



Micro Commercial Components



Micro Commercial Components  
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# MMBTA55 THRU MMBTA56

## PNP General Purpose Amplifier

### Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- This device is designed for general purpose amplifier applications at collector current to 300mA
- Markin : MMBTA55=2H/B55, MMBTA56=2GM/B56
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

### Maximum Ratings

Symbol	Rating	Rating	Unit
$V_{CEO}$	Collector-Emitter Voltage	MMBTA55	60
		MMBTA56	80
$V_{CBO}$	Collector-Base Voltage	MMBTA55	60
		MMBTA56	80
$V_{EBO}$	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	mW
		1.8	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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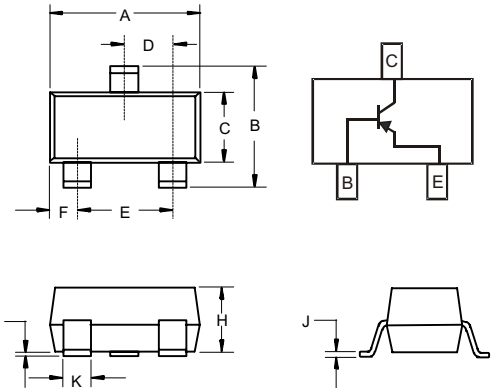
### OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage <sup>(1)</sup> ( $I_C=1.0mA$ , $I_B=0$ )	MMBTA55	60	---	Vdc
		MMBTA56	80	---	
$V_{(BR)EBO}$	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	---	0.1	$\mu A$
		MMBTA56	---	0.1	$\mu A$
$I_{CES}$	Emitter Cutoff Current ( $V_{CE}=60Vdc$ , $I_B=0$ )		---	0.1	$\mu A$

### 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 <sup>(2)</sup> ( $I_C=100mA$ , $V_{CE}=1.0Vdc$ , $f=100MHz$ )	50	---	MHz

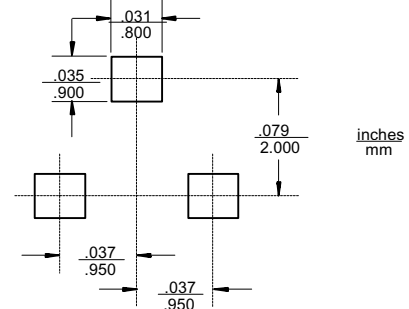
### SOT-23



### DIMENSIONS

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



# MMBTA55 thru MMBTA56

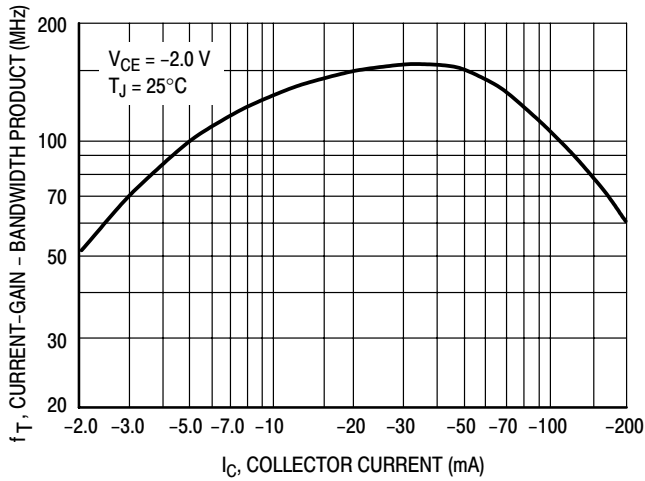


Figure 2. Current-Gain — Bandwidth Product

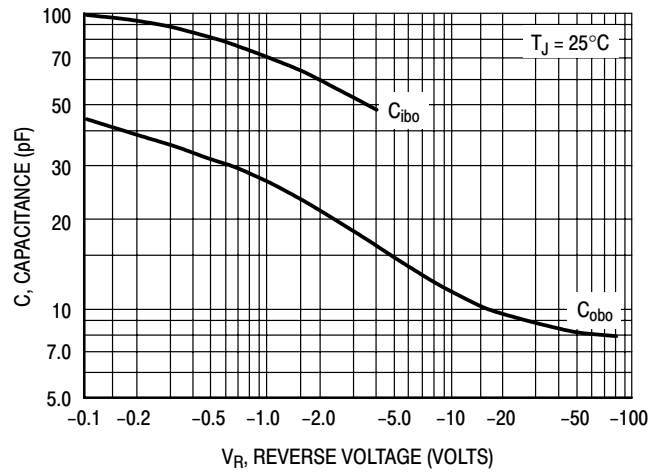


Figure 3. Capacitance

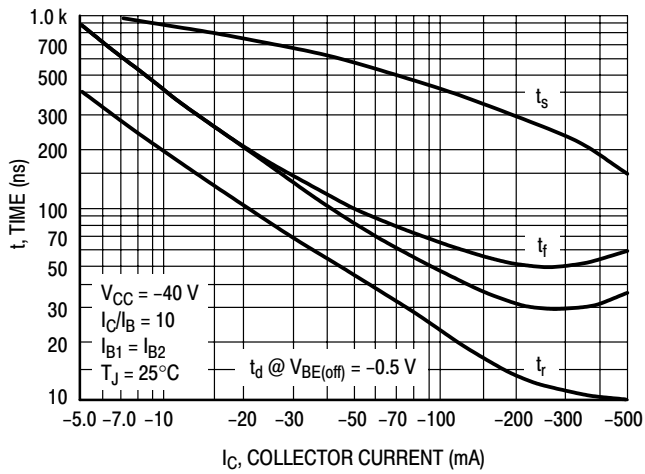


Figure 4. Switching Time

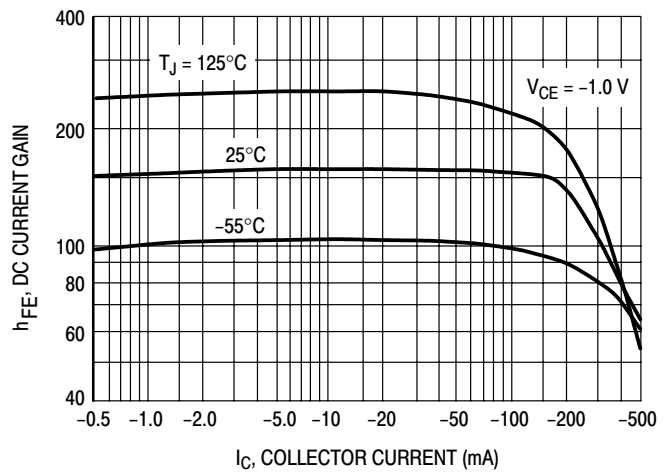


Figure 5. DC Current Gain

# MMBTA55 thru MMBTA56

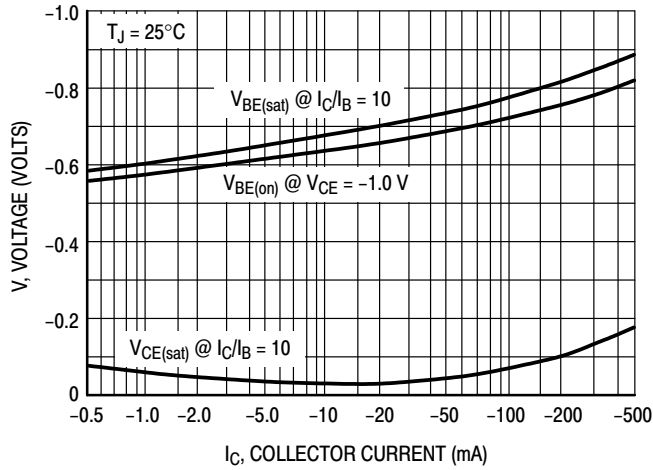


Figure 6. "ON" Voltages

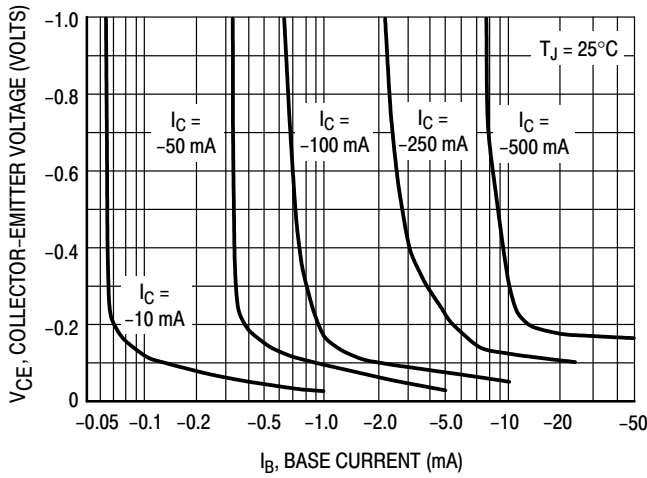


Figure 7. Collector Saturation Region

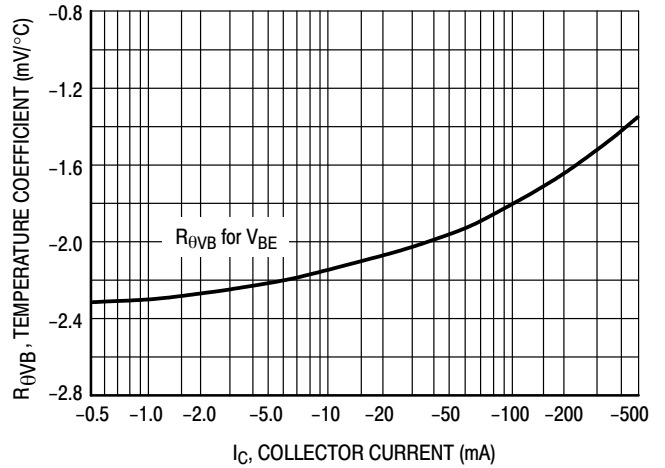


Figure 8. Base-Emitter Temperature Coefficient



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### Ordering Information :

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

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

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