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2SC3857

**Silicon NPN Triple Diffused Planar Transistor** (Complement to type 2SA1493)

**Application :** Audio and General Purpose

■ Absolute maximum ratings (Ta=25°C)

| Symbol | Ratings      | Unit |
|--------|--------------|------|
| VCBO   | 200          | V    |
| VCEO   | 200          | V    |
| VEBO   | 6            | V    |
| Ic     | 15           | A    |
| IB     | 5            | A    |
| Pc     | 150(Tc=25°C) | W    |
| Tj     | 150          | °C   |
| Tstg   | -55 to +150  | °C   |

### ■Electrical Characteristics (Ta=25°C)

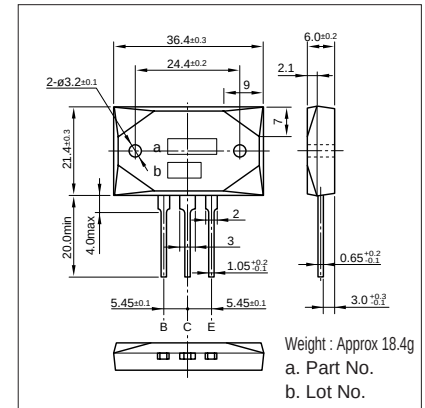
| Symbol         | Conditions              | Ratings | Unit    |
|----------------|-------------------------|---------|---------|
| ICBO           | $V_{CB}=200V$           | 100max  | $\mu A$ |
| IEBO           | $V_{EB}=6V$             | 100max  | $\mu A$ |
| $V_{(BR)CEO}$  | $I_C=50mA$              | 200min  | V       |
| $h_{FE}$       | $V_{CE}=4V, I_C=5A$     | 50min*  |         |
| $V_{CE(sat)}$  | $I_C=10A, I_B=1A$       | 3.0max  | V       |
| f <sub>r</sub> | $V_{CE}=12V, I_E=-0.5A$ | 20typ   | MHz     |
| COB            | $V_{CB}=10V, f=1MHz$    | 250typ  | pF      |

\*h<sub>FE</sub> Rank     $\bar{O}$ (50 to 100), P(70 to 140), Y(90 to 180)

### ■ Typical Switching Characteristics (Common Emitter)

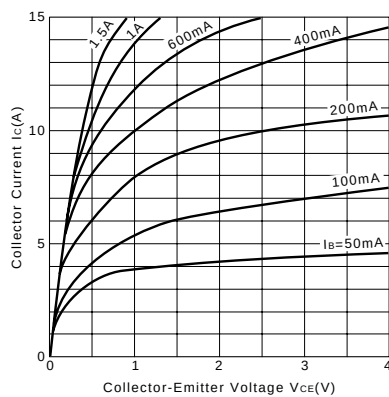
| V <sub>CC</sub><br>(V) | R <sub>L</sub><br>(Ω) | I <sub>C</sub><br>(A) | V <sub>BB1</sub><br>(V) | V <sub>BB2</sub><br>(V) | I <sub>B1</sub><br>(A) | I <sub>B2</sub><br>(A) | t <sub>on</sub><br>(μs) | t <sub>stg</sub><br>(μs) | t <sub>f</sub><br>(μs) |
|------------------------|-----------------------|-----------------------|-------------------------|-------------------------|------------------------|------------------------|-------------------------|--------------------------|------------------------|
| 60                     | 12                    | 5                     | 10                      | -5                      | 0.5                    | -0.5                   | 0.3typ                  | 2.4typ                   | 0.4typ                 |

### External Dimensions MT-200

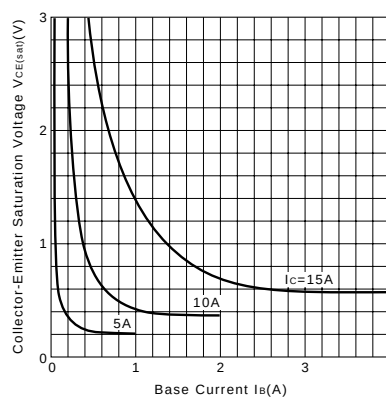


Weight : Approx 18.4g  
a. Part No.  
b. Lot No.

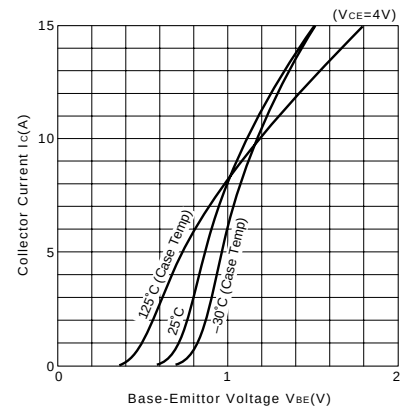
### **I<sub>C</sub>–V<sub>CE</sub> Characteristics (Typical)**



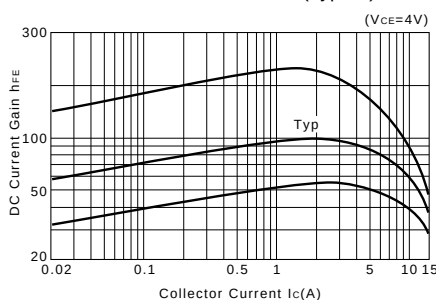
### V<sub>CE(sat)</sub>-I<sub>B</sub> Characteristics (Typical)



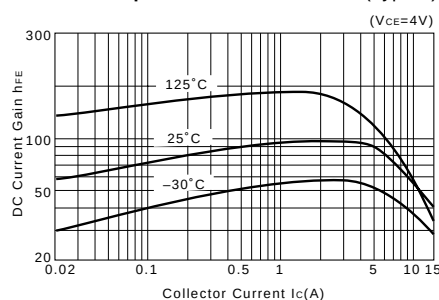
### **I<sub>C</sub>-V<sub>BE</sub> Temperature Characteristics (Typical)**



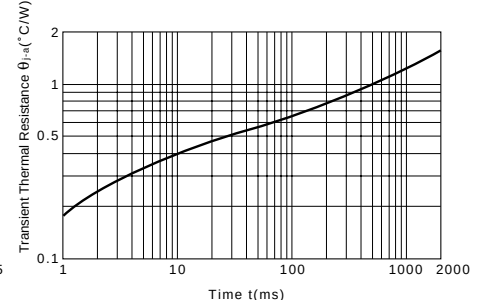
### **$h_{FE}-I_C$ Characteristics (Typical)**



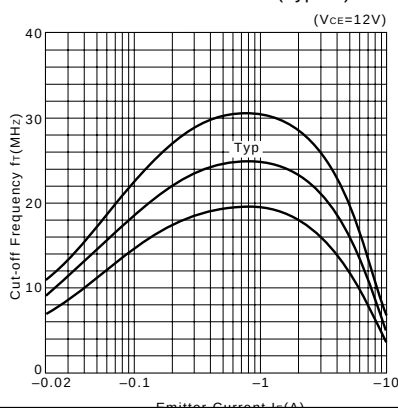
### **$h_{FE}$ - $I_C$ Temperature Characteristics (Typical)**



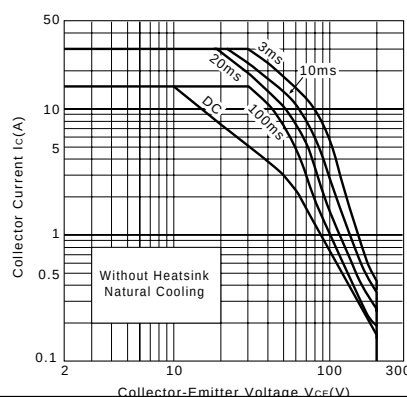
### $\theta_{j-a-t}$ Characteristics



### f<sub>T</sub>-I<sub>E</sub> Characteristics (Typical)



### Safe Operating Area (Single Pulse)



### Pc-Ta Derating

