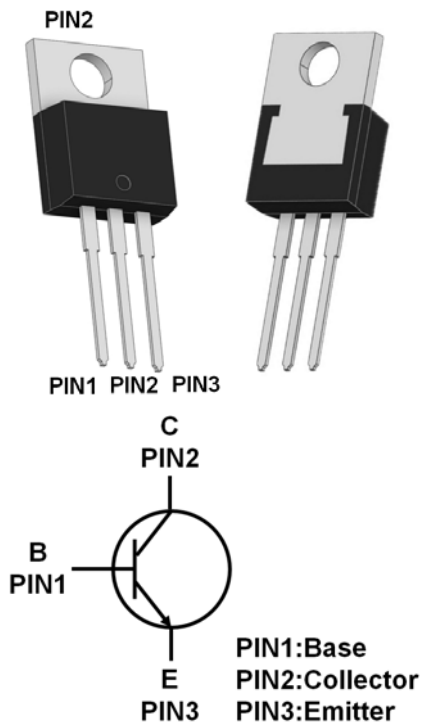


NPN High Power Transistors



Features

- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

- Complement to TIP32C
- Medium Power Linear Switching Applications

Mechanical Data

- Package: TO-220AB
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Unit Weight: 1.9g

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

| Item | Symbol | Unit | Value |
|---|------------|------|-------------|
| Device marking code | | | TIP31C |
| Collector-base voltage | V_{CBO} | V | 100 |
| Collector-emitter voltage | V_{CEO} | V | 100 |
| Emitter-base voltage | V_{EBO} | V | 5 |
| Collector current | I_C | A | 3 |
| Power dissipation | P_D | W | 2 |
| Thermal resistance, junction-to-ambient (Note1) | R_{thJA} | °C/W | 62.5 |
| Junction temperature | T_j | °C | -55 to +150 |
| Storage temperature | T_{STG} | °C | -55 to +150 |

(Note1) Device mounted on PCB with minimum recommended pad layout and additional heat sink (25mm x 23mm x 15mm) attached.

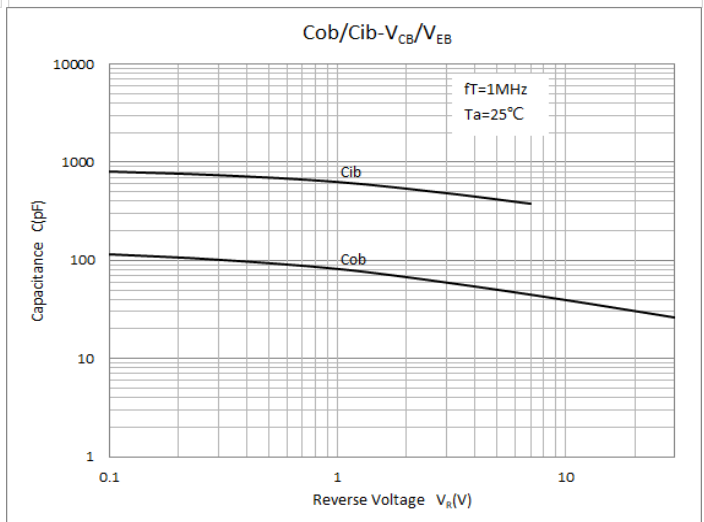
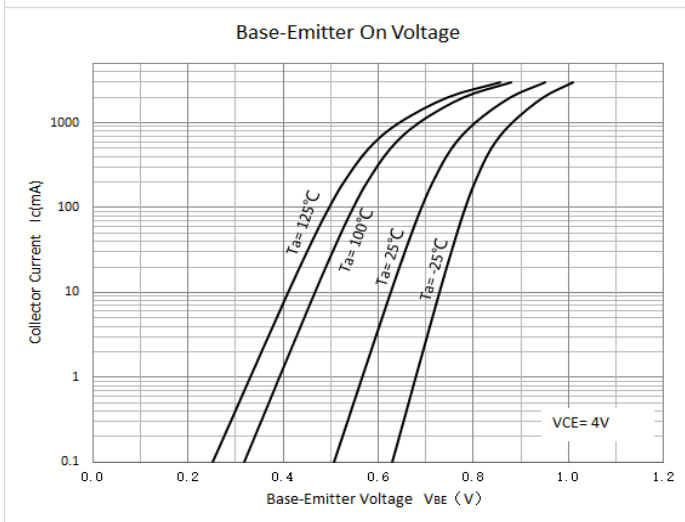
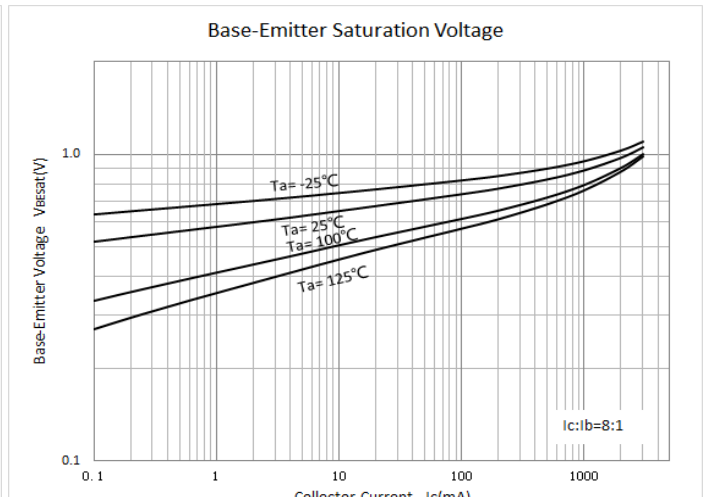
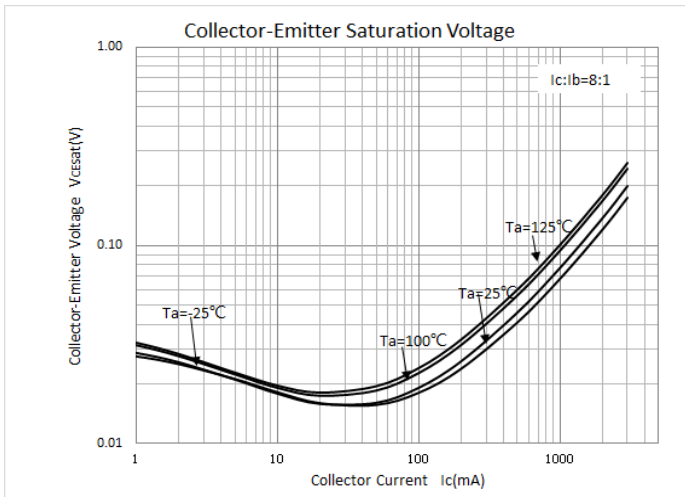
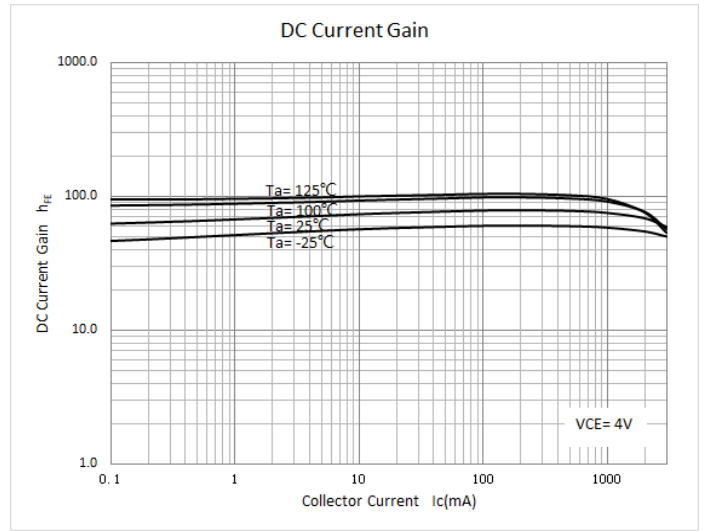
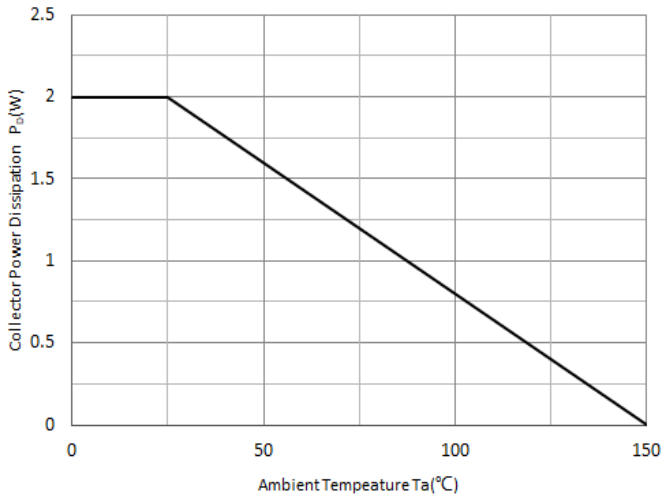


■ Electrical Characteristics (Ta=25°C unless otherwise noted)

| Item | Symbol | Unit | Conditions | Min | Typ | Max |
|--------------------------------------|---------------|------|------------------------------|-----|-----|-----|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | V | $I_C=100\mu A, I_E=0$ | 100 | | |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | V | $I_C=30mA, I_B=0$ | 100 | | |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | V | $I_E=1mA, I_C=0$ | 5 | | |
| Collector-base cut-off current | I_{CBO} | mA | $V_{CB}=100V$ | | | 0.2 |
| Collector cutoff current | I_{CEO} | mA | $V_{CE}=60V$ | | | 0.3 |
| Collector cutoff current | I_{CES} | mA | $V_{CE}=100V$ | | | 0.2 |
| Emitter-base cut-off current | I_{EBO} | mA | $V_{EB}=5V$ | | | 1 |
| DC current gain | h_{FE} | | $V_{CE}=3V, I_C=1A$ | 25 | | |
| | | | $V_{CE}=3V, I_C=3A$ | 10 | | 75 |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | V | $I_C=3A, I_B=0.375A$ | | | 1.2 |
| Base-Emitter Voltage | V_{BE} | V | $V_{CE}=4V, I_C=3A$ | | | 1.8 |
| Collector-base output capacitance | Cob | pF | $V_{CB}=10V, I_E=0A, f=1MHz$ | | 39 | |



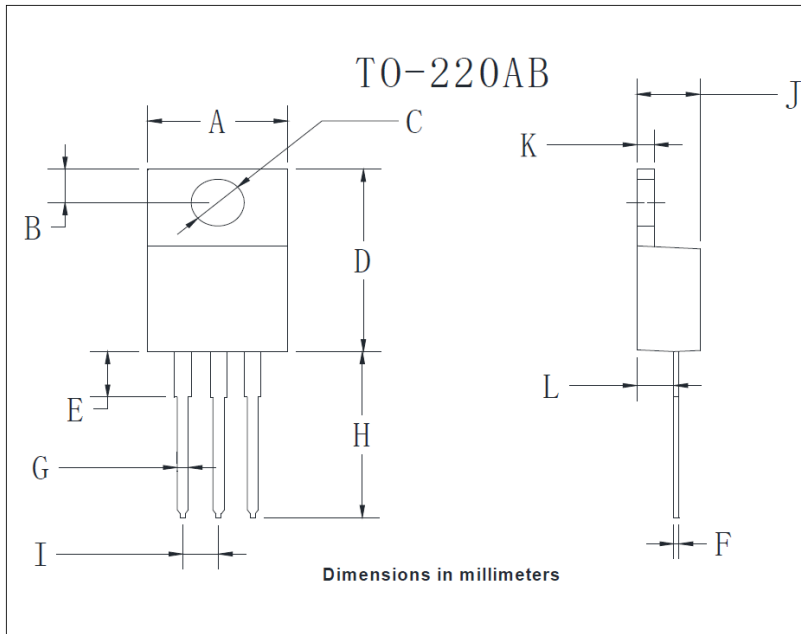
■ Characteristics(Typical)



■ Ordering Information (Example)

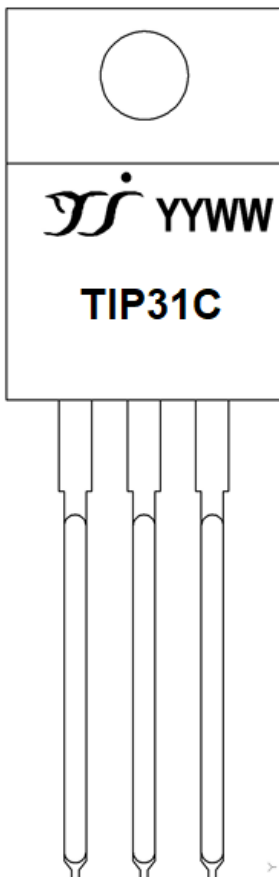
| PREFERRED P/N | PACKING CODE | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|----------------------|-------------------------|----------------------------|---------------|
| TIP31C | B1 | 50/Tube | 1000 | 2000 | Tube |

■ TO-220AB Package information



| TO-220AB | | |
|----------|-------|-------|
| Dim | Min | Max |
| A | 9.95 | 10.35 |
| B | 2.55 | 2.95 |
| C | 3.8 | 4.0 |
| D | 14.95 | 15.25 |
| E | 3.75 | 4.25 |
| F | 0.26 | 0.5 |
| G | 0.68 | 0.94 |
| H | 13.4 | 13.9 |
| I | 2.35 | 2.65 |
| J | 4.38 | 4.78 |
| K | 1.14 | 1.4 |
| L | 2.37 | 2.79 |

■ Marking code



YangJie LOGO

YYWW: YY, years; WW, week.

For example, 24 represents 2024; 01 represents the first week of this year.

TIP31C: Product model.



Disclaimer

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