



Micro Commercial Components

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MMBTA55 THRU MMBTA56

PNP General Purpose Amplifier

Features

- This device is designed for general purpose amplifier applications at collector current to 300mA
- Marking : MMBTA55=2H/B55, MMBTA56=2GM/B56
- Case Material:Molded Plastic. UL Flammability Classificatio Rating 94-0 and MSL Rating 1

Maximum Ratings

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage MMBTA55 MMBTA56	60 80	V
V_{CBO}	Collector-Base Voltage MMBTA55 MMBTA56	60 80	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Collector Current, Continuous	500	mA
T_J	Operating Junction Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Thermal Characteristics

Symbol	Rating	Max	Unit
P_D	Total Device Dissipation* Derate above 25°C	225 1.8	mW mW/°C
R_{JA}	Thermal Resistance, Junction to Ambient	556	°C/W

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 ⁽¹⁾ ($I_C=1.0mA$, $I_B=0$) MMBTA55 MMBTA56	60 80	---	Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=100\mu A$, $I_C=0$)	4.0	---	Vdc
I_{CBO}	Collector Cutoff Current ($V_{CB}=60Vdc$, $I_E=0$) MMBTA55 ($V_{CB}=80Vdc$, $I_E=0$) MMBTA56	---	0.1 0.1	μA μA
I_{CES}	Emitter Cutoff Current ($V_{CE}=60Vdc$, $I_B=0$)	---	0.1	μA

ON CHARACTERISTICS

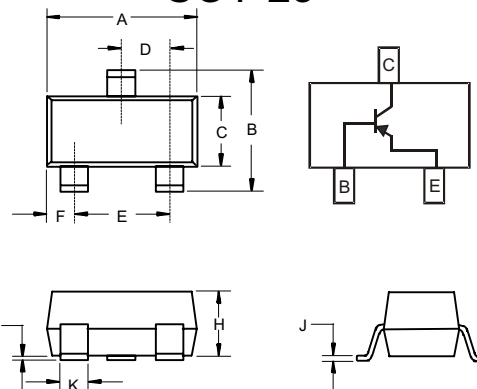
h_{FE}	DC Current Gain ($V_{CE}=1.0Vdc$, $I_C=10mA$) ($V_{CE}=1.0Vdc$, $I_C=100mA$)	100 100	---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=100mA$, $I_B=10mA$)	---	0.25	Vdc
$V_{BE(on)}$	Base-Emitter On Voltage ($I_C=100mA$, $V_{CE}=1.0Vdc$)	---	1.2	Vdc
f_T	Current-Gain—Bandwidth Product ⁽²⁾ ($I_C=100mA$, $V_{CE}=1.0Vdc$, $f=100MHz$)	50	---	MHz

* FR-5=1.0 X 0.75 X 0.062 in.

1. Pulse Test: Pulse Width<300us, Duty Cycle<2.0%

2. Alumina=0.4 X 0.3 X 0.024 in. 99.5% alumina.

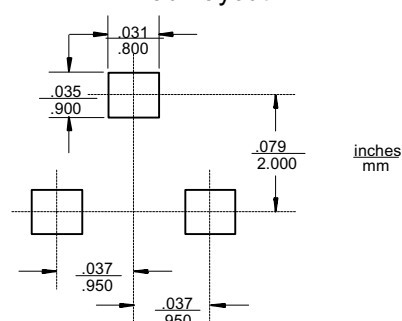
SOT-23



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.098	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



MMBTA55 thru MMBTA56

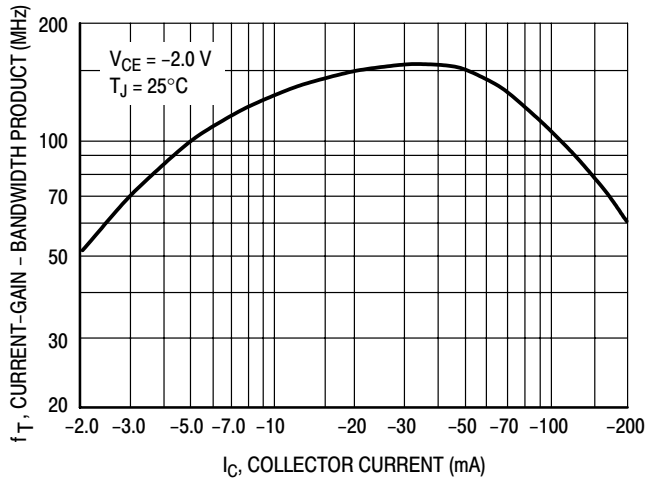


Figure 2. Current-Gain — Bandwidth Product

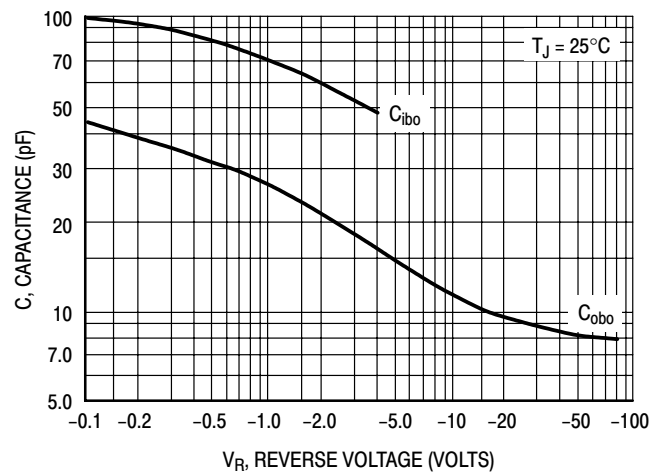


Figure 3. Capacitance

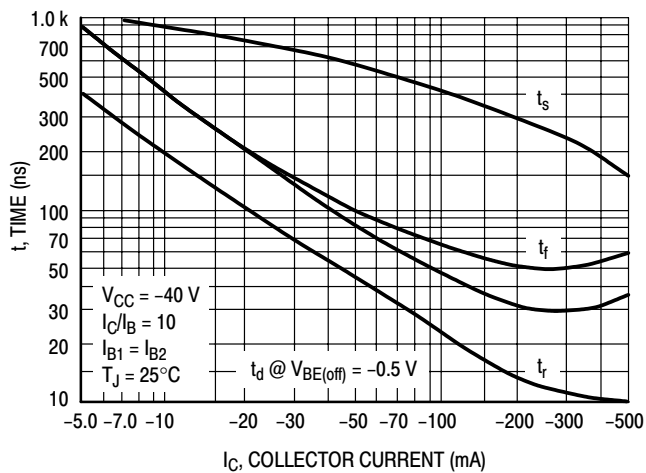


Figure 4. Switching Time

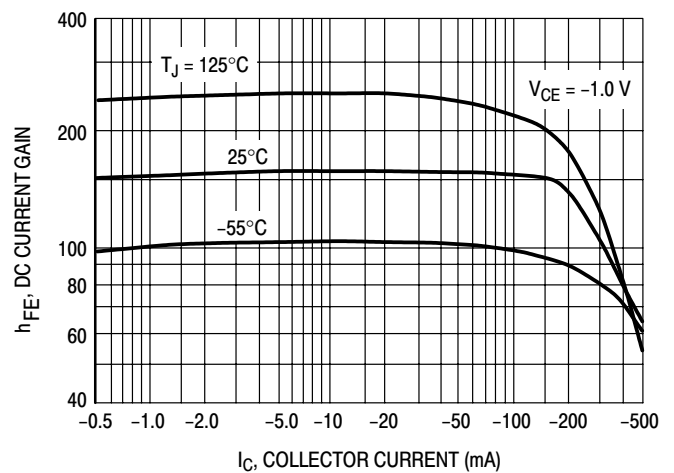


Figure 5. DC Current Gain

MMBTA55 thru MMBTA56

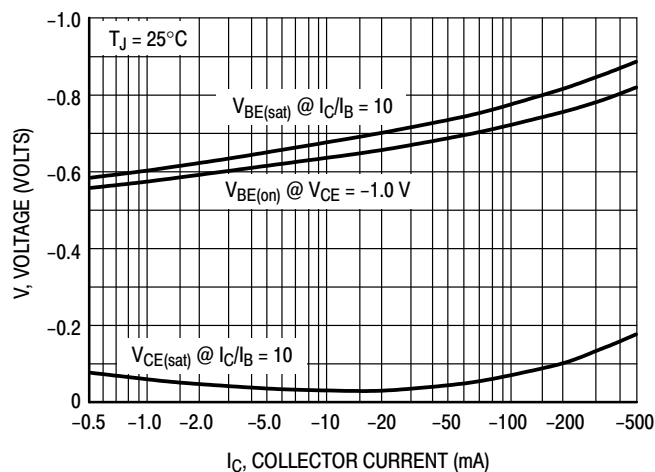


Figure 6. "ON" Voltages

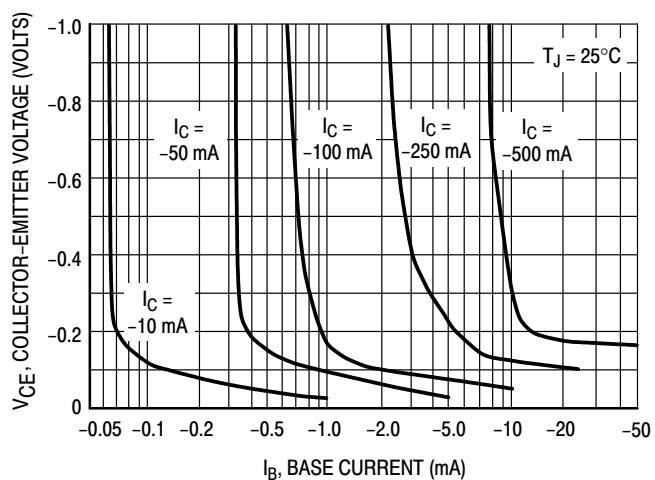


Figure 7. Collector Saturation Region

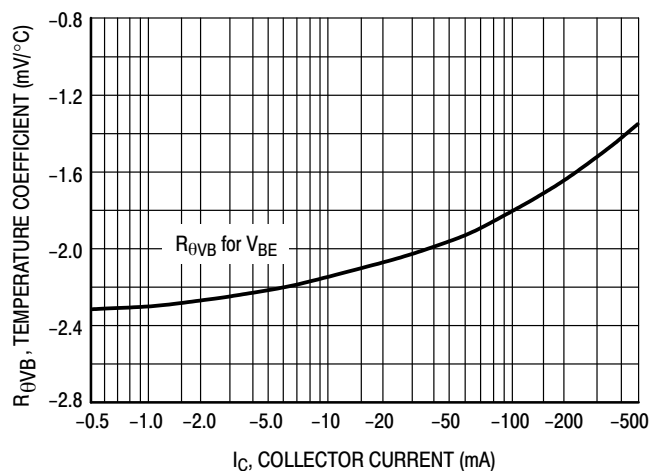


Figure 8. Base-Emitter Temperature Coefficient

Ordering Information

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

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