



Micro Commercial Components



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Features

- Halogen free available upon request by adding suffix "-HF"
- Epitaxial Planar Die Construction
- Complementary PNP Types Available (MMBTA55/MMBTA56)
- Ideal for Medium Power Amplification and Switching.
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: MMBTA05:1H/K1H
MMBTA06:1GM/K1G

Maximum Ratings

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage MMBTA05 MMBTA06	60 80	V
V_{CBO}	Collector-Base Voltage MMBTA05 MMBTA06	60 80	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Collector Current-Continuous	500	mA
P_D	Power Dissipation*	300	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	K/W
T_J	Operating Junction Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
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OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=1.0\text{mA}$, $I_B=0$) MMBTA05 MMBTA06	60 80	---	Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=100\mu\text{A}$, $I_C=0$)	4.0	---	Vdc
I_{CBO}	Collector Cutoff Current ($V_{CB}=60\text{Vdc}$, $I_E=0$) MMBTA05 ($V_{CB}=80\text{Vdc}$, $I_E=0$) MMBTA06	---	0.1 0.1	μA μA
I_{CES}	Emitter Cutoff Current ($V_{CE}=60\text{Vdc}$, $I_B=0$) MMBTA05 ($V_{CE}=80\text{Vdc}$, $I_B=0$) MMBTA06	---	0.1 0.1	μA μA

ON CHARACTERISTICS

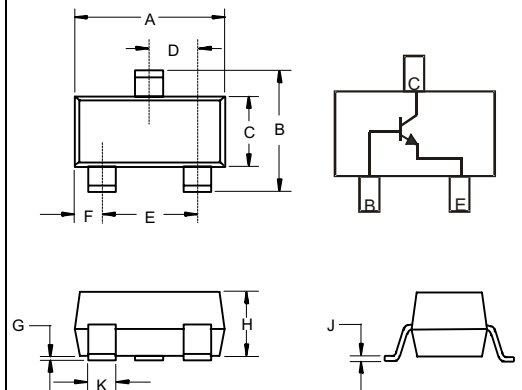
h_{FE}	DC Current Gain ($V_{CE}=1.0\text{Vdc}$, $I_C=10\text{mA}$) ($V_{CE}=1.0\text{Vdc}$, $I_C=100\text{mA}$)	100 100	---	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=100\text{mA}$, $I_B=10\text{mA}$)	---	0.25	Vdc
$V_{BE(on)}$	Base-Emitter On Voltage ($I_C=100\text{mA}$, $I_B=10\text{mA}$)	---	1.2	Vdc
f_T	Current-Gain—Bandwidth Product ($I_C=10\text{mA}$, $V_{CE}=2.0\text{Vdc}$, $f=100\text{MHz}$)	100	---	MHz

* Valid provided that terminals are kept at ambient temperature..

MMBTA05 THRU MMBTA06

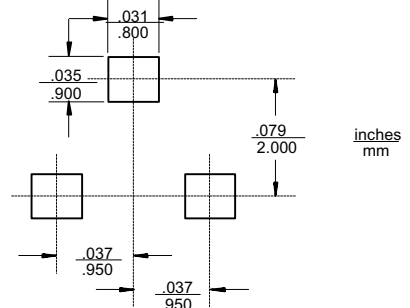
NPN Small Signal General Purpose Amplifier Transistors

SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

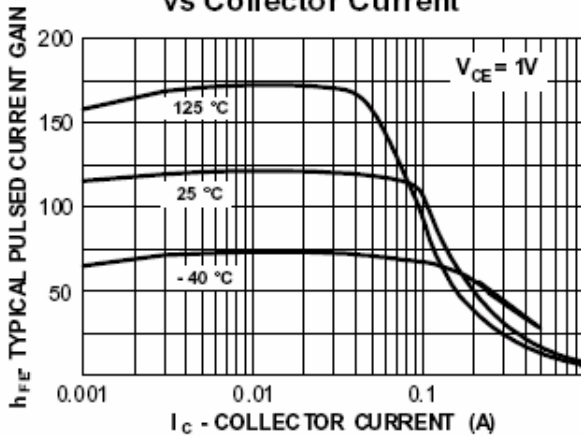
Suggested Solder Pad Layout



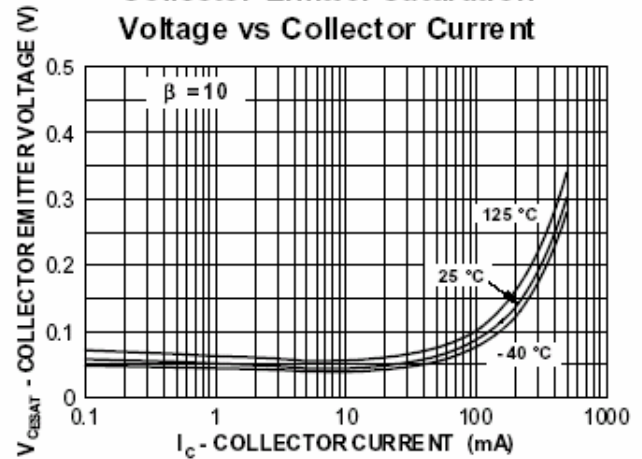
MMBTA05

Typical Characteristics

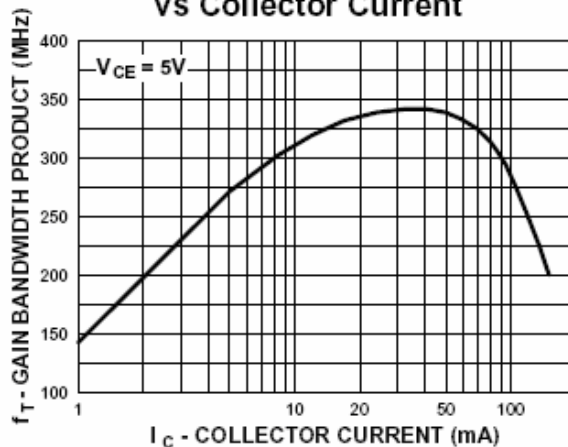
Typical Pulsed Current Gain
vs Collector Current



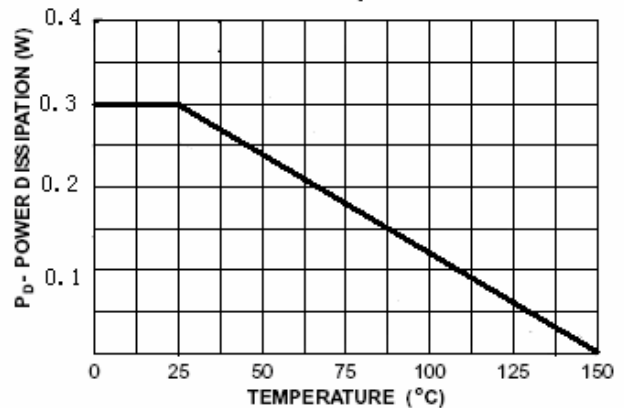
Collector-Emitter Saturation
Voltage vs Collector Current



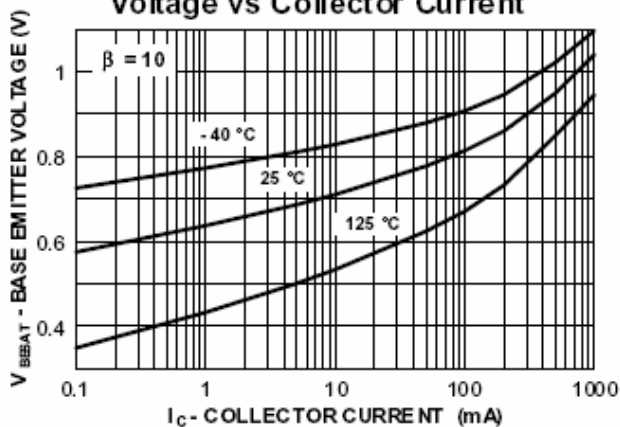
Gain Bandwidth Product
vs Collector Current



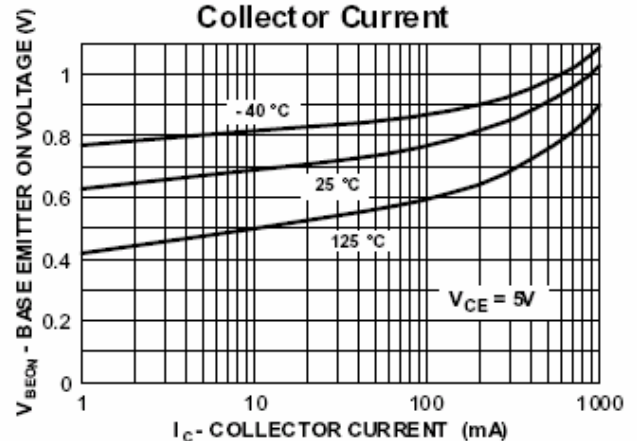
Power Dissipation vs
Ambient Temperature



Base-Emitter Saturation
Voltage vs Collector Current



Base Emitter ON Voltage vs
Collector Current



MMBTA06

Typical characteristics

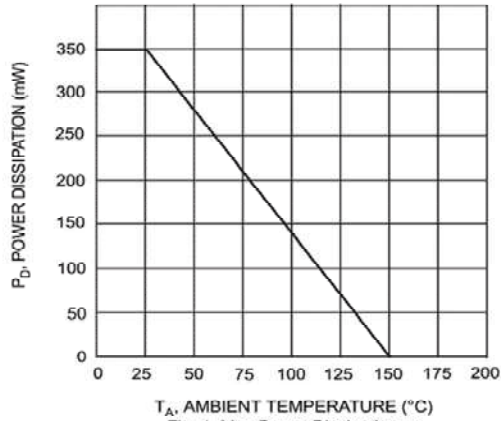


Fig. 1, Max Power Dissipation vs Ambient Temperature

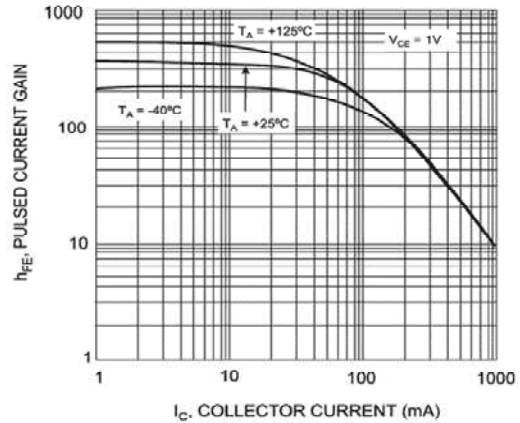


Fig. 2, Typical Pulsed Current Gain vs. Collector Current

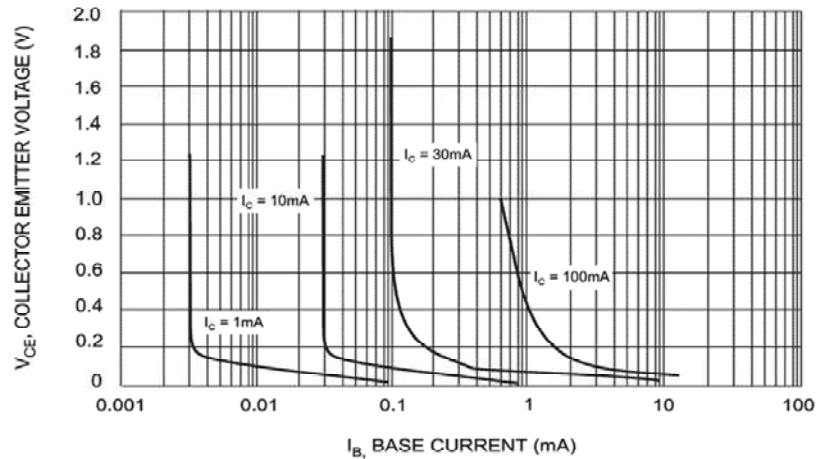


Fig. 3 Typical Collector Saturation Region

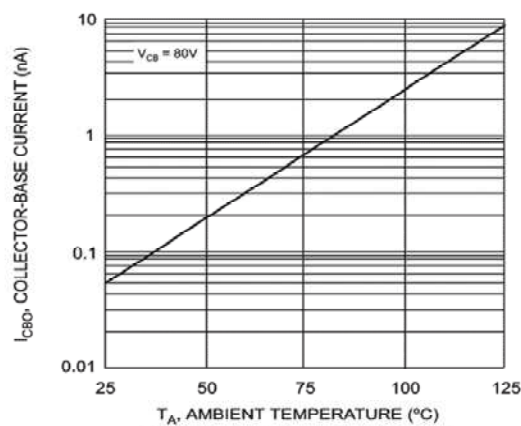


Fig. 4 Typical Collector-Cutoff Current vs. Ambient Temperature

Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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