



Micro Commercial Components

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MMBT4401

Features

- Surface Mount SOT-23 Package
- Capable of 350mWatts of Power Dissipation
- Operating and Storage Junction Temperatures: -55°C to 150°C
- $I_C=600mA$
- Marking: 2X/M4A
- Case Material: Molded Plastic. UL Flammability Classificatio Rating 94-0 and MSL Rating 1

NPN General Purpose Amplifier

Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Max | Units |
|----------------------------|---|-----|-----|------------|
| OFF CHARACTERISTICS | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage* ($I_C=1.0mA$, $I_B=0$) | 40 | | Vdc |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage ($I_C=10mA$, $I_E=0$) | 60 | | Vdc |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage ($I_E=0.1mA$, $I_C=0$) | 6.0 | | Vdc |
| I_{BL} | Base Cutoff Current ($V_{CE}=35Vdc$, $V_{BE}=0.4Vdc$) | | 0.1 | μA dc |
| I_{CEX} | Collector Cutoff Current ($V_{CE}=35Vdc$, $V_{BE}=0.4Vdc$) | | 0.1 | μA dc |

ON CHARACTERISTICS

| | | | | |
|---------------|--|------|-------------|-----|
| h_{FE} | DC Current Gain* ($I_C=0.1mA$, $V_{CE}=1.0Vdc$) ($I_C=1.0mA$, $V_{CE}=1.0Vdc$) ($I_C=10mA$, $V_{CE}=1.0Vdc$) ($I_C=150mA$, $V_{CE}=1.0Vdc$) ($I_C=500mA$, $V_{CE}=1.0Vdc$) | 20 | | |
| | | 40 | | |
| | | 80 | 300 | |
| | | 40 | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage ($I_C=150mA$, $I_B=15mA$) ($I_C=500mA$, $I_B=50mA$) | | 0.4 0.75 | Vdc |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage ($I_C=150mA$, $I_B=15mA$) ($I_C=500mA$, $I_B=50mA$) | 0.75 | 0.95 1.2 | Vdc |

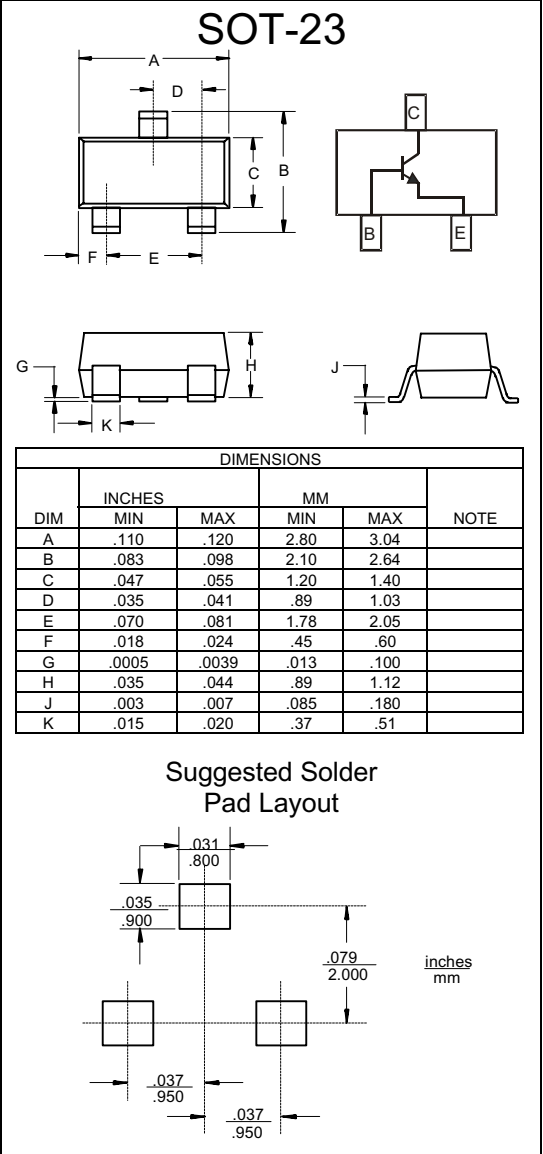
SMALL-SIGNAL CHARACTERISTICS

| | | | | |
|----------|--|-----|------|-----|
| f_T | Current Gain-Bandwidth Product ($I_C=20mA$, $V_{CE}=10Vdc$, $f=100MHz$) | 250 | | MHz |
| C_{cb} | Collector-Base Capacitance ($V_{CB}=5.0Vdc$, $I_E=0$, $f=1.0MHz$) | | 6.5 | pF |
| C_{eb} | Emitter-Base Capacitance ($V_{BE}=0.5Vdc$, $I_C=0$, $f=1.0MHz$) | | 30.0 | pF |

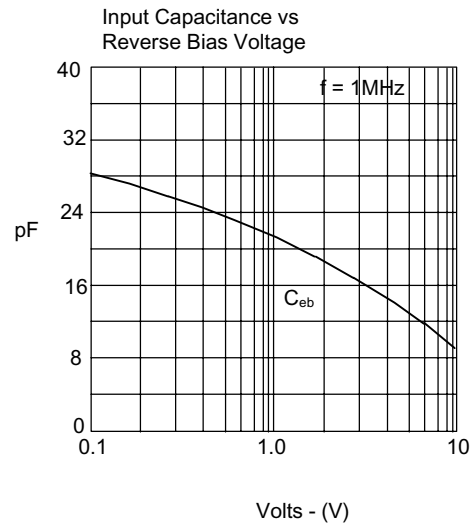
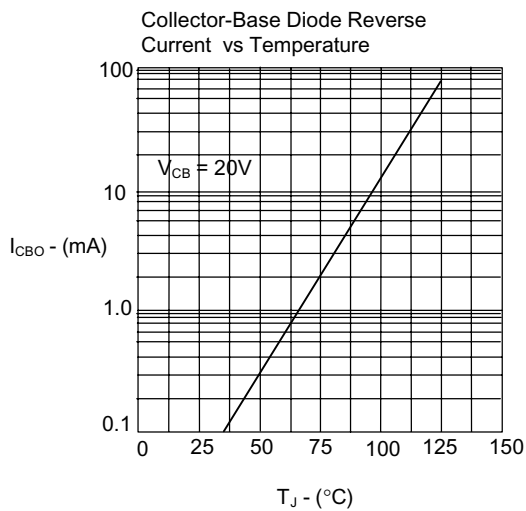
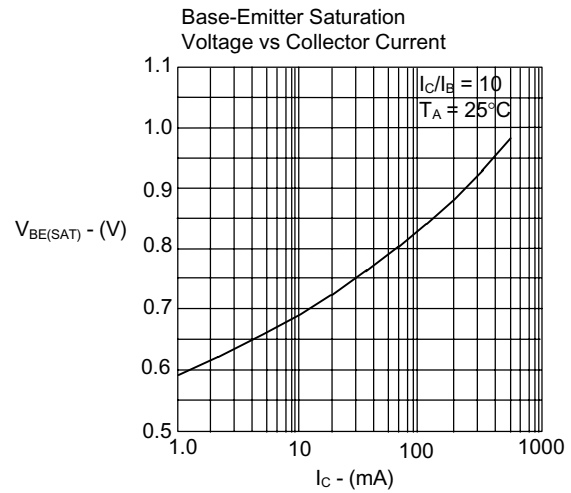
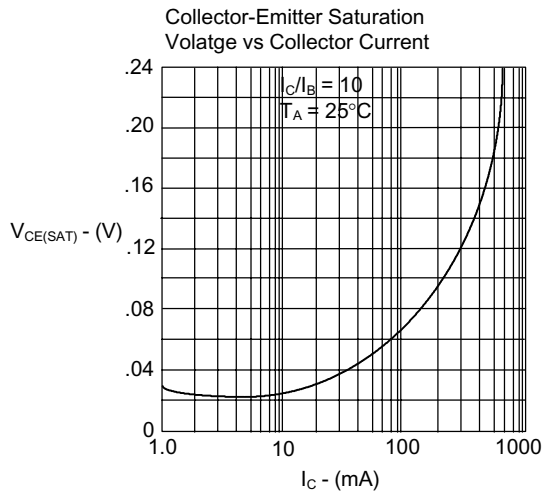
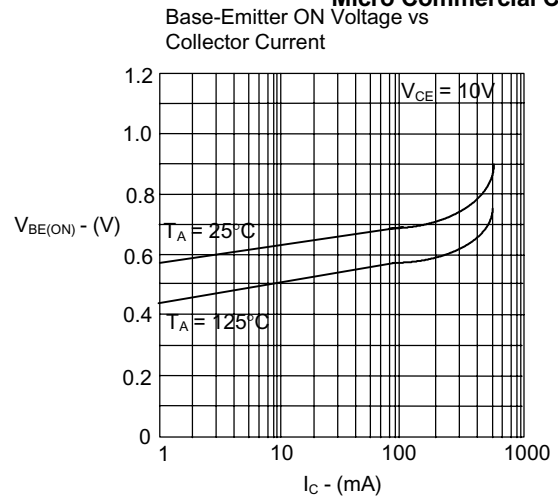
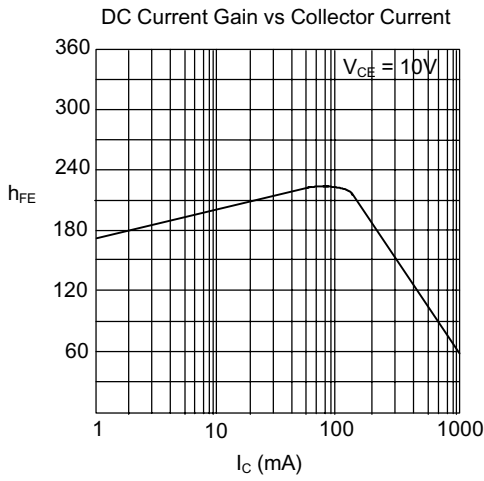
SWITCHING CHARACTERISTICS

| | | | | |
|-------|--------------|--------------------------------------|-----|----|
| t_d | Delay Time | ($V_{CC}=30Vdc$, $V_{BE}=0.2Vdc$) | 15 | ns |
| t_r | Rise Time | ($I_C=150mA$, $I_{B1}=15mA$) | 20 | ns |
| t_s | Storage Time | ($V_{CC}=30Vdc$, $I_C=150mA$) | 225 | ns |
| t_f | Fall Time | ($I_{B1}=I_{B2}=15mA$) | 30 | ns |

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



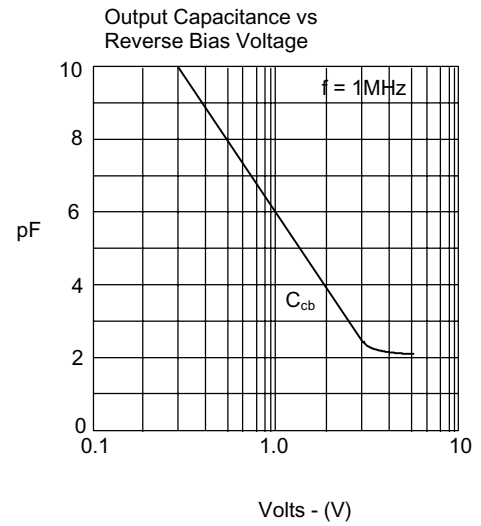
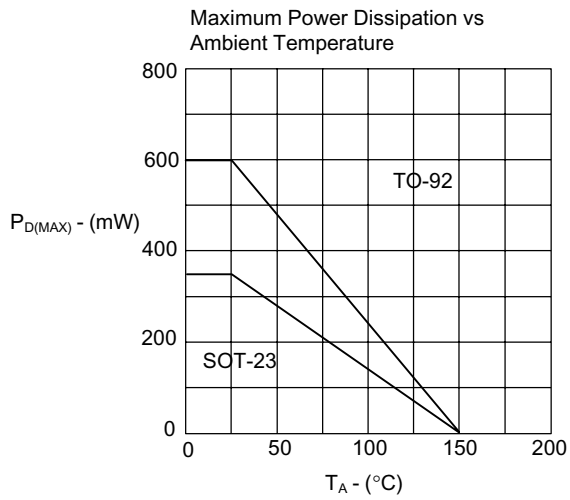
www.mccsemi.com



MMBT4401



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Ordering Information

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

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