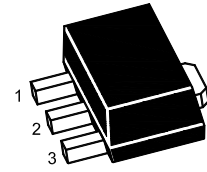


# 8550U

## PNP Silicon Epitaxial Planar Power Transistor

### Applications

- For switching and amplifier
- Especially suitable for AF-driver stages and low power output stages



1.Base 2.Collector 3.Emitter  
SOT-89 Plastic Package

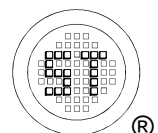
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Parameter                 | Symbol     | Value         | Unit             |
|---------------------------|------------|---------------|------------------|
| Collector Base Voltage    | $-V_{CB0}$ | 40            | V                |
| Collector Emitter Voltage | $-V_{CEO}$ | 25            | V                |
| Emitter Base Voltage      | $-V_{EBO}$ | 6             | V                |
| Collector Current         | $-I_C$     | 1.5           | A                |
| Power Dissipation         | $P_{tot}$  | 1             | W                |
| Junction Temperature      | $T_j$      | 150           | $^\circ\text{C}$ |
| Storage Temperature Range | $T_{Stg}$  | - 55 to + 150 | $^\circ\text{C}$ |

### Thermal Characteristics

| Parameter  | Symbol          | Max. | Unit               |
|--|-----------------|------|--------------------|
| Thermal Resistance-Junction to Ambient <sup>1)</sup> | $R_{\theta JA}$ | 125  | $^\circ\text{C/W}$ |

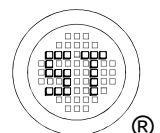
<sup>1)</sup> Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.



# 8550U

## Characteristics at $T_a = 25^\circ\text{C}$

| Parameter   | Symbol                    | Min.     | Typ. | Max. | Unit |   |
|---|---------------------------|----------|------|------|------|---|
| DC Current Gain<br>at $-V_{CE} = 1\text{ V}$ , $-I_C = 5\text{ mA}$<br>at $-V_{CE} = 1\text{ V}$ , $-I_C = 100\text{ mA}$<br>at $-V_{CE} = 1\text{ V}$ , $-I_C = 800\text{ mA}$ | Current Gain Group C<br>D | $h_{FE}$ | 45   | -    | -    | - |
|   |                           | $h_{FE}$ | 120  | -    | 200  | - |
|   |                           | $h_{FE}$ | 160  | -    | 300  | - |
|   |                           | $h_{FE}$ | 40   | -    | -    | - |
| Collector Base Cutoff Current<br>at $-V_{CB} = 35\text{ V}$   | $-I_{CBO}$                | -        | -    | 100  | nA   |   |
| Emitter Base Cutoff Current<br>at $-V_{EB} = 6\text{ V}$  | $-I_{EBO}$                | -        | -    | 100  | nA   |   |
| Collector Base Breakdown Voltage<br>at $-I_C = 100\text{ }\mu\text{A}$  | $-V_{(BR)CBO}$            | 40       | -    | -    | V    |   |
| Collector Emitter Breakdown Voltage<br>at $-I_C = 2\text{ mA}$  | $-V_{(BR)CEO}$            | 25       | -    | -    | V    |   |
| Emitter Base Breakdown Voltage<br>at $-I_E = 100\text{ }\mu\text{A}$  | $-V_{(BR)EBO}$            | 6        | -    | -    | V    |   |
| Collector Emitter Saturation Voltage<br>at $-I_C = 800\text{ mA}$ , $-I_B = 80\text{ mA}$   | $-V_{CE(sat)}$            | -        | -    | 0.5  | V    |   |
| Base Emitter Saturation Voltage<br>at $-I_C = 800\text{ mA}$ , $-I_B = 80\text{ mA}$  | $-V_{BE(sat)}$            | -        | -    | 1.2  | V    |   |
| Base Emitter Voltage<br>at $-I_C = 10\text{ mA}$ , $-V_{CE} = 1\text{ V}$   | $-V_{BE}$                 | -        | -    | 1    | V    |   |
| Gain Bandwidth Product<br>at $-V_{CE} = 10\text{ V}$ , $-I_C = 50\text{ mA}$  | $f_T$                     | 120      | -    | -    | MHz  |   |
| Collector Output Capacitance<br>at $-V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$   | $C_{ob}$                  | -        | 15   | -    | pF   |   |



Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

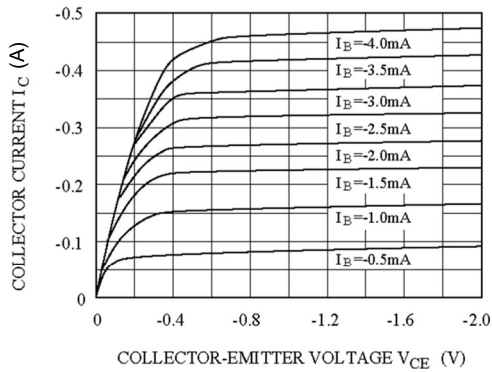


Fig. 2 DC Current Gain vs. Collector Current

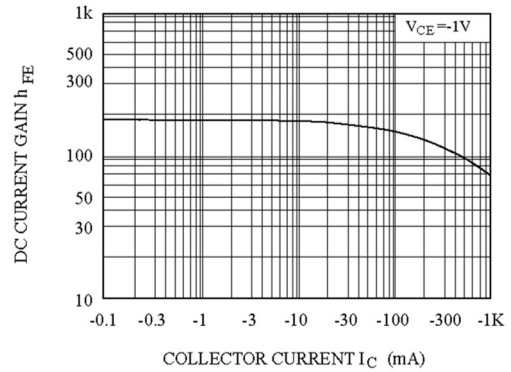


Fig. 3 Collector Current vs. V\_BE

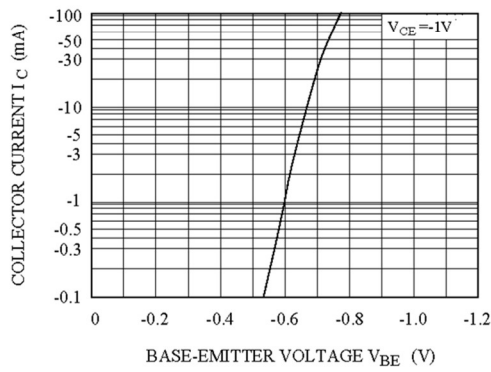


Fig. 4 V\_BE(sat), V\_CE(sat) vs. Collector Current

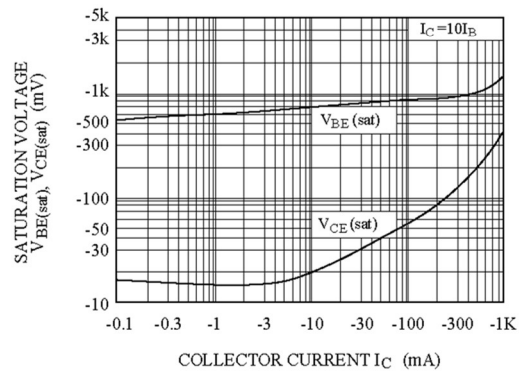


Fig. 5 Transition Frequency

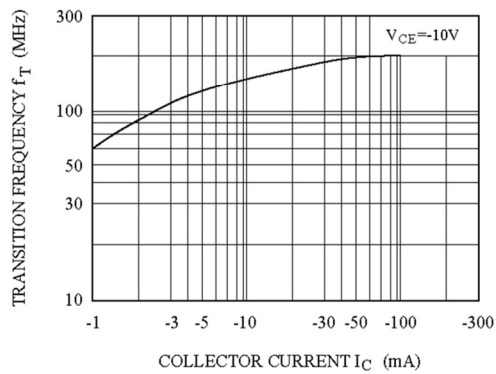
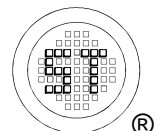
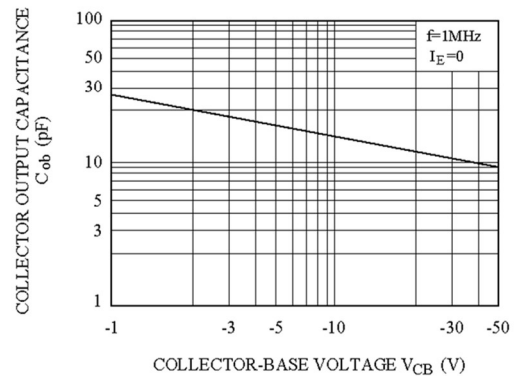
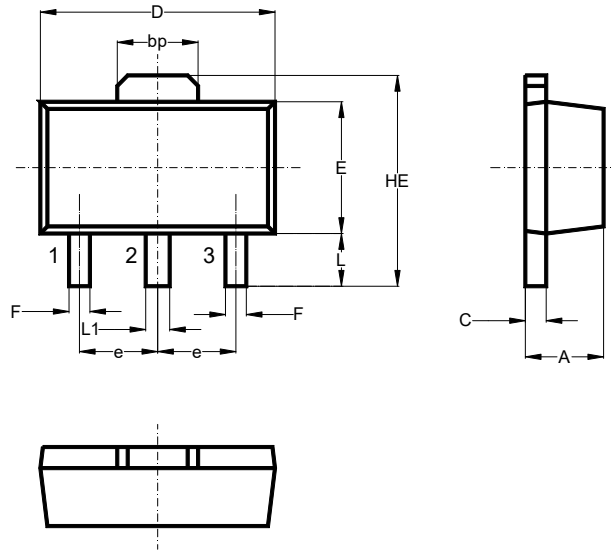


Fig. 6 Output Capacitance



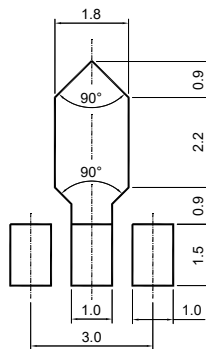
Package Outline (Dimensions in mm)

SOT-89



| Unit | A   | bp   | C   | D   | E   | F    | HE   | e    | L    | L1   |
|------|-----|------|-----|-----|-----|------|------|------|------|------|
| mm   | 1.6 | 1.60 | 0.5 | 4.6 | 2.6 | 0.45 | 4.25 | 1.5  | 1.05 | 0.51 |
|      | 1.4 | 1.50 | 0.3 | 4.4 | 2.4 | 0.35 | 3.75 | typ. | 0.95 | 0.41 |

Recommended Soldering Footprint



Packing information

| Package | Tape Width (mm) | Pitch   |               | Reel Size |      | Per Reel Packing Quantity |
|---------|-----------------|---------|---------------|-----------|------|---------------------------|
|         |                 | mm      | inch          | mm        | inch |                           |
| SOT-89  | 12              | 8 ± 0.1 | 0.315 ± 0.004 | 178       | 7    | 1,000                     |
|         |                 |         |               | 330       | 13   | 4,000                     |

Marking information

" 8550\*U " = Part No. (" \* " = HFE grouping Code)  
 "YM" = Date Code Marking  
 "Y" = Year  
 "M" = Month  
 Font type: Arial

