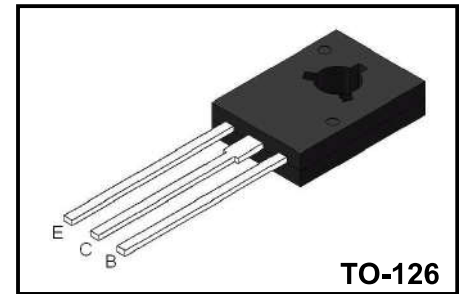


PNP Plastic-Encapsulate Transistors

Medium Power Linear and Switching Applications

◆ Complement to BD237



| Marking Code | |
|--------------|-----------|
| BD238 | YFW BD238 |

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Value | Unit |
|-----------------------------|------------|---------|------|
| Collector-base voltage | BV_{CBO} | -100 | V |
| Collector-emitter voltage | BV_{CEO} | -80 | V |
| Emitter-base Voltage | BV_{EBO} | -5 | V |
| Collector current (DC) | I_C | -2 | A |
| Collector current (Pulse) | I_{CP} | -6 | A |
| Collector power dissipation | P_C | 25 | W |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -65~150 | °C |

Electrical Characteristics (Ta=25°C)

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---------------------------------------|---------------|---|----------|-----|------|---------|
| Collector-base breakdown voltage | BV_{CBO} | $I_C = -100\mu A, I_E = 0$ | -100 | | | V |
| Collector-emitter breakdown voltage | BV_{CEO} | $I_C = -1mA, I_B = 0$ | -80 | | | V |
| Emitter-base breakdown voltage | BV_{EBO} | $I_E = -100\mu A, I_C = 0$ | -5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB} = -100V, I_E = 0$ | | | -100 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = -5V, I_C = 0$ | | | -100 | μA |
| DC current gain* | h_{FE} | $V_{CE} = -2V, I_C = -150mA$ $V_{CE} = -2V, I_C = -1A$ | 40 25 | | | |
| Collector-emitter saturation voltage* | $V_{CE(sat)}$ | $I_C = -1A, I_B = -0.1A$ | | | -0.6 | V |
| Base-emitter saturation voltage* | $V_{BE(on)}$ | $V_{CE} = -2V, I_C = -1A$ | | | -1.3 | V |
| Transition frequency | f_T | $V_{CE} = -1V, I_B = -0.25A$ | 3 | | | MHz |

* Pulse Test: PW=300 μ s, duty Cycle=1.5% Pulsed

Typical Characteristics

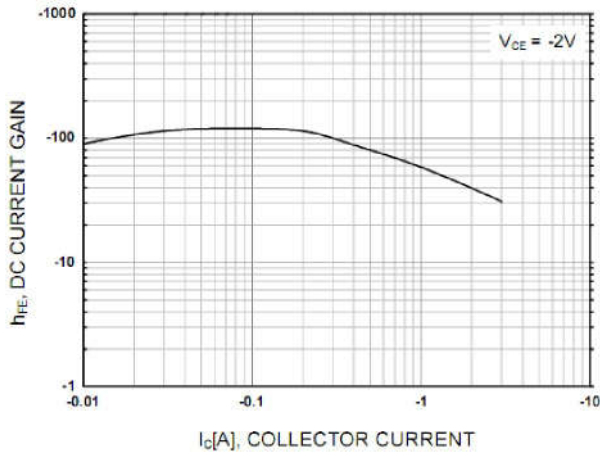


Figure 1. DC current Gain

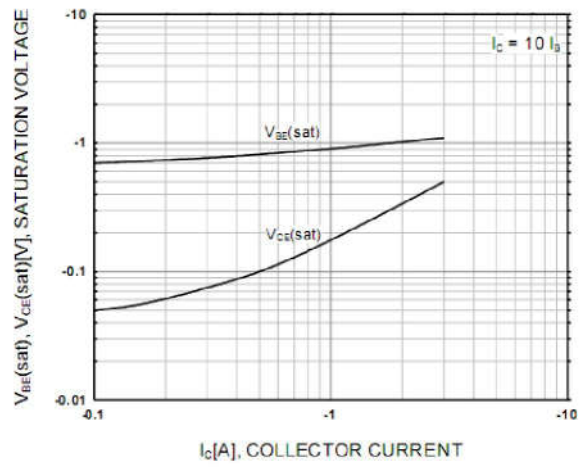


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

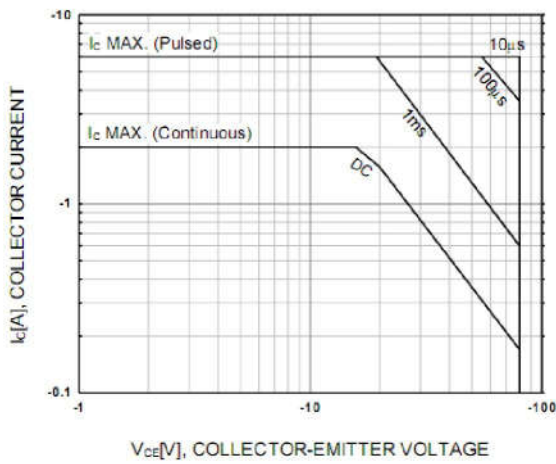


Figure 3. Safe Operating Area

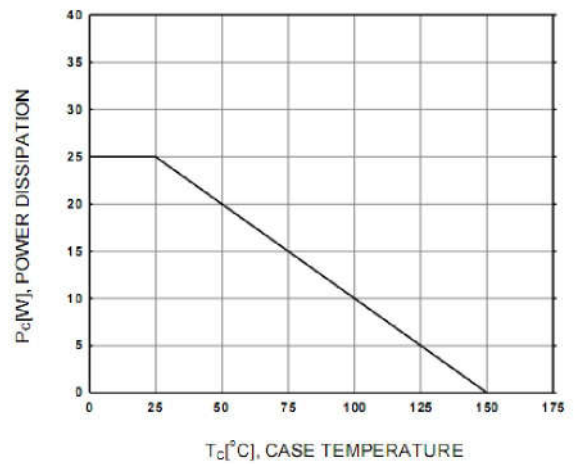


Figure 4. Power Derating

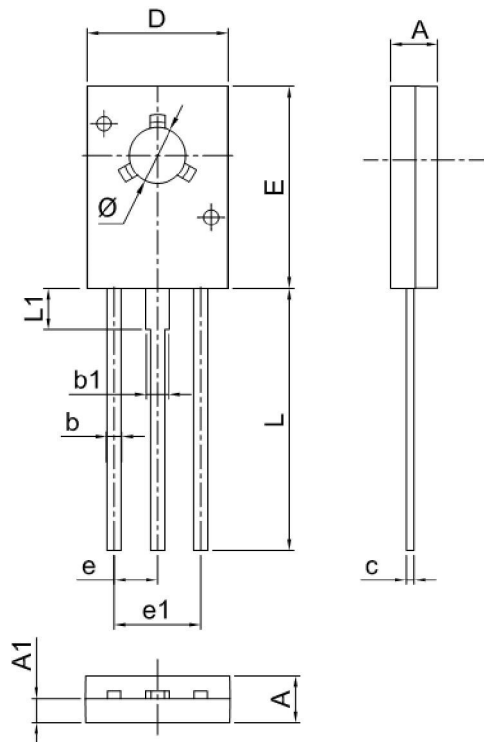
Ordering information

| Package | Packing Description | Base Quantity |
|---------|---------------------|---------------|
| TO-126 | Bulk | 500pcs/Bag |

Package Dimensions

TO-126

| Symbol | Millimeter | | Inches | |
|--------|------------|-------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.40 | 2.80 | 0.094 | 0.110 |
| A1 | 1.00 | 1.40 | 0.039 | 0.055 |
| b | 0.66 | 0.86 | 0.026 | 0.034 |
| b1 | 1.17 | 1.37 | 0.046 | 0.054 |
| c | 0.40 | 0.60 | 0.016 | 0.024 |
| D | 7.30 | 7.70 | 0.287 | 0.303 |
| E | 10.60 | 11.00 | 0.417 | 0.433 |
| e | 2.25 | 2.33 | 0.089 | 0.092 |
| e1 | 4.50 | 4.66 | 0.177 | 0.183 |
| L | 14.00 | 15.00 | 0.551 | 0.591 |
| L1 | 1.90 | 2.50 | 0.075 | 0.098 |
| Φ | 3.10 | 3.30 | 0.122 | 0.130 |



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