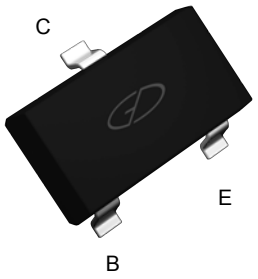
GOOD-ARK
SEMICONDUCTOR

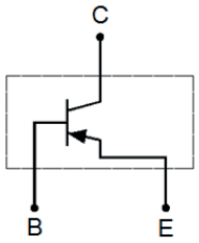
# GSBC858xW
# PNP Transistors

## Features

- Epoxy meets UL 94 V-0 flammability rating
- Small outline surface mount package
- Low current leakage
- For high-speed switching applications




SOT-323




Schematic Diagram

## Maximum Ratings ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | -30 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | -30 | V |
| Emitter-Base Voltage | $V_{EBO}$ | -5 | V |
| Power Dissipation | $I_C$ | -100 | mA |
| Collector Power Dissipation | $P_C$ | 150 | mW |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 833 | ℃/W |
| Junction Temperature | $T_J$ | 150 | ℃ |
| Storage Temperature | $T_{stg}$ | -55 to +150 | ℃ |

## Electrical Characteristics ($T_A$=25°C unless otherwise specified)

| Parameter | | Symbol | Test Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | | $V_{CBO}$ | $I_C$=-10uA, $I_E$=0 | -30 | - | - | V |
| Collector-Emitter Breakdown Voltage | | $V_{CEO}$ | $I_C$=-10mA, $I_B$=0 | -30 | - | - | V |
| Emitter-Base Breakdown Voltage | | $V_{EBO}$ | $I_E$=-1uA, $I_C$=0 | -5 | - | - | V |
| Collector Cut-Off Current | | $I_{CBO}$ | $V_{CB}$=-30V, $I_E$=0 | - | - | -15 | nA |
| DC Current Gain | GSBC858AW | $h_{FE}$ | $V_{CE}$=-5V, $I_C$=-2mA | 125 | - | 250 | - |
| | GSBC858BW | | | 220 | - | 475 | |
| | GSBC858CW | | | 420 | - | 800 | |
| Collector-Emitter Saturation Voltage | | $V_{CE(sat)}$ | $I_C$=-100mA, $I_B$=-5mA | - | - | -0.65 | V |
| Base-Emitter Saturation Voltage | | $V_{BE(sat)}$ | $I_C$=-100mA, $I_B$=-5mA | - | - | -1.1 | V |
| Transition Frequency | | $f_T$ | $V_{CE}$=-5V, $I_C$=-10mA, F=100MHz | 100 | - | - | MHz |
| Collector Output Capacitance | | $C_{ob}$ | $V_{CB}$=-10V, F=1MHz | - | 4.5 | - | pF |

## Typical Characteristic Curves

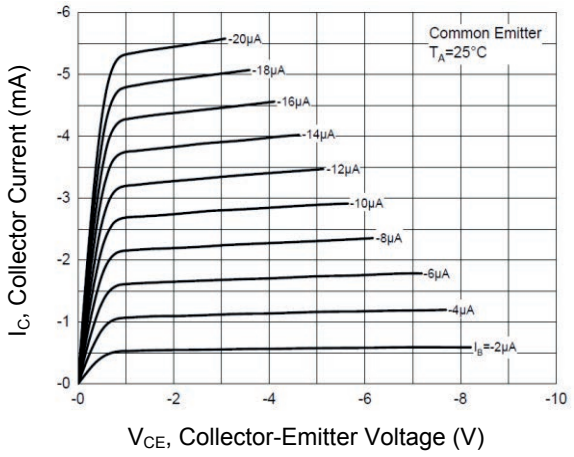



**Figure 1. Static Characteristic**

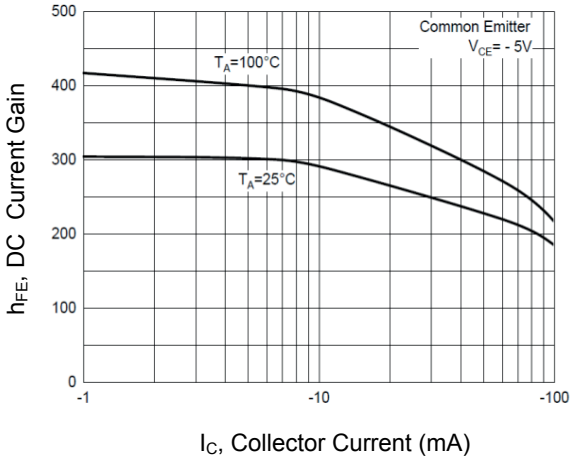



**Figure 2. DC Current Gain Characteristics**

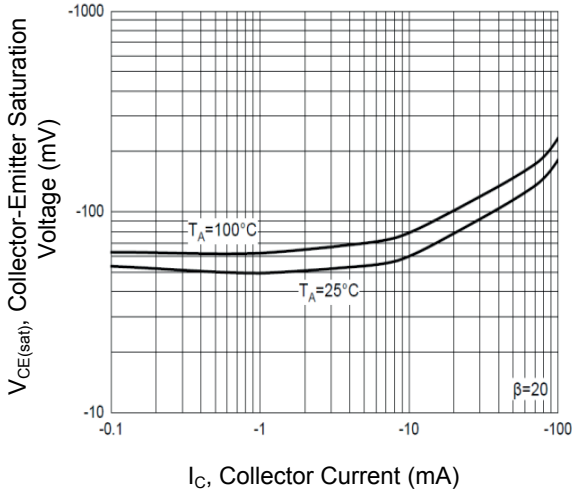



**Figure 3. Collector-Emitter Saturation Voltage Characteristics**

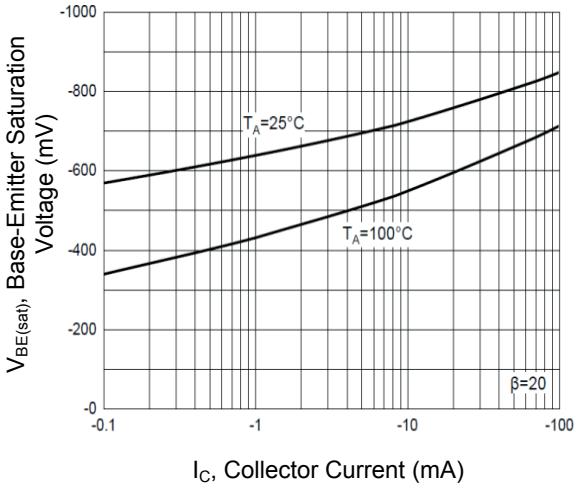



**Figure 4. Base-Emitter Saturation Voltage Characteristics**

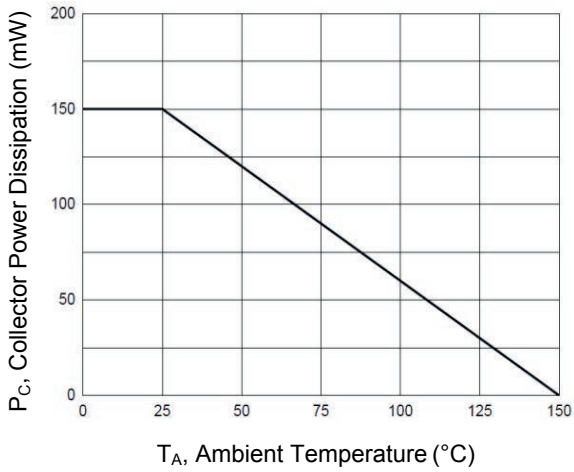
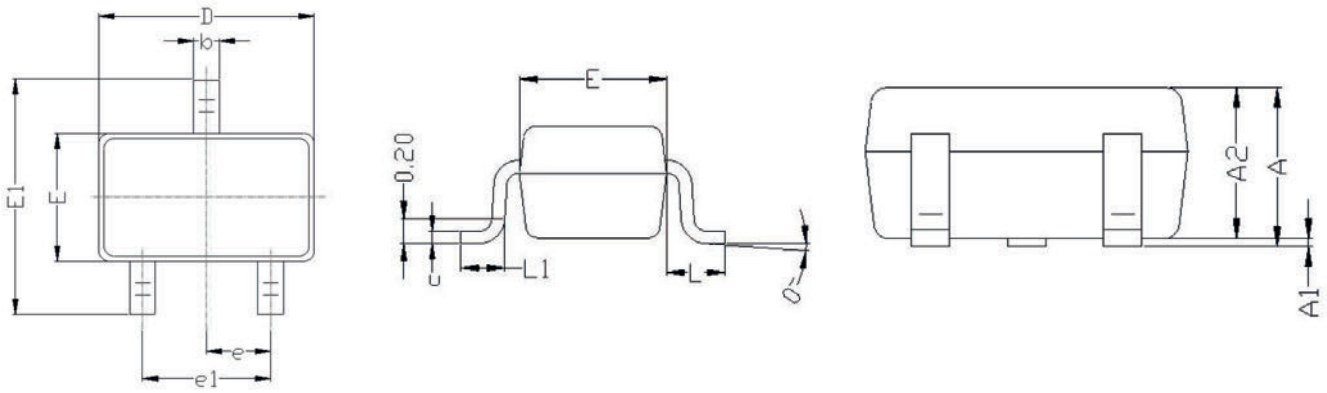


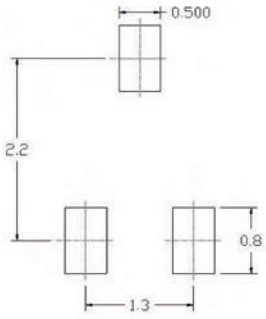

**Figure 5. Collector Power Derating Curve**

## Package Outline Dimensions (SOT-323)




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 0.90 | 1.00 | 0.035 | 0.039 |
| A1 | 0.00 | 0.10 | 0.000 | 0.004 |
| A2 | 0.90 | 1.00 | 0.035 | 0.039 |
| b | 0.20 | 0.40 | 0.008 | 0.016 |
| C | 0.08 | 0.15 | 0.003 | 0.006 |
| D | 2.00 | 2.20 | 0.079 | 0.087 |
| E | 1.15 | 1.35 | 0.045 | 0.053 |
| E1 | 2.15 | 2.45 | 0.085 | 0.096 |
| e | 0.650 TYP | | 0.026 TYP | |
| e1 | 1.20 | 1.40 | 0.047 | 0.055 |
| L | 0.525 REF | | 0.021 REF | |
| L1 | 0.26 | 0.46 | 0.010 | 0.018 |
| θ | 0° | 8° | 0° | 8° |

## Recommended Pad Layout




Note:

1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference purposes only

## Order Information

| Device | Package | Marking | Quantity | HSF Status |
|---|---|---|---|---|
| GSBC858AW | SOT-323 | 3J | 3,000pcs / Reel | RoHS Compliant |
| GSBC858BW | SOT-323 | 3K | 3,000pcs / Reel | RoHS Compliant |
| GSBC858CW | SOT-323 | 3L | 3,000pcs / Reel | RoHS Compliant |