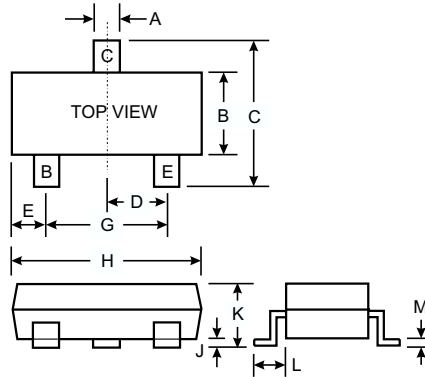


Features

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

Mechanical Data

- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- MMBTA05 Marking: K1G, K1H, R1H
- MMBTA06 Marking: K1G, R1G
- Weight: 0.008 grams (approx.)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.19	1.40
C	2.10	2.50
D	0.89	1.05
E	0.45	0.61
G	1.78	2.05
H	2.65	3.05
J	0.013	0.15
K	0.89	1.10
L	0.45	0.61
M	0.076	0.178
All Dimensions in mm		

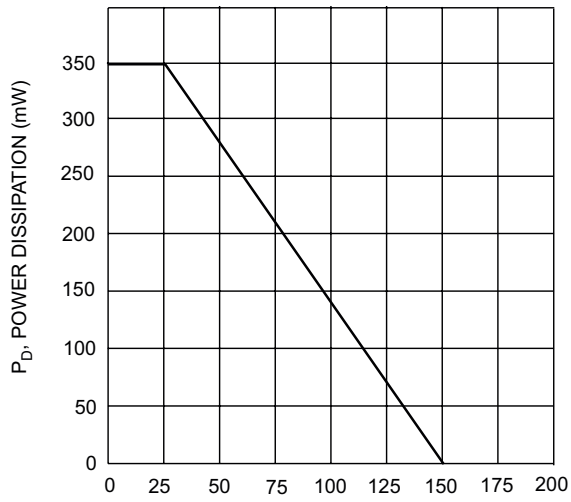
Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	MMBTA05	MMBTA06	Unit
Collector-Base Voltage	V_{CB0}	60	80	V
Collector-Emitter Voltage	V_{CE0}	60	80	V
Emitter-Base Voltage	V_{EB0}	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)	$R_{\theta JA}$	357		K/W
Operating and Storage and Temperature Range	T_J, T_{STG}	-55 to +150		$^\circ\text{C}$

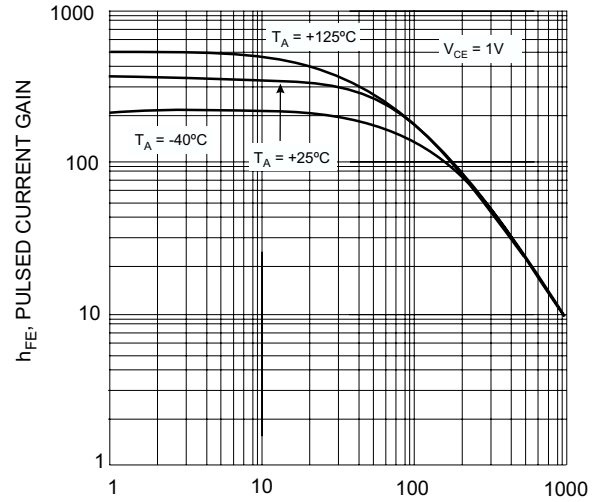
Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)					
Collector-Base Breakdown Voltage	MMBTA05 MMBTA06 $V_{(BR)CBO}$	60 80	—	V	$I_C = 100\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	MMBTA05 MMBTA06 $V_{(BR)CEO}$	60 80	—	V	$I_C = 1.0\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	4.0	—	V	$I_E = 100\mu\text{A}, I_C = 0$
Collector Cutoff Current	MMBTA05 MMBTA06 I_{CBO}	—	100	nA	$V_{CB} = 60\text{V}, I_E = 0$ $V_{CB} = 80\text{V}, I_E = 0$
Collector Cutoff Current	MMBTA05 MMBTA06 I_{CES}	—	100	nA	$V_{CE} = 60\text{V}, I_{B0} = 0\text{V}$ $V_{CE} = 80\text{V}, I_{B0} = 0\text{V}$
ON CHARACTERISTICS (Note 2)					
DC Current Gain	h_{FE}	100	—	—	$I_C = 10\text{mA}, V_{CE} = 1.0\text{V}$ $I_C = 100\text{mA}, V_{CE} = 1.0\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	0.25	V	$I_C = 100\text{mA}, I_B = 10\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	—	1.2	V	$I_C = 100\text{mA}, V_{CE} = 1.0\text{V}$
SMALL SIGNAL CHARACTERISTICS					
Current Gain-Bandwidth Product	f_T	100	—	MHZ	$V_{CE} = 2.0\text{V}, I_C = 10\text{mA}, f = 100\text{MHZ}$

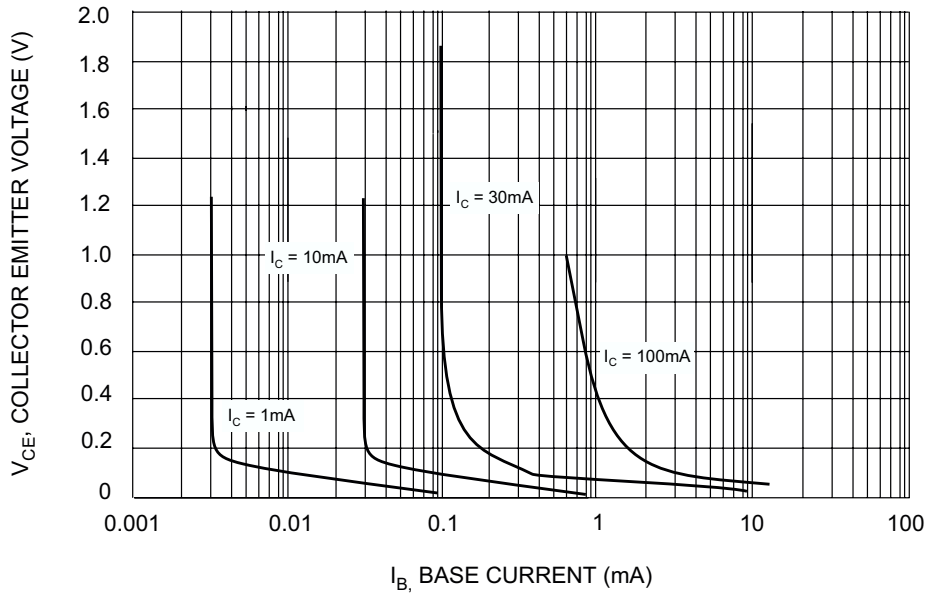
Note: 1. Valid provided that terminals are kept at ambient temperature.
2. Pulse test: Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.



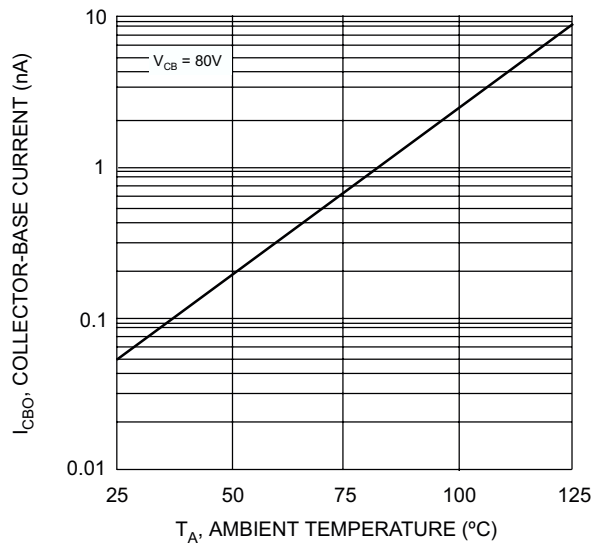
T_A , AMBIENT TEMPERATURE ($^{\circ}\text{C}$)
 Fig. 1, Max Power Dissipation vs Ambient Temperature



I_C , COLLECTOR CURRENT (mA)
 Fig. 2, Typical Pulsed Current Gain vs. Collector Current



I_B , BASE CURRENT (mA)
 Fig. 3 Typical Collector Saturation Region



T_A , AMBIENT TEMPERATURE ($^{\circ}\text{C}$)
 Fig. 4 Typical Collector-Cutoff Current vs. Ambient Temperature