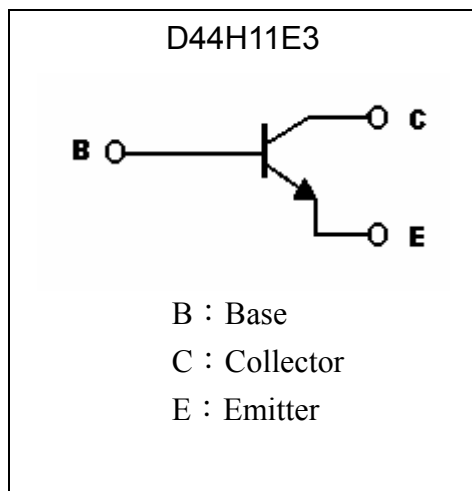
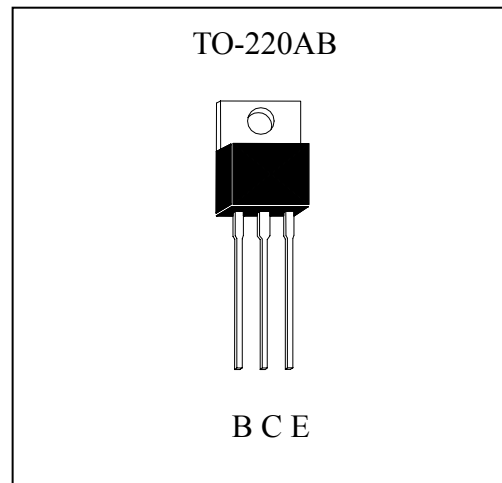


**Low Vcesat NPN Epitaxial Planar Transistor**

# D44H11E3

**Features**

- Low  $V_{CE(sat)}$
- High  $BV_{CEO}$
- Excellent current gain characteristics

**Symbol**

**Outline**

**Absolute Maximum Ratings** ( $T_a=25^{\circ}\text{C}$ )

| Parameter                                    | Symbol          | Limits      | Unit                        |
|--|-----------------|-------------|-----------------------------|
| Collector-Base Voltage                       | $V_{CBO}$       | 80          | V                           |
| Collector-Emitter Voltage                    | $V_{CEO}$       | 80          | V                           |
| Emitter-Base Voltage                         | $V_{EBO}$       | 6           | V                           |
| Collector Current (DC)                       | $I_C$           | 10          | A                           |
| Collector Current (Pulse)                    | $I_{CP}$        | 20 (Note 1) |                             |
| Power Dissipation @ $T_A=25^{\circ}\text{C}$ | $P_D$           | 2           | W                           |
| Power Dissipation @ $T_c=25^{\circ}\text{C}$ | $P_D$           | 50          |                             |
| Thermal Resistance, Junction to Ambient      | $R_{\theta JA}$ | 62.5        | $^{\circ}\text{C}/\text{W}$ |
| Thermal Resistance, Junction to Case         | $R_{\theta JC}$ | 2.5         | $^{\circ}\text{C}/\text{W}$ |
| Junction Temperature                         | $T_j$           | 150         | $^{\circ}\text{C}$          |
| Storage Temperature                          | $T_{stg}$       | -55~+150    | $^{\circ}\text{C}$          |

Note : 1. Single Pulse ,  $P_w \leq 380\mu\text{s}$ ,  $Duty \leq 2\%$ .



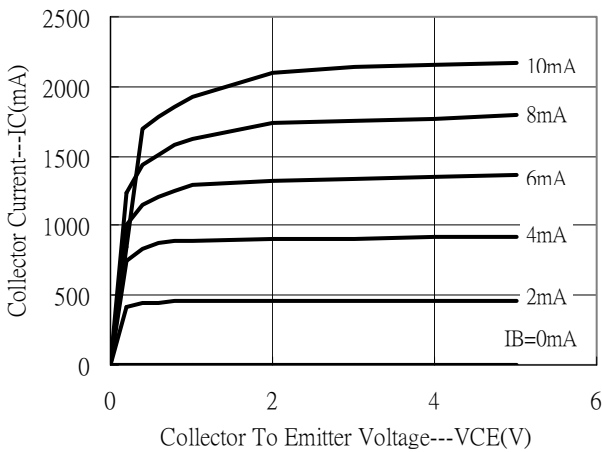
**Characteristics (Ta=25°C)**

| Symbol          | Min. | Typ. | Max. | Unit    | Test Conditions                 |
|-----------------|------|------|------|---------|---------------------------------|
| $BV_{CEO(SUS)}$ | 80   | -    | -    | V       | $I_C=30mA, I_B=0$               |
| $I_{CES}$       | -    | -    | 10   | $\mu A$ | $V_{CE}=80V, V_{BE}=0$          |
| $I_{EBO}$       | -    | -    | 50   | $\mu A$ | $V_{EB}=5V, I_C=0$              |
| * $V_{CE(sat)}$ | -    | 0.3  | 0.6  | V       | $I_C=8A, I_B=0.4A$              |
| * $V_{BE(sat)}$ | -    | 1.0  | 1.5  | V       | $I_C=8A, I_B=0.8A$              |
| * $h_{FE}$      | 60   | -    | -    | -       | $V_{CE}=1V, I_C=2A$             |
| * $h_{FE}$      | 40   | -    | -    | -       | $V_{CE}=1V, I_C=4A$             |
| $f_T$           | -    | 50   | -    | MHz     | $V_{CE}=6V, I_C=500mA, f=20MHz$ |
| Cob             | -    | 130  | -    | pF      | $V_{CB}=10V, f=1MHz$            |

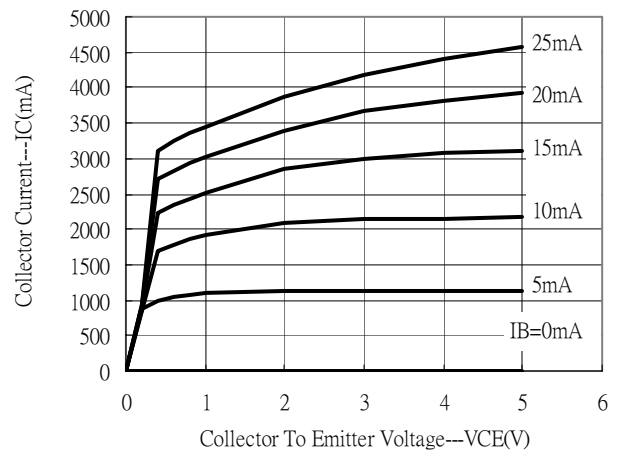
\*Pulse Test : Pulse Width  $\leq 380\mu s$ , Duty Cycle  $\leq 2\%$

**Characteristic Curves**

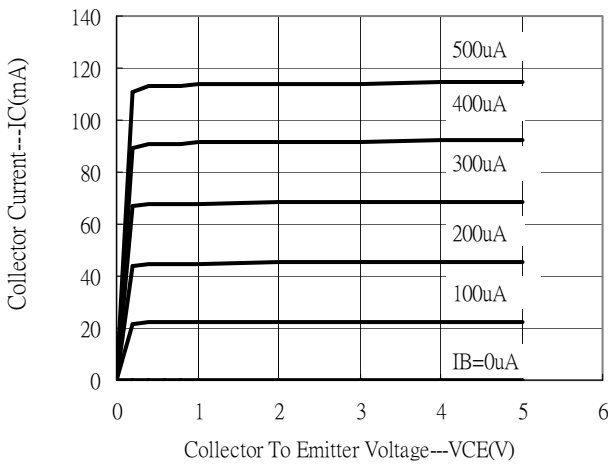
Grounded Emitter Output Characteristics



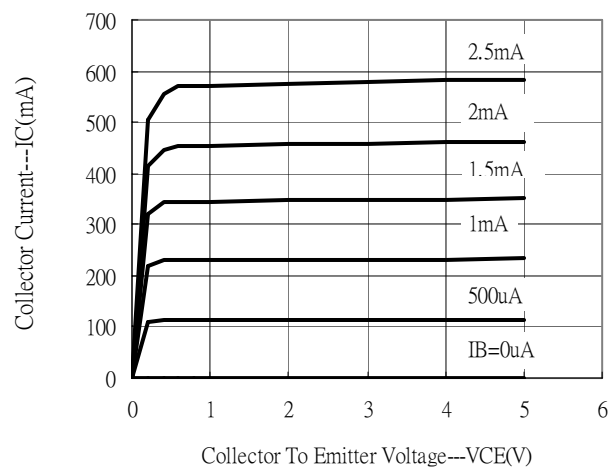
Grounded Emitter Output Characteristics



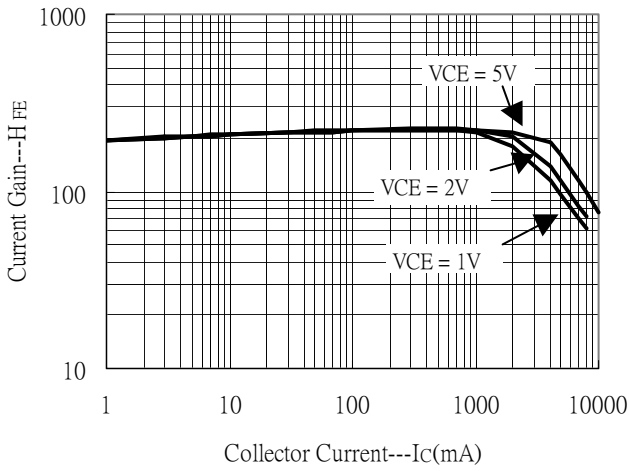
Grounded Emitter Output Characteristics



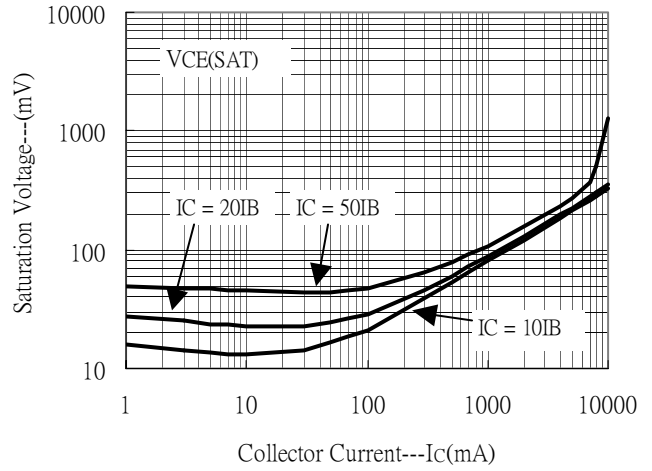
Grounded Emitter Output Characteristics



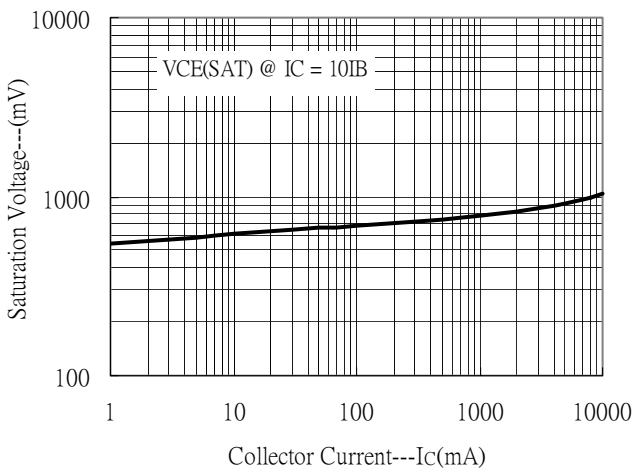
Current Gain vs Collector Current



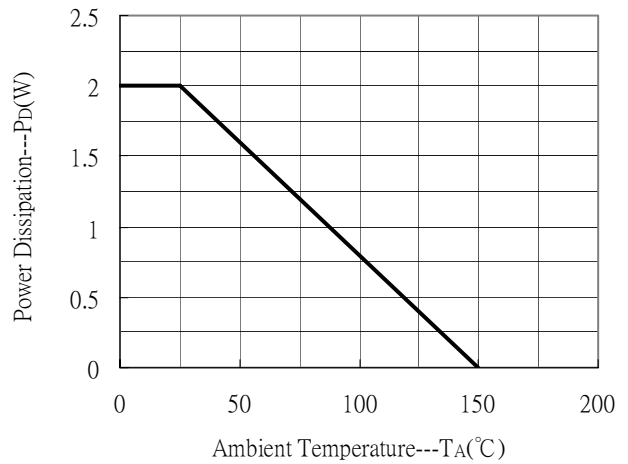
Saturation Voltage vs Collector Current



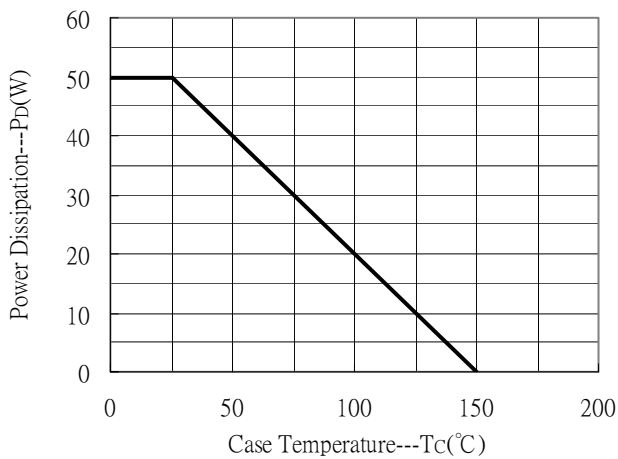
Saturation Voltage vs Collector Current



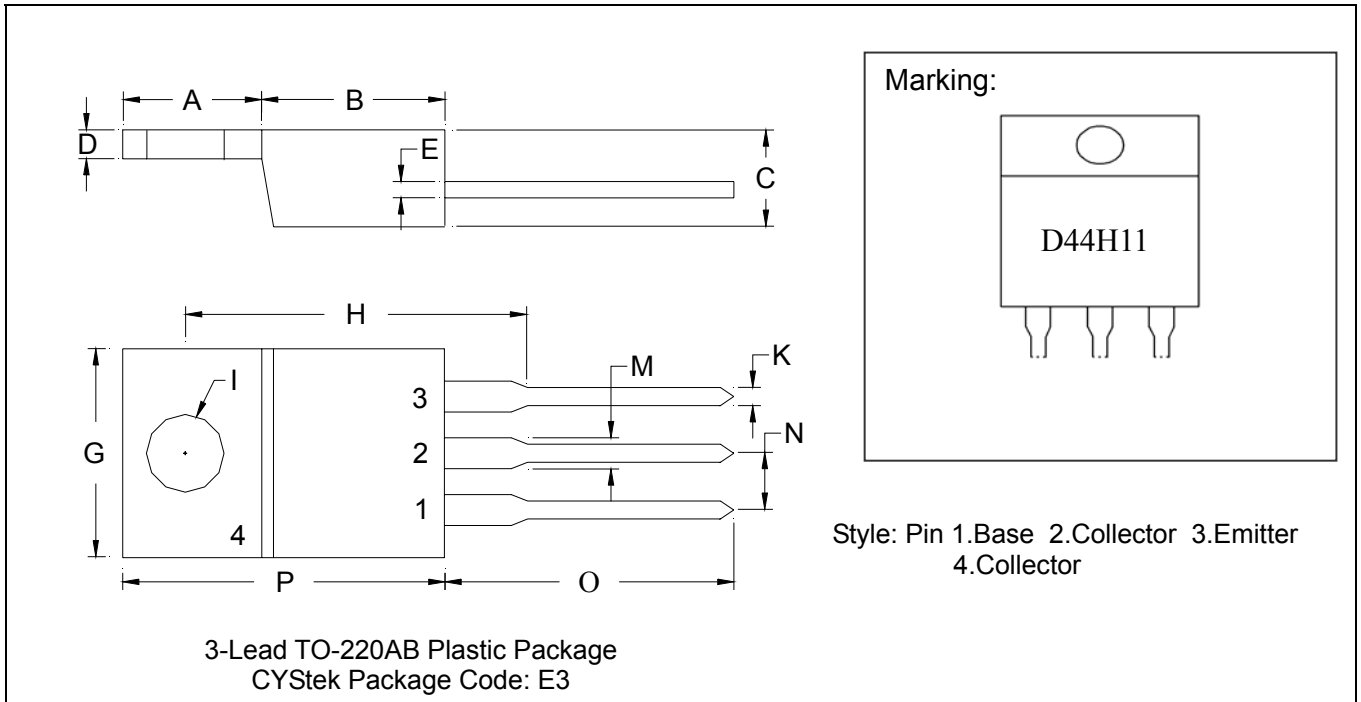
Power Derating Curve



Power Derating Curve



**TO-220AB Dimension**



\*: Typical

| DIM | Inches |         | Millimeters |        | DIM | Inches |         | Millimeters |       |
|-----|--------|---------|-------------|--------|-----|--------|---------|-------------|-------|
|     | Min.   | Max.    | Min.        | Max.   |     | Min.   | Max.    | Min.        | Max.  |
| A   | 0.2197 | 0.2949  | 5.58        | 7.49   | I   | -      | *0.1508 | -           | *3.83 |
| B   | 0.3299 | 0.3504  | 8.38        | 8.90   | K   | 0.0295 | 0.0374  | 0.75        | 0.95  |
| C   | 0.1732 | 0.185   | 4.40        | 4.70   | M   | 0.0449 | 0.0551  | 1.14        | 1.40  |
| D   | 0.0453 | 0.0547  | 1.15        | 1.39   | N   | -      | *0.1000 | -           | *2.54 |
| E   | 0.0138 | 0.0236  | 0.35        | 0.60   | O   | 0.5000 | 0.5618  | 12.70       | 14.27 |
| G   | 0.3803 | 0.4047  | 9.66        | 10.28  | P   | 0.5701 | 0.6248  | 14.48       | 15.87 |
| H   | -      | *0.6398 | -           | *16.25 |     |        |         |             |       |

- Notes:**
- 1.Controlling dimension: millimeters.
  - 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
  - 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

**Material:**

- Lead: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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