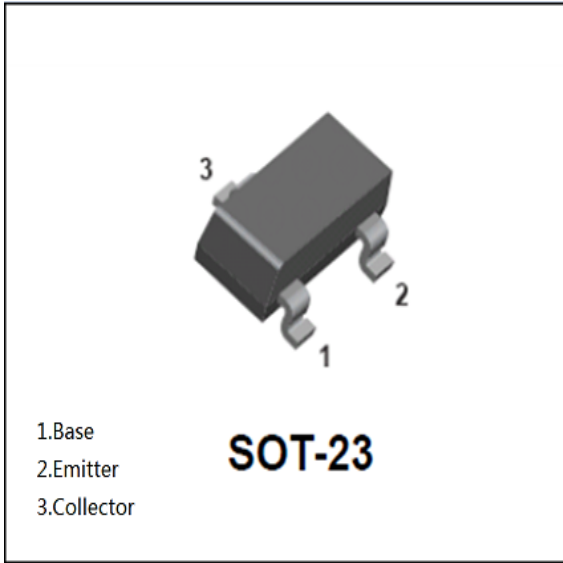


NPN Transistor



Features

- Epoxy meets UL-94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Surface mount package ideally Suited for Automatic Insertion
- NPN

Mechanical Data

- **Package:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** K3D

■ Maximum Ratings (Ta=25°C unless otherwise noted)

| Item | Symbol | Unit | Conditions | Value |
|-------------------------------|---------------|------|-----------------------|-------------|
| Collector-Base Voltage | $V_{(BR)CBO}$ | V | $I_C=100\mu A, I_E=0$ | 30 |
| Collector-Emitter Voltage | $V_{(BR)CEO}$ | V | $I_C=100\mu A, I_B=0$ | 30 |
| Emitter-Base Voltage | $V_{(BR)EBO}$ | V | $I_E=100\mu A, I_C=0$ | 10 |
| Collector Current -Continuous | I_C | A | | 0.3 |
| Total Device Dissipation | PD | mW | | 300 |
| Junction Temperature | T_j | °C | | 150 |
| Storage Temperature | TSTG | °C | | -55 to +150 |

■ Electrical Characteristics (Ta=25°C unless otherwise noted)

| Item | Symbol | Unit | Conditions | Min | Type | Max |
|-------------------------------------|---------------|---------|------------------------|-------|------|-----|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | V | $I_C=100\mu A, I_E=0$ | 30 | | |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | V | $I_C=100\mu A, I_B=0$ | 30 | | |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | V | $I_E=100\mu A, I_C=0$ | 10 | | |
| Collector cut-off current | I_{CBO} | μA | $V_{CB}=30 V, I_E=0$ | | | 0.1 |
| Emitter cut-off current | I_{EBO} | μA | $V_{EB}=10 V, I_C=0$ | | | 0.1 |
| DC current gain | h_{FE1} | | $V_{CE}=5V, I_C=10mA$ | 10000 | | |
| | h_{FE2} | | $V_{CE}=5V, I_C=100mA$ | 20000 | | |



MMBTA14

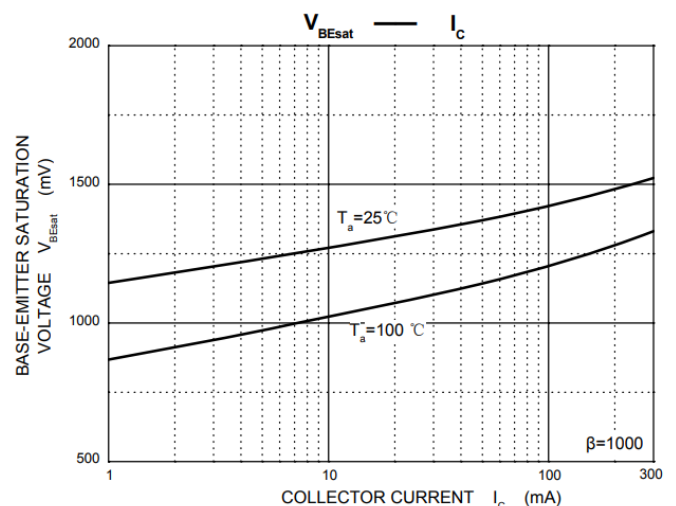
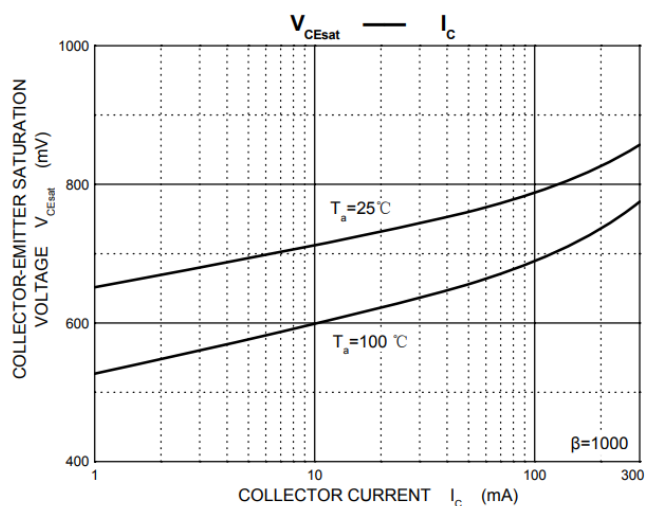
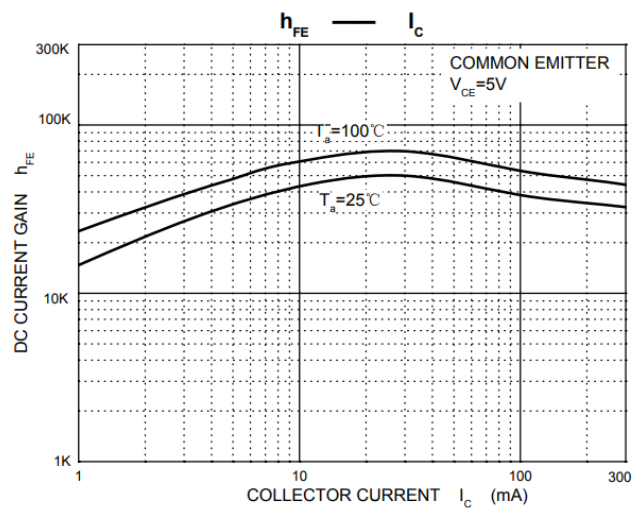
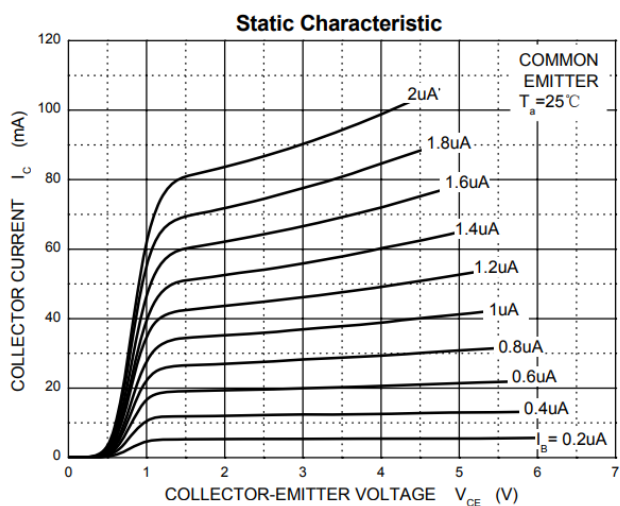
RoHS
COMPLIANT

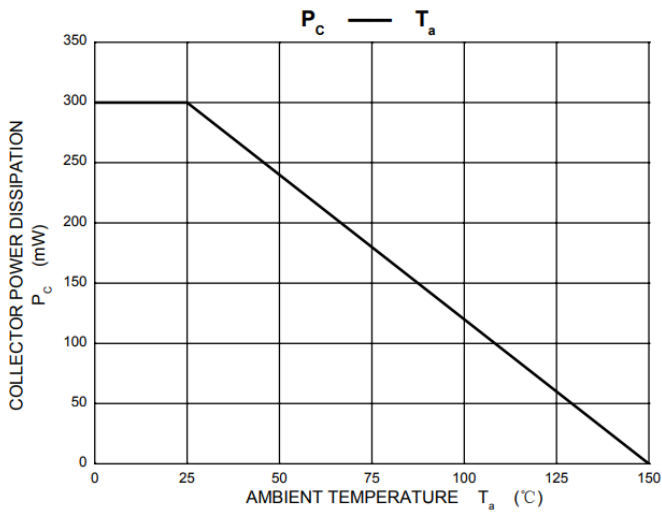
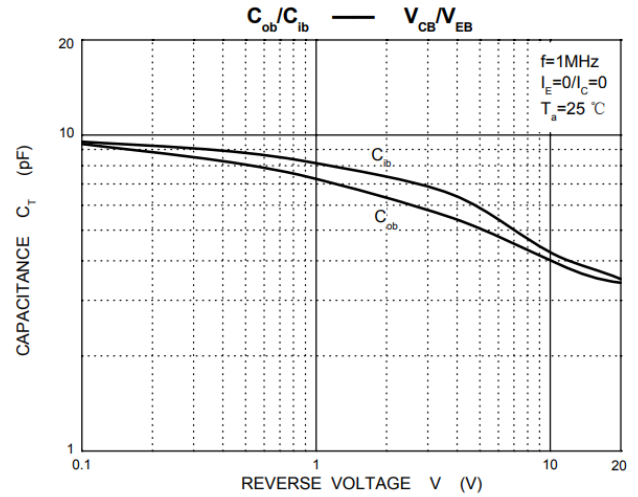
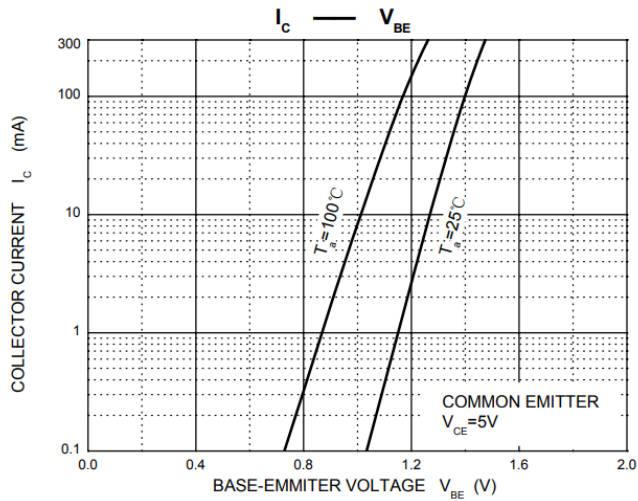
| | | | | | | |
|--------------------------------------|---------------|-----|---------------------------------|-----|--|-----|
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | V | $I_C=100mA, I_B=0.1mA$ | | | 1.5 |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | V | $I_C=100mA, I_B=0.1mA$ | | | 2 |
| Base-emitter voltage | V_{BE} | V | $V_{CE}=5V, I_C=100mA$ | | | 2 |
| Transition frequency | f_t | MHz | $V_{CE}=5V, I_C=10mA, f=100MHz$ | 125 | | |
| Collector-Emitter Voltage | C_{ob} | pF | $V_{CB}=10V, I_E=0, f=1MHz$ | | | 12 |

Ordering Information (Example)

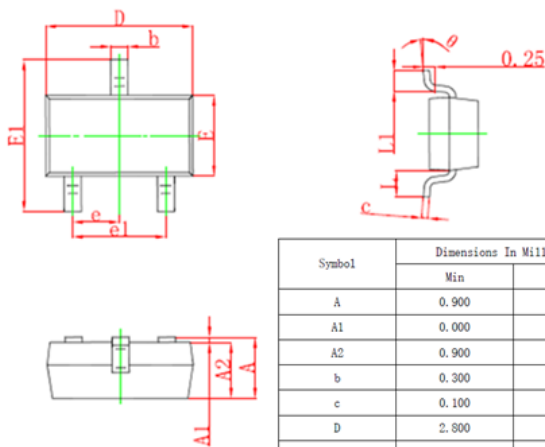
| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| MMBTA14 | F2 | Approximate 0.008 | 3000 | 30000 | 120000 | 7" reel |

Characteristics(Typical)





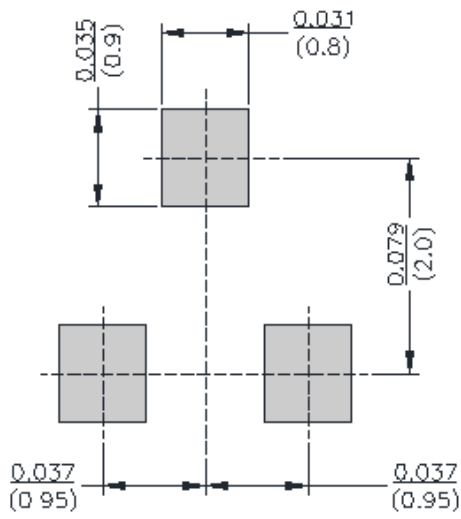
■SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|----------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950TYP | | 0.037TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550REF | | 0.022REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |



■SOT-23Suggested Pad Layout





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