

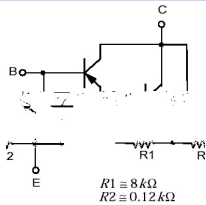
Rev. H Oct.-2018

KF \$))' GE G Silicon PNP transistor in a TO-220 Plastic Package.

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Monolithic construction with built in base-emitter shunt resistors, High DC current gain complement to TIP142T.

Linear and switching industrial equipment.

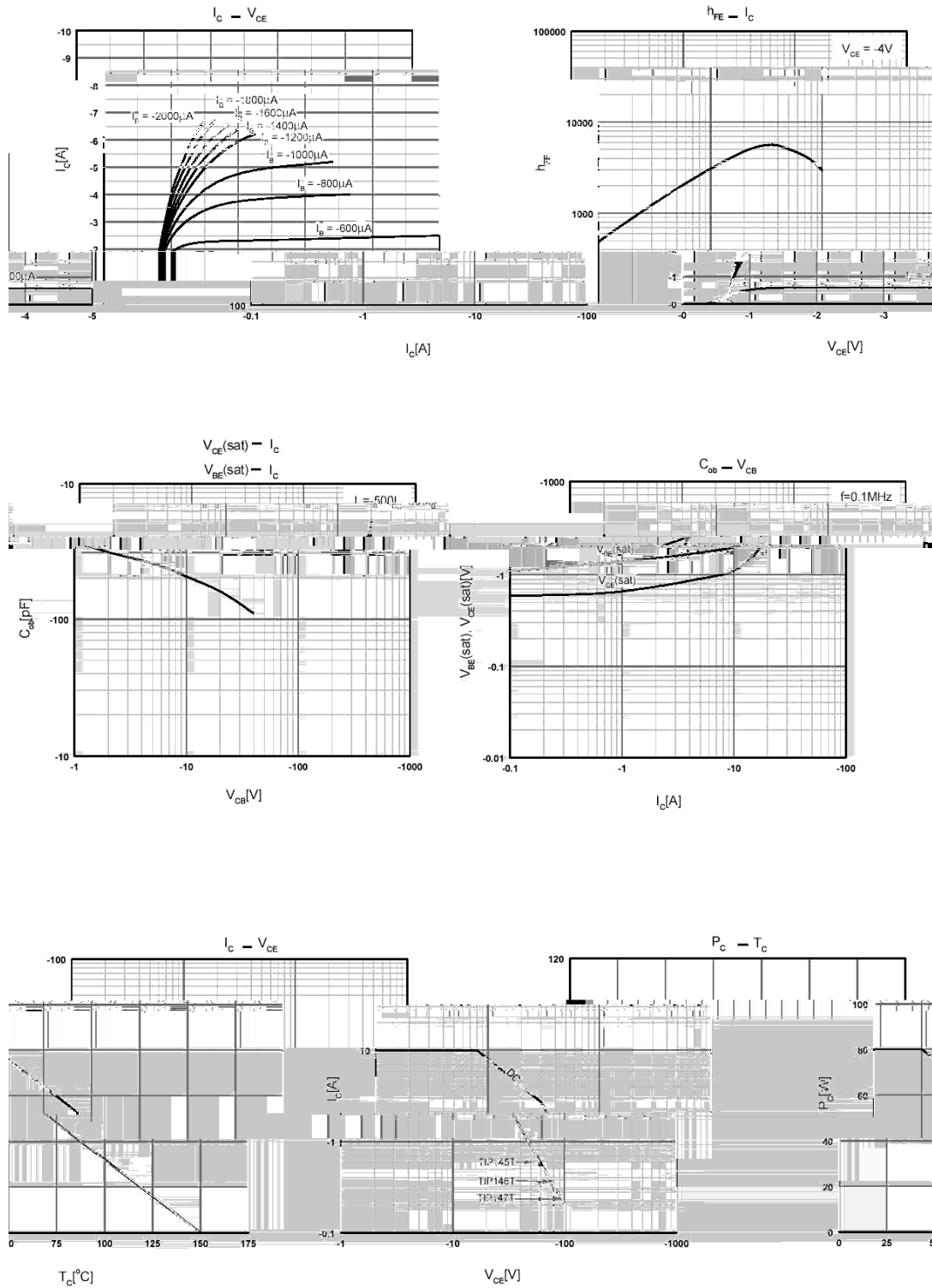


PIN 1 Base PIN 2 Collector PIN 3 Emitter

See Marking Instructions.

| Parameter                      | Symbol                      | Rating  | Unit |
|--------------------------------|-----------------------------|---------|------|
| Collector to Base Voltage      | $V_{CBO}$                   | -100    | V    |
| Collector to Emitter Voltage   | $V_{CEO}$                   | -100    | V    |
| Emitter to Base Voltage        | $V_{EBO}$                   | -5.0    | V    |
| Collector Current - Continuous | $I_C$                       | -10     | A    |
| Peak Collector Current         | $I_{CP}$                    | -15     | A    |
| Base Current - Continuous      | $I_B$                       | -0.5    | A    |
| Collector Power Dissipation    | $P_C(T_C=25^\circ\text{C})$ | 80      | W    |
| Junction Temperature           | $T_j$                       | 150     |      |
| Storage Temperature Range      | $T_{stg}$                   | -55 150 |      |

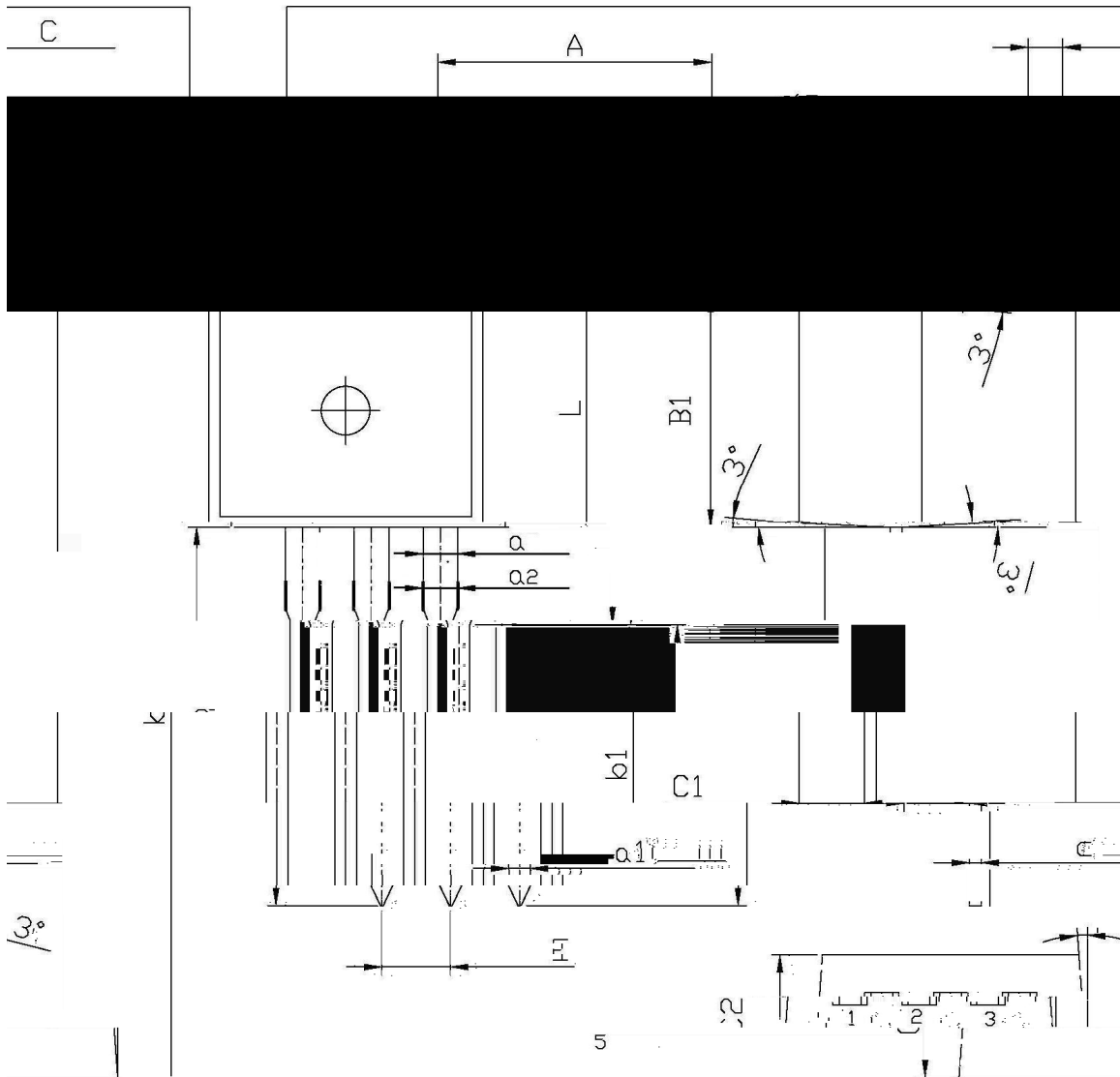
| Parameter                               | Symbol           | Test Conditions   | Min  | Typ  | Max  | Unit          |
|---|------------------|---|------|------|------|---------------|
| Collector to Emitter Breakdown Voltage  | $V_{CEO}$        | $I_C=-30\text{mA}$ $I_B=0$  | -100 |      |      | V             |
| Collector Cut-Off Current               | $I_{CEO}$        | $V_{CE}=-50\text{V}$ $I_B=0$  |      |      | -2.0 | mA            |
| Collector Cut-Off Current               | $I_{CBO}$        | $V_{CB}=-100\text{V}$ $I_E=0$   |      |      | -1.0 | mA            |
| Emitter Cut-Off Current                 | $I_{EBO}$        | $V_{EB}=-5.0\text{V}$ $I_C=0$   |      |      | -2.0 | mA            |
| DC Current Gain                         | $h_{FE(1)}$      | $V_{CE}=-4.0\text{V}$ $I_C=-5.0\text{A}$  | 1000 |      |      |               |
|   | $h_{FE(2)}$      | $V_{CE}=-4.0\text{V}$ $I_C=-10\text{A}$   | 500  |      |      |               |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)(1)}$ | $I_C=-5.0\text{A}$ $I_B=-10\text{mA}$   |      |      | -2.0 | V             |
|   | $V_{CE(sat)(2)}$ | $I_C=-10\text{A}$ $I_B=-40\text{mA}$  |      |      | -3.0 | V             |
| Base to Emitter Saturation Voltage      | $V_{BE(sat)}$    | $I_C=-10\text{A}$ $I_B=-40\text{mA}$  |      |      | -3.5 | V             |
| Base to Emitter Voltage                 | $V_{BE}$         | $V_{CE}=-4.0\text{V}$ $I_C=-10\text{A}$   |      |      | -3.0 | V             |
| Delay Time                              | $t_D$            | $V_{CC}=-3\text{V}$ $I_C=-5\text{A}$<br>$I_{B1}=-20\text{mA}$ $I_{B2}=20\text{mA}$<br>$R_L=6\Omega$ |      | 0.15 |      | $\mu\text{s}$ |
| Rise Time                               | $t_R$            |   |      | 0.55 |      | $\mu\text{s}$ |
| Storage Time                            | $t_{STG}$        |   |      | 2.5  |      | $\mu\text{s}$ |
| Fall Time                               | $t_F$            |   |      | 2.5  |      | $\mu\text{s}$ |



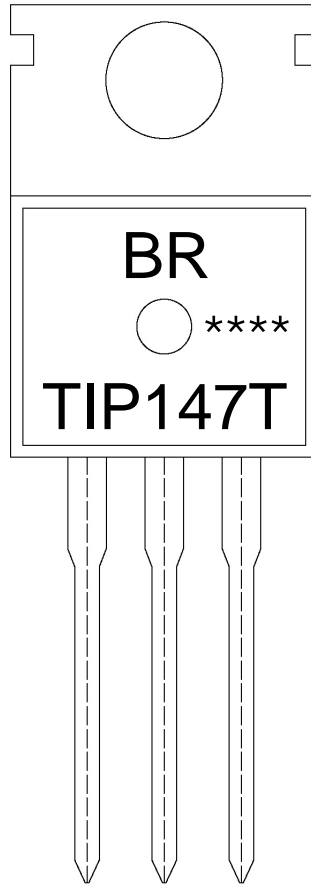
mm

TO-220

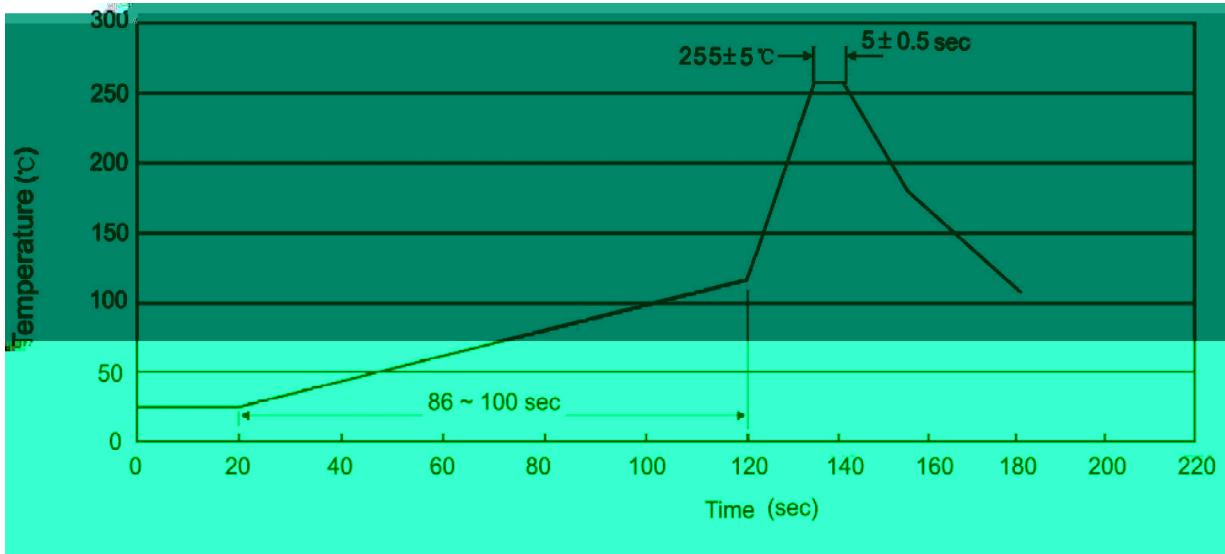
单位:



| Symbol   | Dimensions in millimeters |      | Symbol | Dimensions in millimeters |      |
|----------|---------------------------|------|--------|---------------------------|------|
|          | Min                       | Max  |        | Min                       | Max  |
| $\Delta$ | 9.8                       | 10.2 | C      | 1.2                       | 1.4  |
| R        | 3.56                      | 3.64 | B      | 6.3                       | 6.7  |
| $\phi$   | 9.0                       | 9.4  | B1     | 15.7                      | 16.1 |
| $\phi$   | 2.2                       | 2.6  | C1     | 12.6                      | 13.6 |
| $\phi$   | 0.7                       | 0.9  | $\phi$ | 0.96                      | 1.06 |
| C        | 0.4                       | 0.6  | a1     | 1.22                      | 1.32 |
| $\phi$   | 1.4                       | 1.7  | $\phi$ | 0.21                      | 0.27 |
| $\phi$   | 1.45                      | 1.7  | a2     | 0.2                       | 0.25 |



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Note:  
BR: Company Code  
TIP147T: Product Type.  
\*\*\*\*: Lot No. Code, code change with Lot No.


**Note:**

- |   |        |            |   |
|---|--------|------------|---|
| 1 | 25 150 | 60 90sec;  | 1.Preheating:25~150 °C, Time:60~90sec.      |
| 2 | 255..5 | 5..0.5sec; | 2.Peak Temp.:255..5 °C, Duration:5..0.5sec. |
| 3 | 2 10   | /sec.      | 3. Cooling Speed: 2~10 °C/sec.              |

270..5                      10..1 sec.                      Temp.:270±5                      Time:10±1 sec

## / BULK

| Package Type<br>封装形式 | Units 包装数量       |                       |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|------------------|-----------------------|------------------------|------------------------------|------------------------|---|-------------|-------------|
|                      | Units/Bag<br>只/袋 | Bags/Inner Box<br>袋/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Bag 袋                                   | Inner Box 盒 | Outer Box 箱 |
| TO-220/F             | 200              | 10                    | 2,000                  | 5                            | 10,000                 | 135×190                                 | 237×172×102 | 560×245×195 |

## / TUBE

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|---|-------------|-------------|
|                      | Units/Tube<br>只/套管 | Tubes/Inner Box<br>套管/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Tube 套管                                 | Inner Box 盒 | Outer Box 箱 |
| TO-220/F             | 50                 | 20                      | 1,000                  | 5                            | 5,000                  | 532×31.4×5.5                            | 555×164×50  | 575×290×180 |