



Micro Commercial Components

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MMBT4403

Features

- Operating and Storage Junction Temperatures: -55°C to 150°C
- Capable of 350mWatts of Power Dissipation
- Surface Mount SOT-23 Package
- $I_C = -600\text{mA}$
- Case Material: Molded Plastic. UL Flammability Classificatio Rating 94-0 and MSL Rating 1
- Marking: 2T/M3A

PNP General Purpose Amplifier

Electrical Characteristics @ 25°C Unless Otherwise Specified

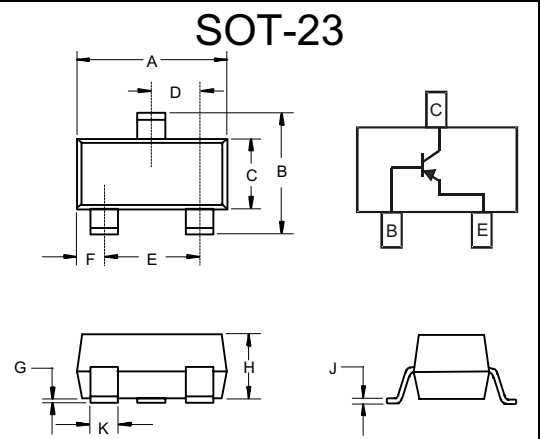
| Symbol | Parameter | Min | Max | Units |
|----------------------------|--|-----|-----|---------------|
| OFF CHARACTERISTICS | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage* ($I_C = 1.0\text{mA}$, $I_B = 0$) | 40 | | Vdc |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage ($I_C = 100\mu\text{A}$, $I_E = 0$) | 40 | | Vdc |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage ($I_E = 100\mu\text{A}$, $I_C = 0$) | 5.0 | | Vdc |
| I_{BL} | Base Cutoff Current ($V_{CE} = 30\text{Vdc}$, $V_{BE} = 3.0\text{Vdc}$) | | 0.1 | μA |
| I_{CEX} | Collector Cutoff Current ($V_{CE} = 30\text{Vdc}$, $V_{BE} = 3.0\text{Vdc}$) | | 0.1 | μA |

| ON CHARACTERISTICS | | | | |
|---------------------------|--|------------------------------|--------------|-----|
| h_{FE} | DC Current Gain* ($I_C = 0.1\text{mA}$, $V_{CE} = 1.0\text{Vdc}$) ($I_C = 1.0\text{mA}$, $V_{CE} = 1.0\text{Vdc}$) ($I_C = 10\text{mA}$, $V_{CE} = 1.0\text{Vdc}$) ($I_C = 150\text{mA}$, $V_{CE} = 2.0\text{Vdc}$) ($I_C = 500\text{mA}$, $V_{CE} = 2.0\text{Vdc}$) | 30 60 100 100 20 | 300 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage ($I_C = 150\text{mA}$, $I_B = 15\text{mA}$) ($I_C = 500\text{mA}$, $I_B = 50\text{mA}$) | | 0.4 0.75 | Vdc |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage ($I_C = 150\text{mA}$, $I_B = 15\text{mA}$) ($I_C = 500\text{mA}$, $I_B = 50\text{mA}$) | 0.75 | 0.95 1.30 | Vdc |

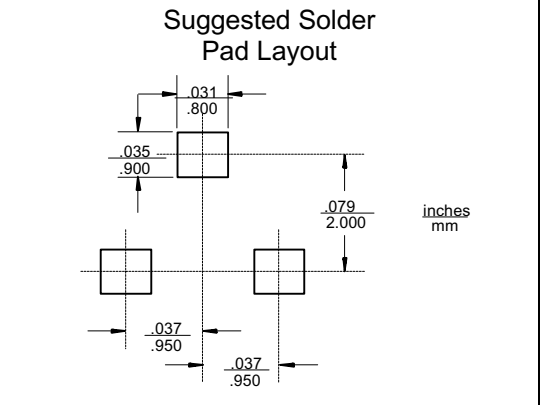
| SMALL-SIGNAL CHARACTERISTICS | | | | |
|-------------------------------------|---|-----|------|-----|
| f_T | Current Gain-Bandwidth Product ($I_C = 20\text{mA}$, $V_{CE} = 10\text{Vdc}$, $f = 100\text{MHz}$) | 200 | | MHz |
| C_{cb} | Output Capacitance ($V_{CB} = 10\text{Vdc}$, $I_E = 0$, $f = 1.0\text{MHz}$) | | 8.5 | pF |
| C_{eb} | Input Capacitance ($V_{EB} = 0.5\text{Vdc}$, $I_C = 0$, $f = 1.0\text{MHz}$) | | 30.0 | pF |

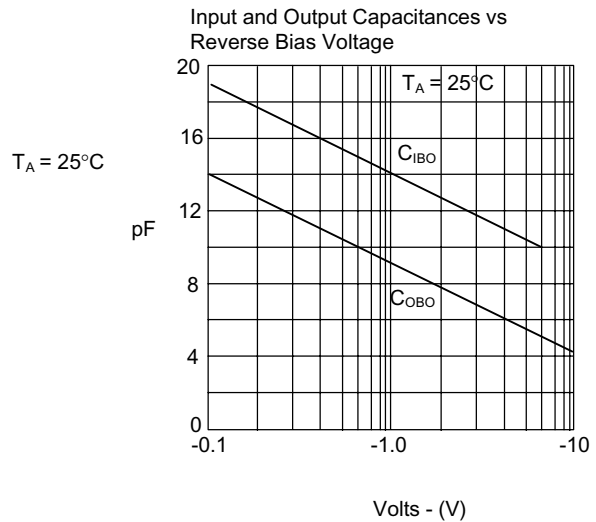
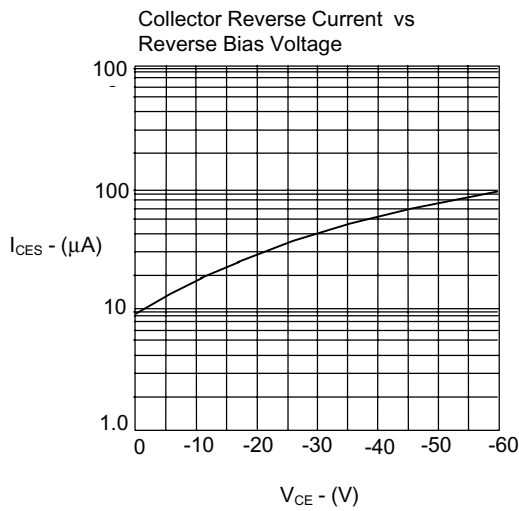
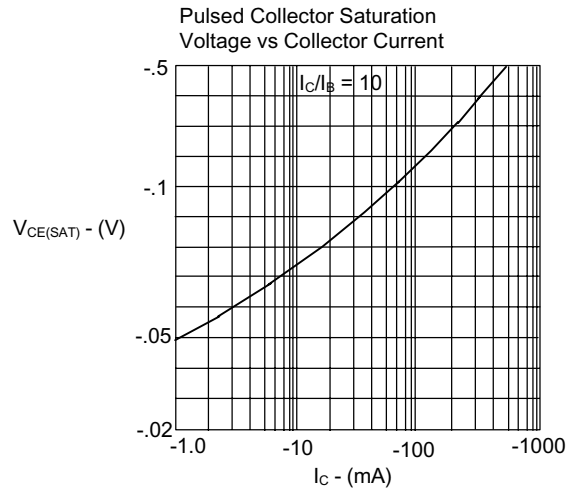
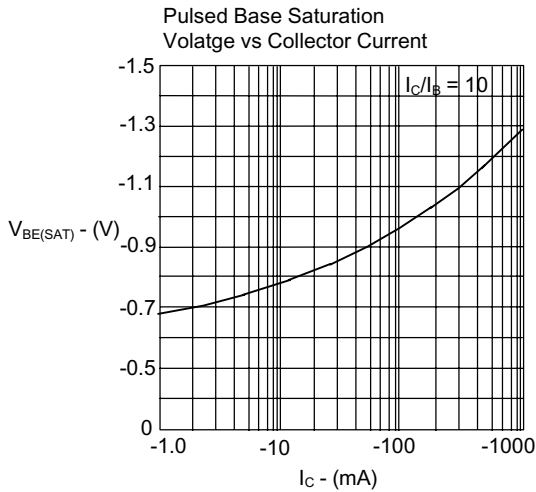
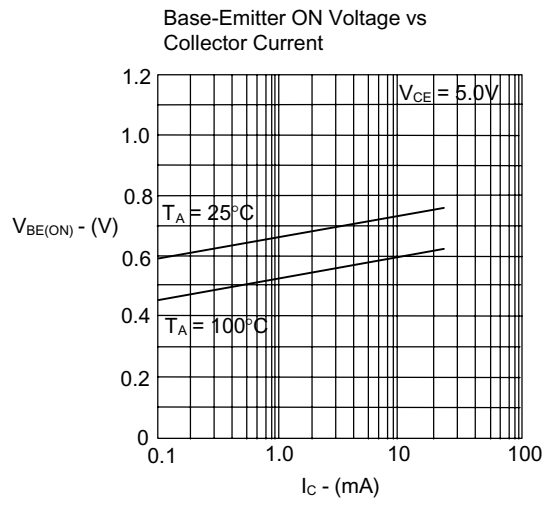
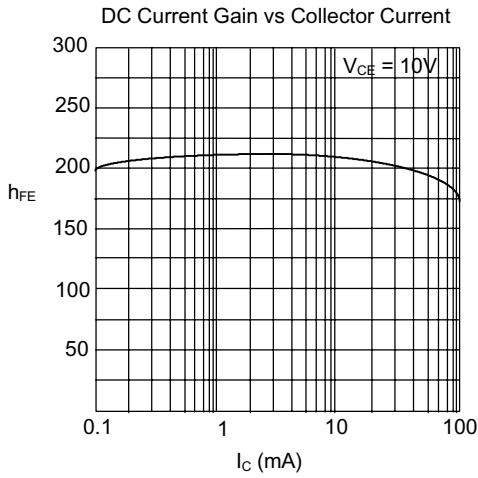
| SWITCHING CHARACTERISTICS | | | | |
|----------------------------------|--------------|---|-----|----|
| t_d | Delay Time | ($V_{CC} = 3.0\text{Vdc}$, $V_{BE} = 2.0\text{Vdc}$) | 15 | ns |
| t_r | Rise Time | $I_C = 150\text{mA}$, $I_{B1} = 15\text{mA}$ | 20 | ns |
| t_s | Storage Time | ($V_{CC} = 3.0\text{Vdc}$, $I_C = 150\text{mA}$) | 225 | ns |
| t_f | Fall Time | $I_{B1} = I_{B2} = 15\text{mA}$ | 30 | ns |

*Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$



| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|-------|------|------|------|
| | INCHES | | MM | | |
| 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 | |

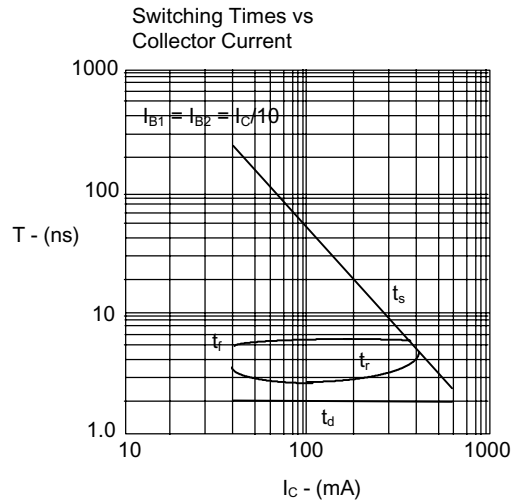
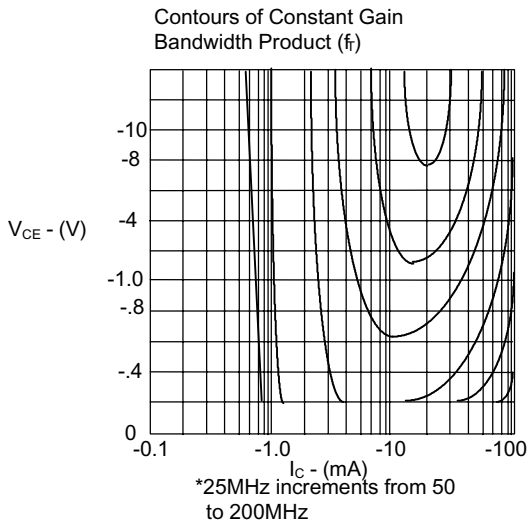
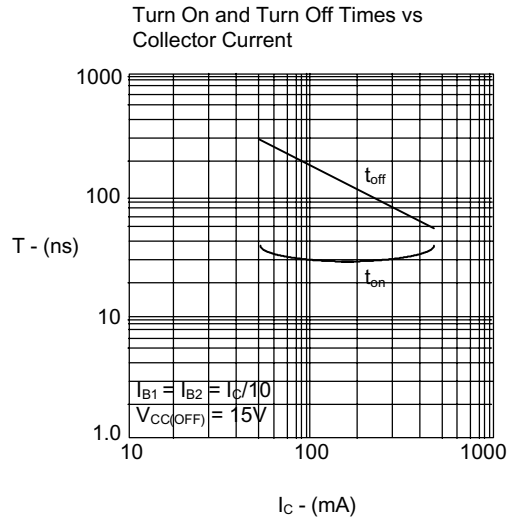
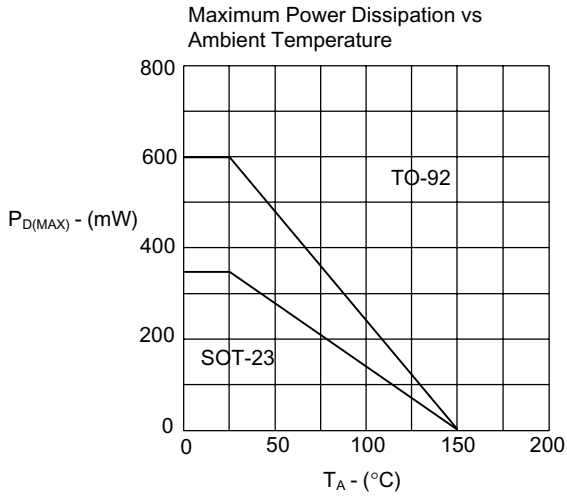




MMBT4403



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Ordering Information

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

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