



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 |
|--------|-----------|-----|-----|-------|
|--------|-----------|-----|-----|-------|

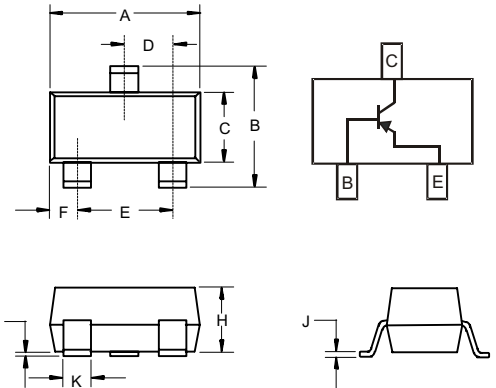
OFF CHARACTERISTICS

| | | | | | |
|----------------------|--|---------|-----|-----|------|
| V _{(BR)CEO} | Collector-Emitter Breakdown Voltage ⁽¹⁾ (I _C =1.0mA, I _B =0) | MMBTA55 | 60 | --- | Vdc |
| | | MMBTA56 | 80 | --- | |
| V _{(BR)EBO} | Emitter-Base Breakdown Voltage (I _E =100mA, I _C =0) | | 4.0 | --- | Vdc |
| I _{CBO} | Collector Cutoff Current (V _{CB} =60Vdc, I _E =0) | MMBTA55 | --- | 0.1 | uAdc |
| | | MMBTA56 | --- | 0.1 | |
| I _{CES} | Emitter Cutoff Current (V _{CE} =60Vdc, I _B =0) | | --- | 0.1 | uAdc |

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 |

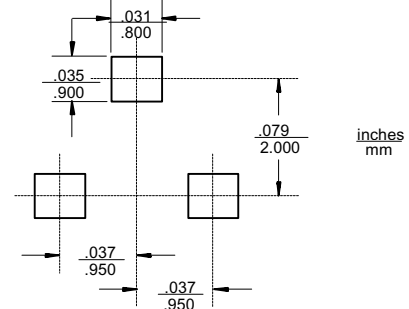
SOT-23



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

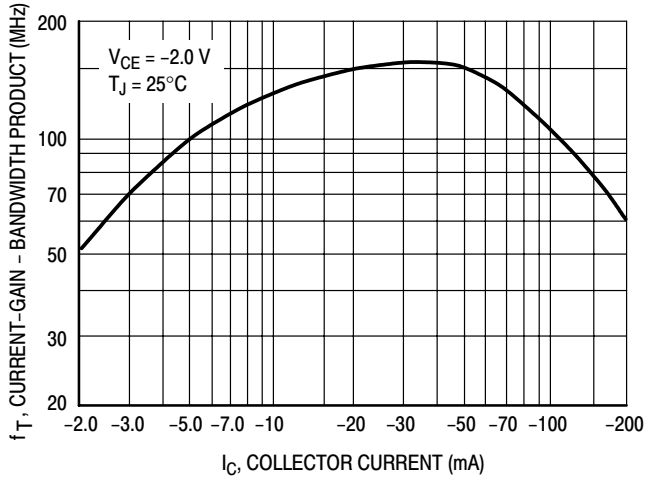


Figure 2. Current-Gain — Bandwidth Product

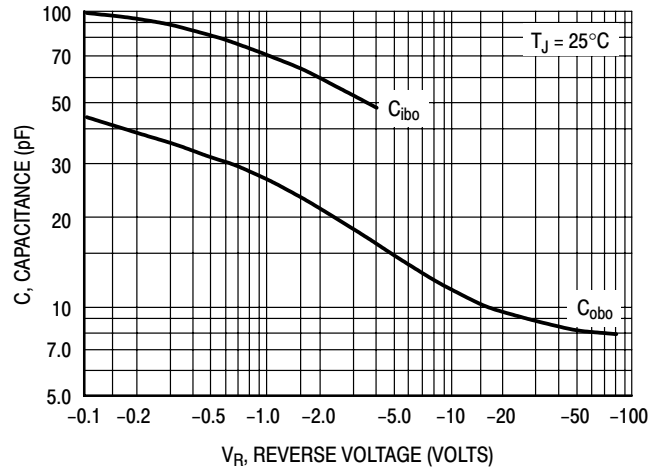


Figure 3. Capacitance

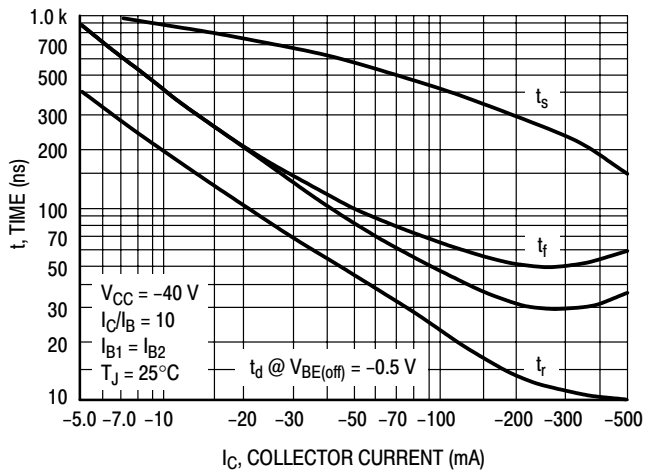


Figure 4. Switching Time

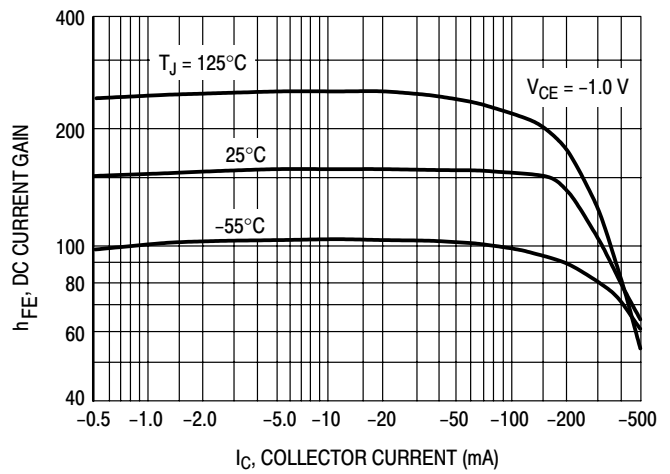


Figure 5. DC Current Gain

MMBTA55 thru MMBTA56

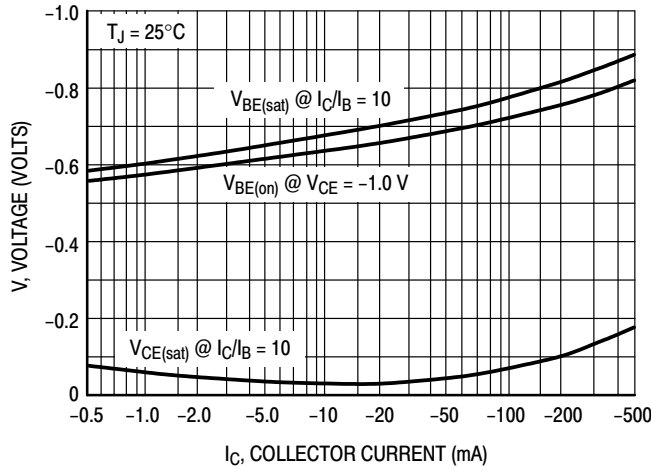


Figure 6. "ON" Voltages

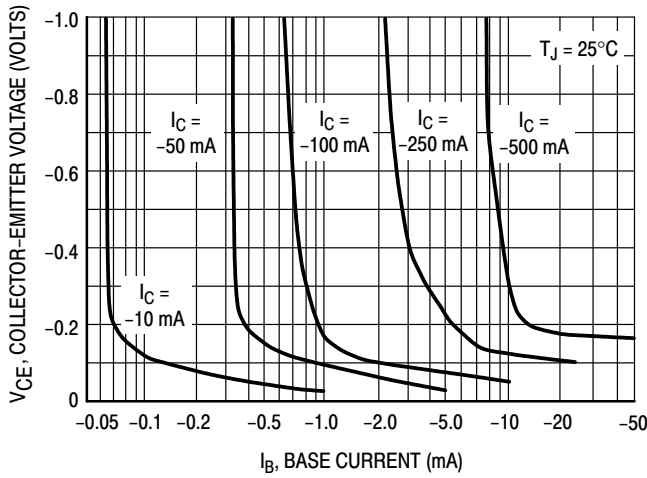


Figure 7. Collector Saturation Region

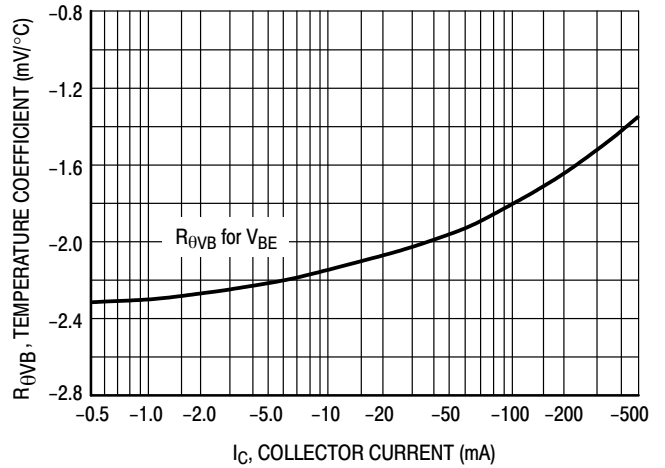


Figure 8. Base-Emitter Temperature Coefficient



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Ordering Information :

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

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

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