

FEATURES

- Epitaxial Planar Die Construction
- Complementary PNP Types Available (MMBTA55 / MMBTA56)
- Ideal for Medium Power Amplification and Switching

MMBTA05 MMBTA06 (NPN)



MAXIMUM RATINGS (TA=25°C unless otherwise noted)

Characteristic	Symbol	MMBTA05	MMBTA06	Unit
Collector-Base Voltage	V _{CB0}	60	80	V
Collector-Emitter Voltage	V _{CEO}	60	80	V
Emitter-Base Voltage	V _{EBO}	4.0		V
Collector Current - Continuous (Note 1)	I _C	500		mA
Power Dissipation (Note 1)	P _d	350		mW
Thermal Resistance, Junction to Ambient (Note 1)	R _{θJA}	357		K/W
Operating and Storage and Temperature Range	T _j , T _{STG}	-55 to +150		°C

ELECTRICAL CHARACTERISTICS (T_{amb}=25°C unless otherwise specified)

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)					
Collector-Base Breakdown Voltage	MMBTA05 MMBTA06 V _{(BR)CBO}	60 80	—	V	I _C = 100μA, I _E = 0
Collector-Emitter Breakdown Voltage	MMBTA05 MMBTA06 V _{(BR)CEO}	60 80	—	V	I _C = 1.0mA, I _B = 0
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	4.0	—	V	I _E = 100μA, I _C = 0
Collector Cutoff Current	MMBTA05 MMBTA06 I _{CBO}	—	100	nA	V _{CB} = 60V, I _E = 0 V _{CB} = 80V, I _E = 0
Collector Cutoff Current	MMBTA05 MMBTA06 I _{CES}	—	100	nA	V _{CE} = 60V, I _{BO} = 0V V _{CE} = 80V, I _{BO} = 0V
ON CHARACTERISTICS (Note 2)					
DC Current Gain	h _{FE}	100	—	—	I _C = 10mA, V _{CE} = 1.0V I _C = 100mA, V _{CE} = 1.0V
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	0.25	V	I _C = 100mA, I _B = 10mA
Base- Emitter Saturation Voltage	V _{BE(SAT)}	—	1.2	V	I _C = 100mA, V _{CE} = 1.0V
SMALL SIGNAL CHARACTERISTICS					
Current Gain-Bandwidth Product	f _T	100	—	MHz	V _{CE} = 2.0V, I _C = 10mA, f = 100MHz

Note: 1. Valid provided that terminals are kept at ambient temperature.
2. Pulse test: Pulse width ≤ 300μs, duty cycle ≤ 2%.

MMBTA05 MMBTA06 Typical Characteristics

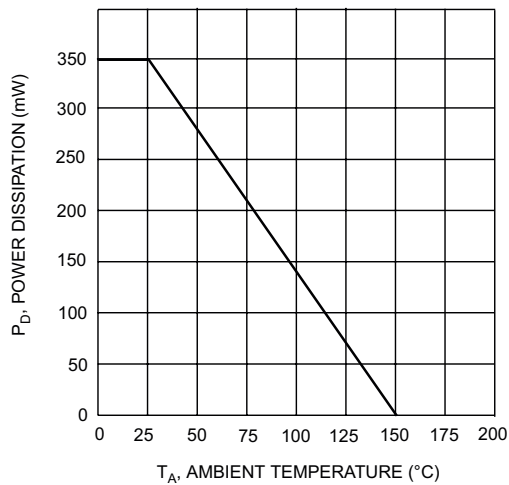


Fig. 1, Max Power Dissipation vs Ambient Temperature

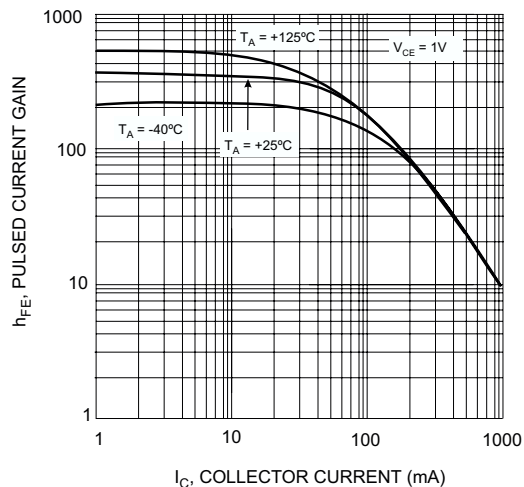


Fig. 2, Typical Pulsed Current Gain vs. Collector Current

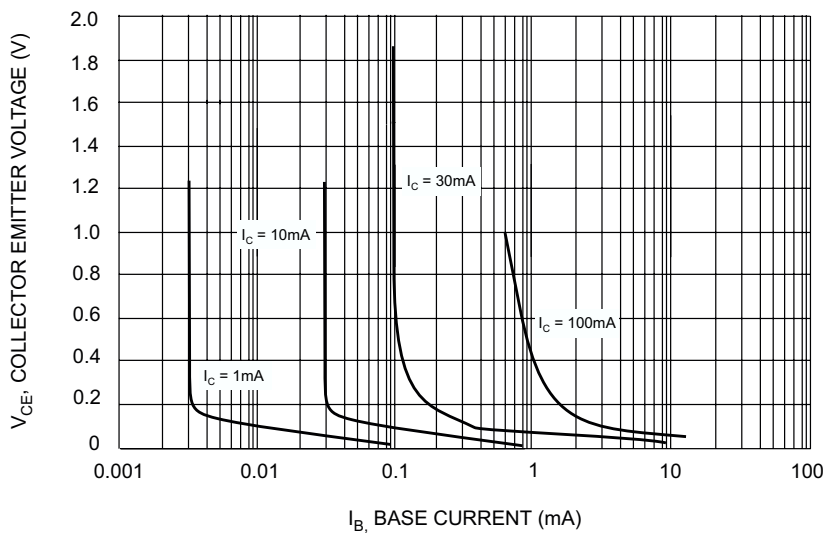


Fig. 3 Typical Collector Saturation Region

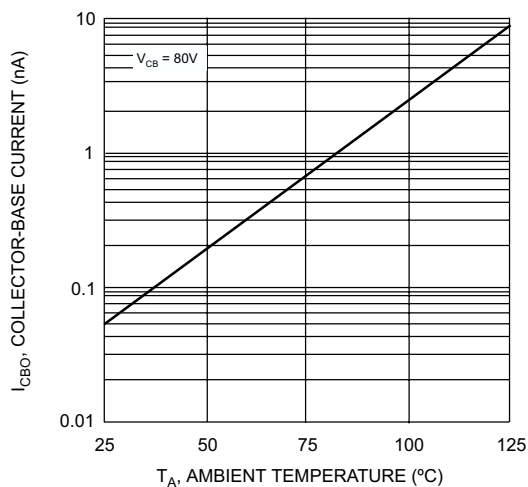


Fig. 4 Typical Collector-Cutoff Current vs. Ambient Temperature