



Micro Commercial Components



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MMBT2222AT

NPN General Purpose Amplifier

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Capable of 150mWatts of Power Dissipation
- Operating and Storage Junction Temperatures -55°C to 150°C
- Collector Current: 0.6A
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: 1P

Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Max | Units |
|----------------------------|---|-----|-----|-------|
| OFF CHARACTERISTICS | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage* ($I_C=10\text{mAdc}$, $I_B=0$) | 40 | | Vdc |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage ($I_C=10\mu\text{Adc}$, $I_E=0$) | 75 | | Vdc |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage ($I_E=10\mu\text{Adc}$, $I_C=0$) | 6.0 | | Vdc |
| I_{CBO} | Collector Cut-off Current ($V_{CB}=70\text{Vdc}$, $I_E=0$) | | 100 | nAdc |
| I_{CEO} | Collector Cutoff Current ($V_{CE}=35\text{Vdc}$, $I_B=0$) | | 100 | nAdc |
| I_{EBO} | Emitter Cut-off Current ($V_{EB}=3\text{Vdc}$, $I_C=0$) | | 100 | nAdc |

ON CHARACTERISTICS

| | | | | |
|---------------|---|-----------------------------------|------------|-----|
| h_{FE} | DC Current Gain* ($I_C=0.1\text{mAdc}$, $V_{CE}=10\text{Vdc}$) ($I_C=1.0\text{mAdc}$, $V_{CE}=10\text{Vdc}$) ($I_C=10\text{mAdc}$, $V_{CE}=10\text{Vdc}$) ($I_C=150\text{mAdc}$, $V_{CE}=10\text{Vdc}$) ($I_C=150\text{mAdc}$, $V_{CE}=10\text{Vdc}$) ($I_C=500\text{mAdc}$, $V_{CE}=10\text{Vdc}$) | 35 50 75 100 50 40 | 300 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage ($I_C=150\text{mAdc}$, $I_B=15\text{mAdc}$) ($I_C=500\text{mAdc}$, $I_B=50\text{mAdc}$) | | 0.3 1.0 | Vdc |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage ($I_C=150\text{mAdc}$, $I_B=15\text{mAdc}$) ($I_C=500\text{mAdc}$, $I_B=50\text{mAdc}$) | | 1.2 2.0 | Vdc |

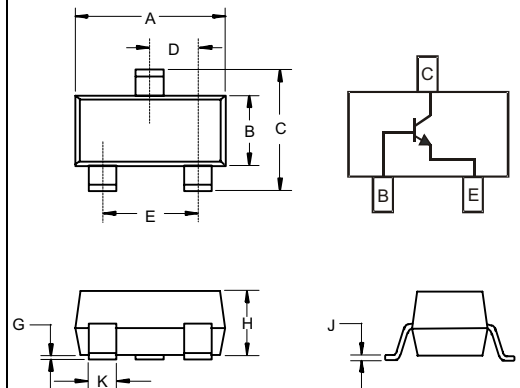
SMALL-SIGNAL CHARACTERISTICS

| | | | | |
|-----------|---|-----|-----|-----|
| f_T | Current Gain-Bandwidth Product ($I_C=20\text{mAdc}$, $V_{CE}=20\text{Vdc}$, $f=100\text{MHz}$) | 300 | | MHz |
| C_{obo} | Output Capacitance ($V_{CB}=10\text{Vdc}$, $I_E=0$, $f=100\text{kHz}$) | | 8.0 | pF |

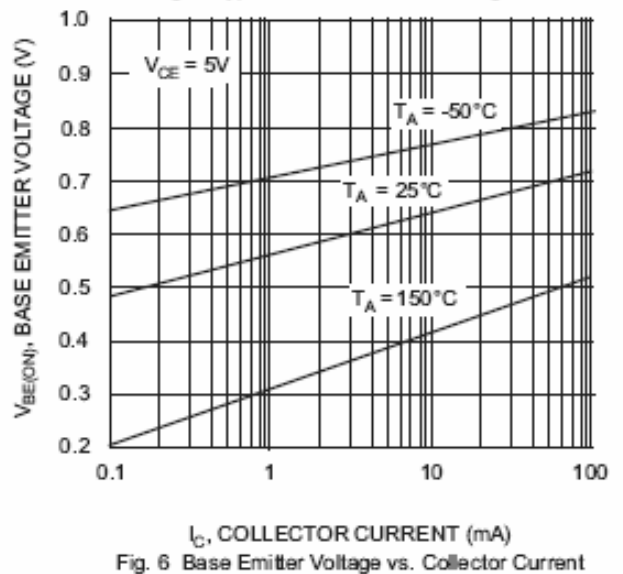
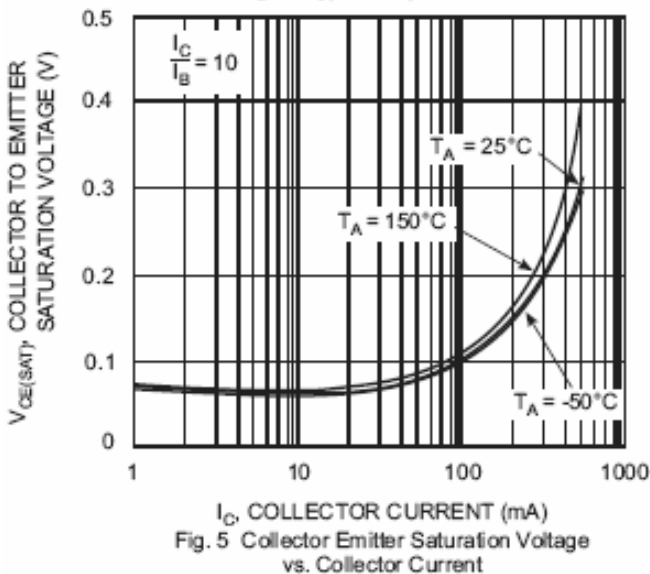
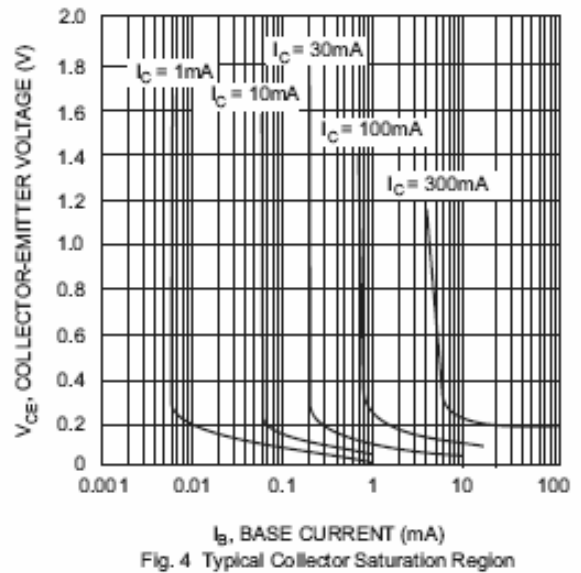
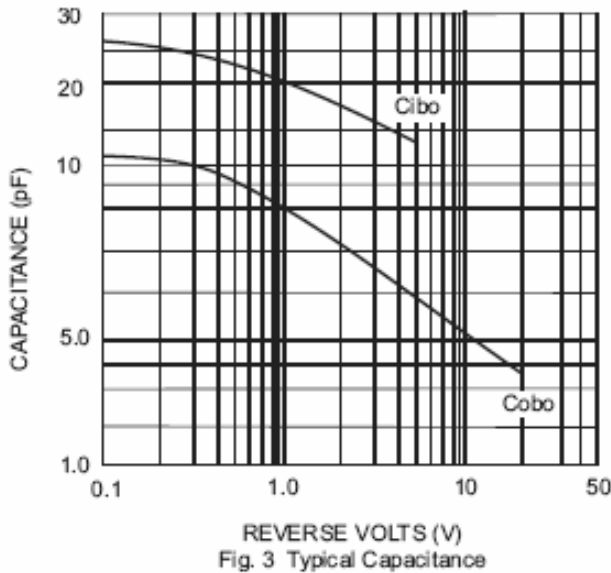
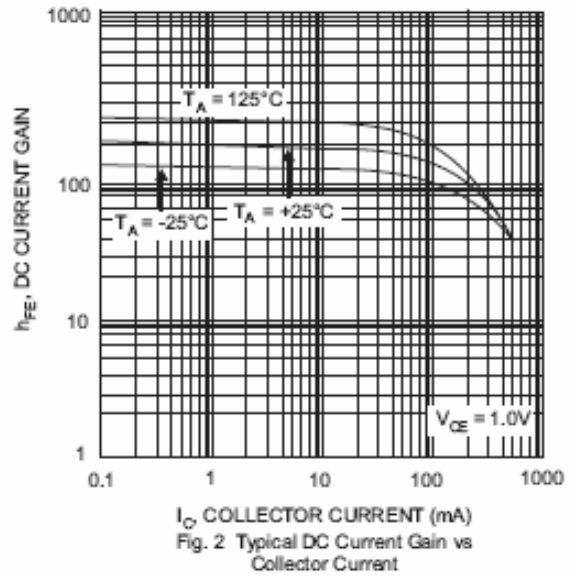
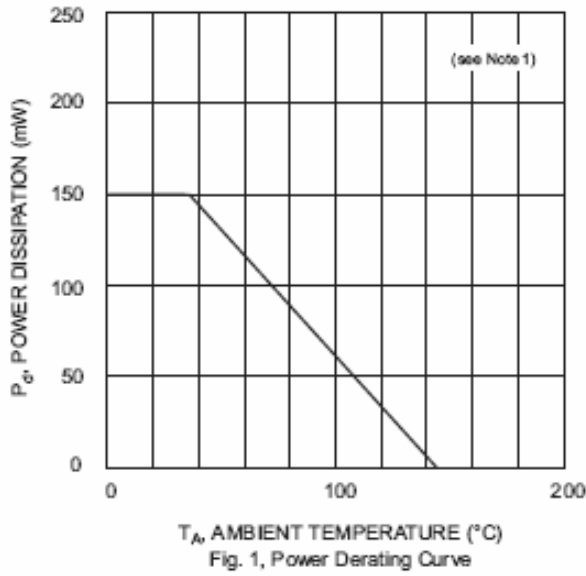
SWITCHING CHARACTERISTICS

| | | | | |
|-------|--------------|---|-----|----|
| t_d | Delay Time | $(V_{CC}=30\text{Vdc}$, $V_{BE}=0.5\text{Vdc}$) | 10 | ns |
| t_r | Rise Time | $I_C=150\text{mAdc}$, $I_{B1}=15\text{mAdc}$ | 25 | ns |
| t_s | Storage Time | $(V_{CC}=30\text{Vdc}$, $I_C=150\text{mAdc}$) | 225 | ns |
| t_f | Fall Time | $I_{B1}=I_{B2}=15\text{mAdc}$ | 60 | ns |

SOT-523



| DIM | DIMENSIONS | | | | NOTE |
|-----|--------------|------|-------------|------|------|
| | INCHES | | MM | | |
| A | .059 | .067 | 1.50 | 1.70 | |
| B | .030 | .033 | 0.75 | 0.85 | |
| C | .057 | .069 | 1.45 | 1.75 | |
| D | .020 Nominal | | 0.50Nominal | | |
| E | .035 | .043 | 0.90 | 1.10 | |
| G | .000 | .004 | .000 | .100 | |
| H | .028 | .031 | .70 | 0.80 | |
| J | .004 | .008 | .100 | .200 | |
| K | .010 | .014 | .25 | .35 | |





Micro Commercial Components

Ordering Information :

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

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