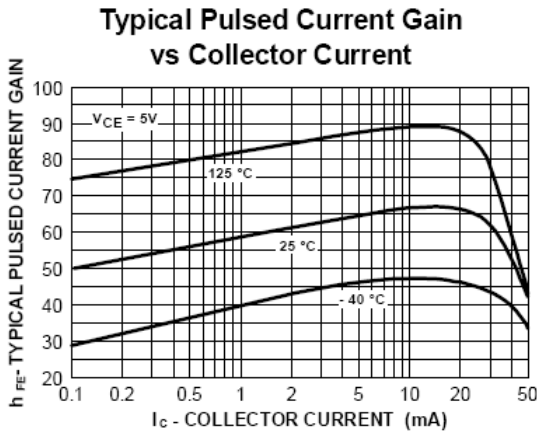
* Device mounted on FR-4PCB 1.6" × 1.6" × 0.06".

Electrical Characteristics T_a = 25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
Off Characteristics					
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 1.0 μA, I _E = 0	30		V
V _{CEO(sus)}	Collector-Emitter Sustaining Voltage*	I _C = 3.0 mA, I _B = 0	15		V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 10 μA, I _C = 0	3		V
I _{CB0}	Collector-Cutoff Current	V _{CB} = 15 V, I _E = 0		50	nA
On Characteristics *					
h _{FE}	DC Current Gain	V _{CE} = 1.0V, I _C = 3.0mA	30		
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 10mA, I _B = 1.0mA		0.4	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 10mA, I _B = 1.0mA		1.0	V
Small Signal Characteristics					
f _T	Current Gain Bandwidth Product	I _C = 4.0mA, V _{CE} = 10V, f = 100MHz	600		MHz

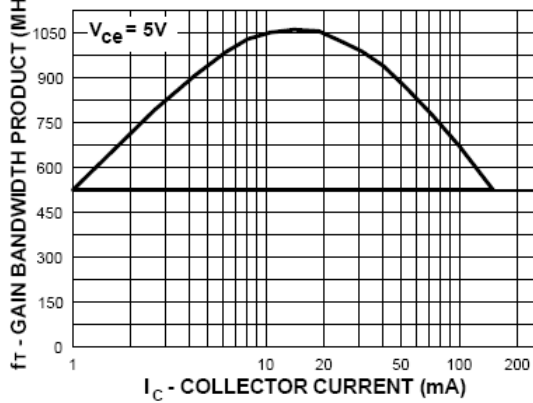
* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%

Typical Characteristics

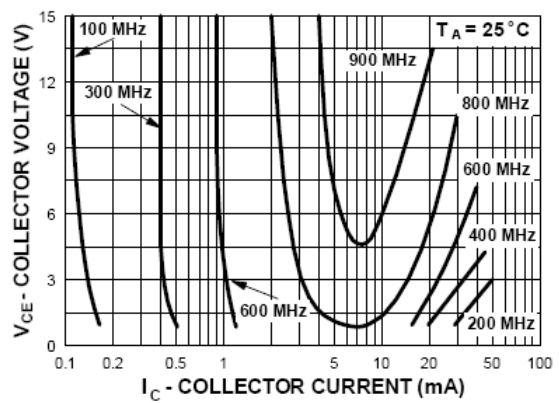


Typical Characteristics (continued)

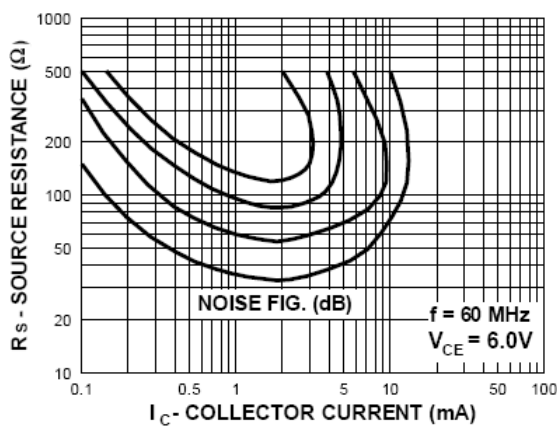
Gain Bandwidth Product vs Collector Current



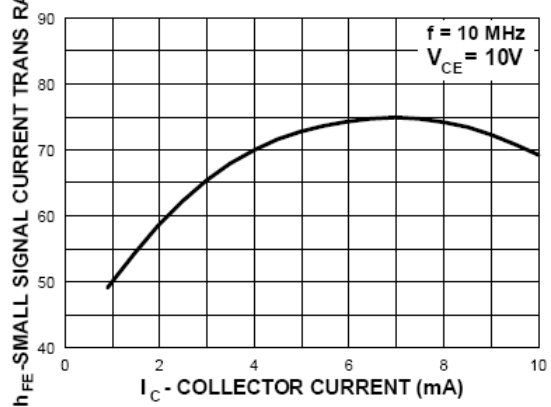
Contours of Constant Gain Bandwidth Product (f_T)



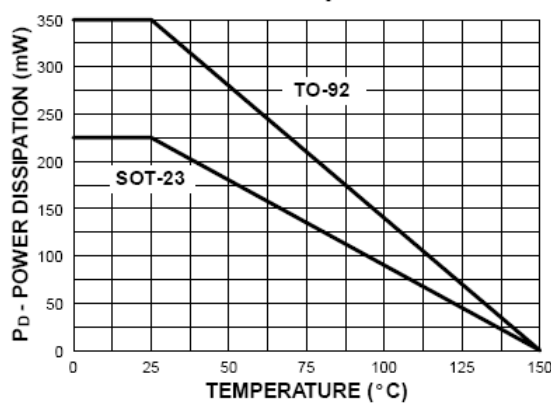
Contours of Constant Noise Figure



Small Signal Current Gain vs Collector Current

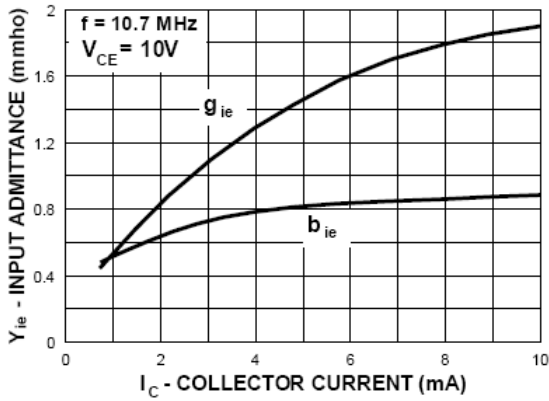


Power Dissipation vs Ambient Temperature

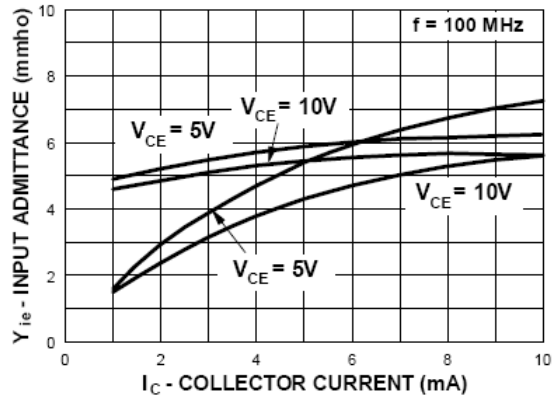


Typical Characteristics (continued)

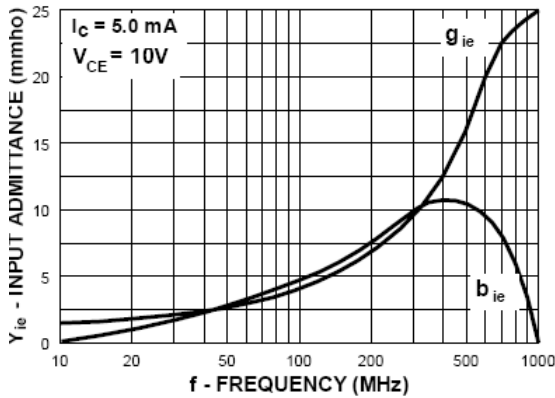
Input Admittance vs Collector Current-Output Short Circuit



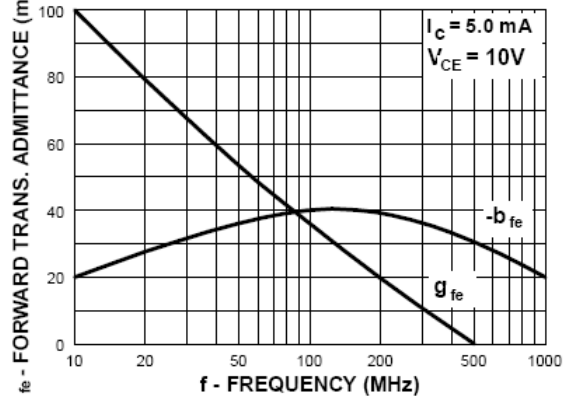
Input Admittance vs Collector Current-Output Short Circuit



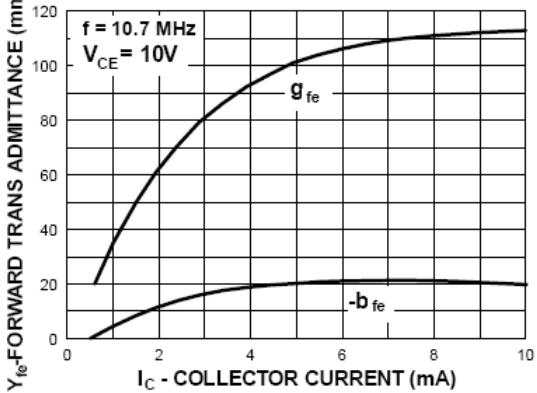
Input Admittance vs Frequency-Output Short Circuit



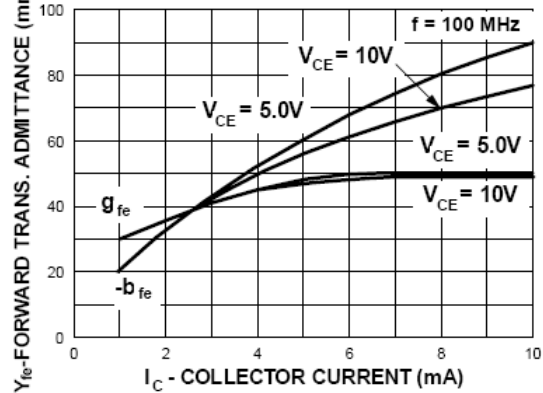
Forward Transfer Admittance vs Frequency-Output Open Circuit



Forward Trans. Admittance vs Collector Current-Output Short Circuit

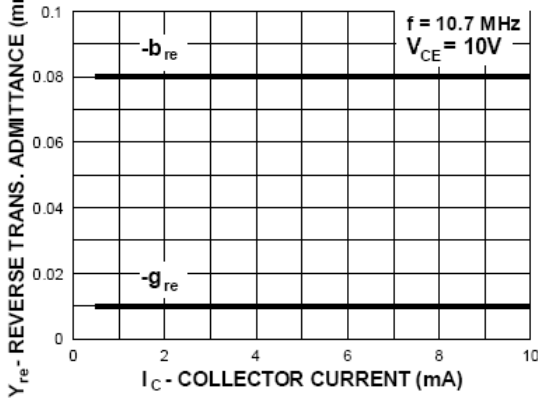


Forward Trans. Admittance vs Collector Current-Output Short Circuit

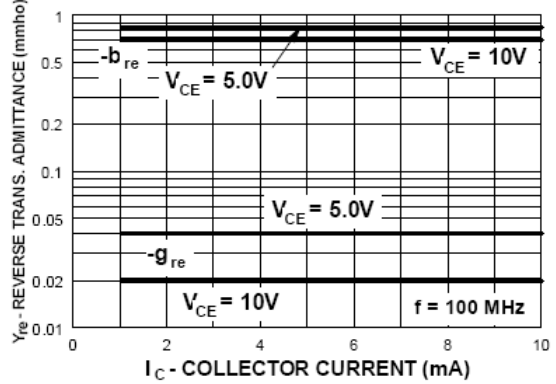


Typical Characteristics (continued)

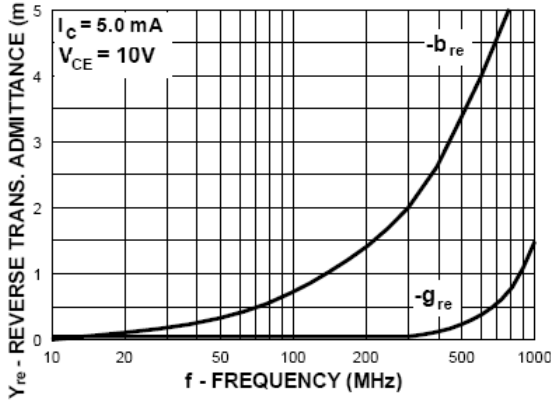
Reverse Transfer Admittance vs Collector Current-Input Short Circuit



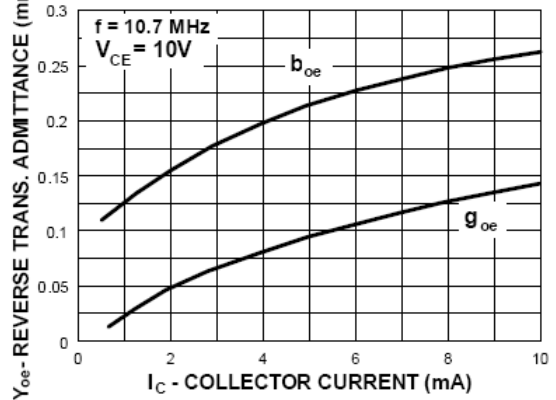
Reverse Transfer Admittance vs Collector Current-Input Short Circuit



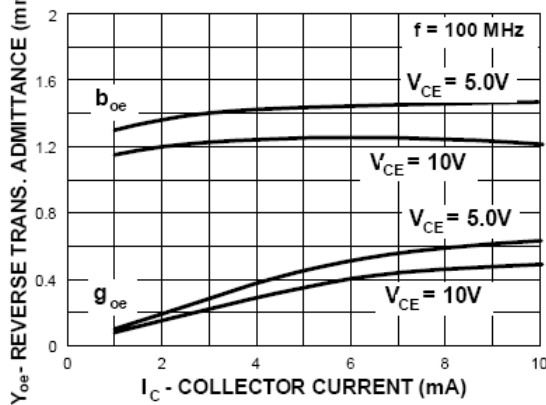
Reverse Transfer Admittance vs Frequency-Input Short Circuit



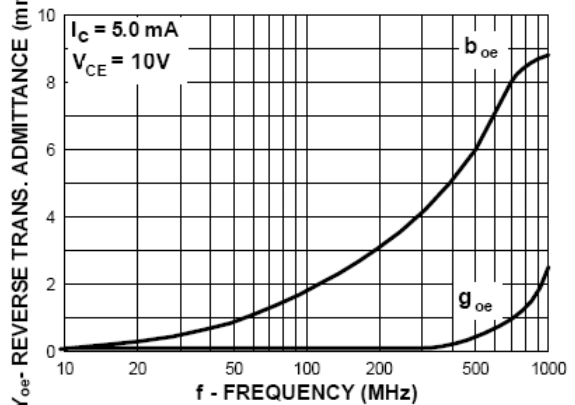
Output Admittance vs Collector Current-Input Short Circuit



Output Admittance vs Collector Current-Input Short Circuit




Output Admittance vs Frequency-Input Short Circuit





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