



SSCN81740GS7

High Frequency High Gain NPN Power BJT

➤ Features

| VCB | VCE | VEB | IC |
|-----|-----|-----|------|
| 50V | 45V | 5V | 0.5A |

➤ Description

This device is produced with advanced high carrier density technology, which is especially used to minimize saturation voltage drop. This device particularly suits low voltage applications such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package. Excellent thermal and electrical capabilities.

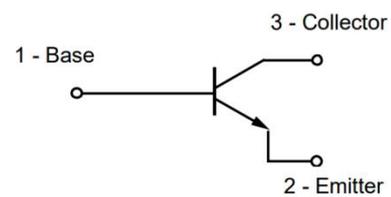
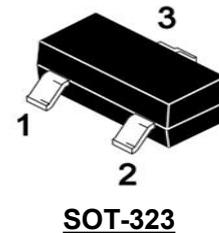
➤ Applications

- Supply line switching circuits
- Battery management application
- DC/DC converter applications

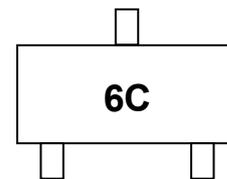
➤ Ordering Information

| Device | Package | Shipping |
|--------------|---------|-----------|
| SSCN81740GS7 | SOT-323 | 3000/Reel |

➤ Pin configuration



Circuit Diagram



Marking (Top View)



➤ **Absolute Maximum Ratings**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

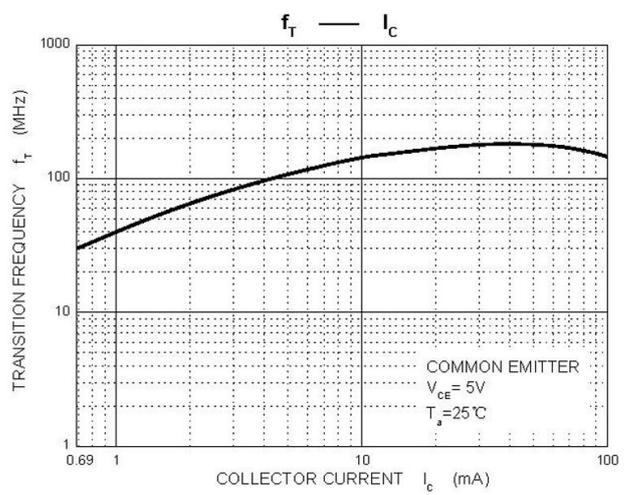
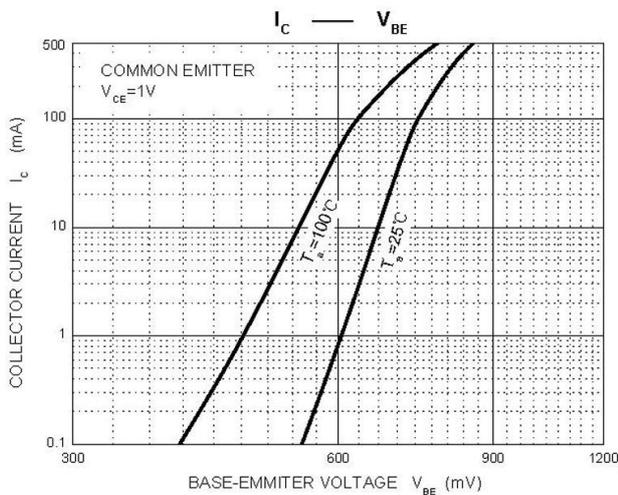
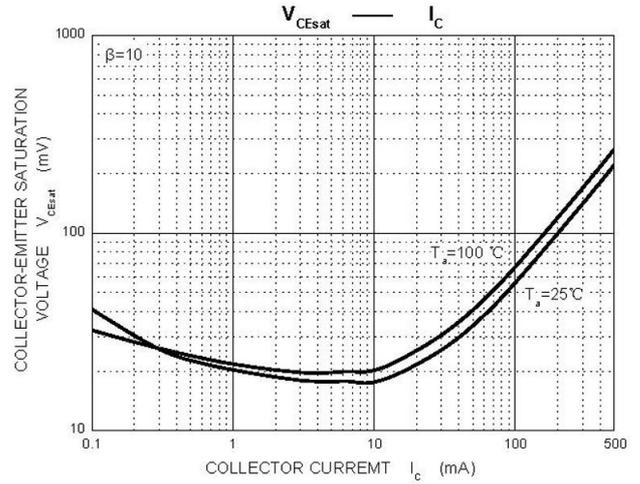
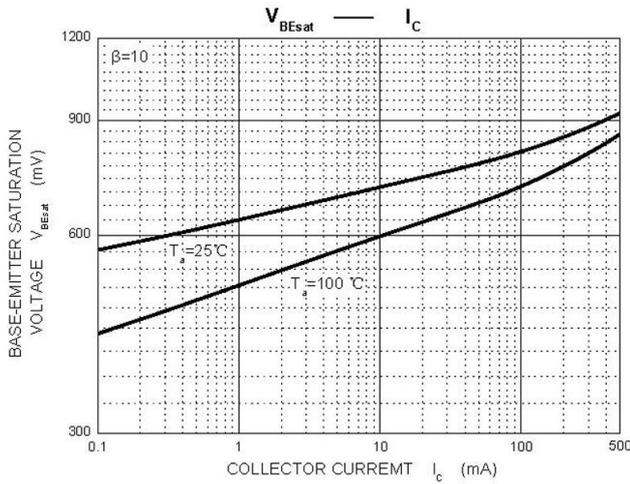
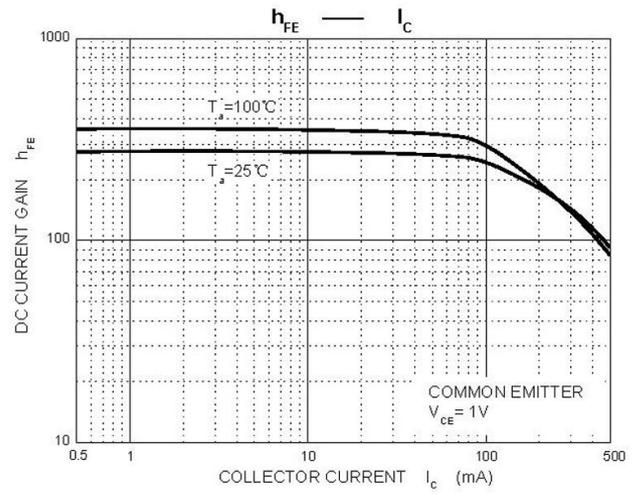
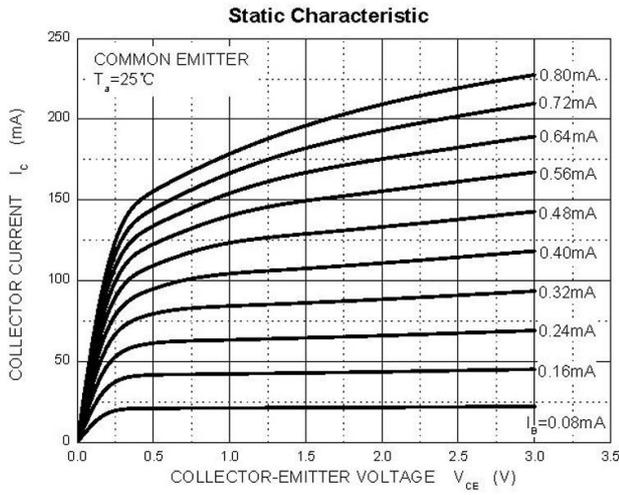
| Parameter | Symbol | Value | Unit |
|---|-----------------|------------|-----------------------------|
| Collector-Base Voltage | V_{CB0} | 50 | V |
| Collector- Emitter Voltage | V_{CEO} | 45 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector Current-Continuous | I_C | 500 | mA |
| Collector Power Dissipation | P_C | 200 | mW |
| Thermal resistance from junction to ambient | $R_{\theta JA}$ | 625 | $^{\circ}\text{C}/\text{W}$ |
| Junction Temperature | T_J | -55 to 150 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -55 to 150 | $^{\circ}\text{C}$ |

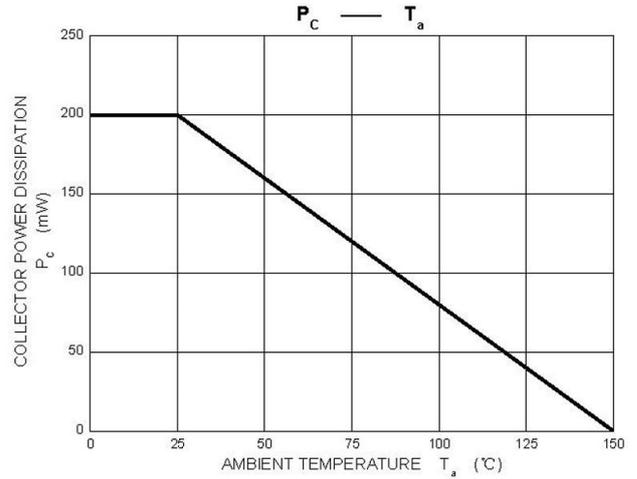
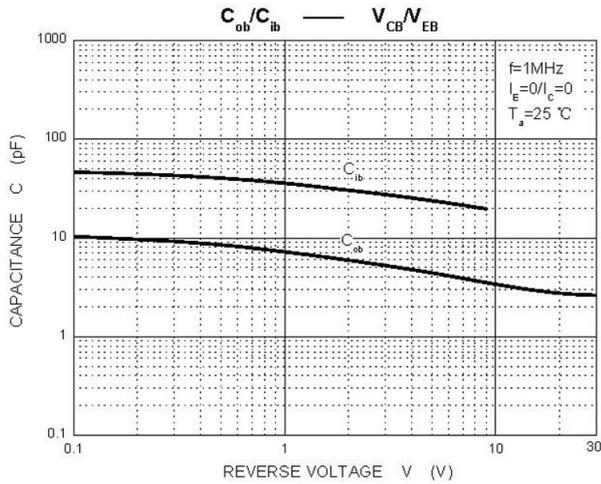
➤ **Electrical Characteristics** ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|--------------------------------------|---------------|--|------|------|------|---------------|
| Collector-Base Breakdown Voltage | BV_{CB0} | $I_C=10\mu\text{A}, I_E=0$ | 50 | | | V |
| Collector-emitter Breakdown Voltage | BV_{CEO} | $I_C=10\text{mA}, I_B=0$ | 45 | | | V |
| Emitter -Base Breakdown Voltage | BV_{EBO} | $I_E=1\mu\text{A}, I_C=0$ | 5 | | | V |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=20\text{V}, I_E=0$ | | | 0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=5\text{V}, I_C=0$ | | | 0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=1\text{V}, I_C=100\text{mA}$ | 250 | | 600 | |
| | | $V_{CE}=1\text{V}, I_C=500\text{mA}$ | 40 | | | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ | | | 0.7 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ | | | 1.2 | V |
| Base-emitter Voltage | V_{BE} | $V_{CE}=1\text{V}, I_C=500\text{mA}$ | | | 1.2 | V |
| Collector Output Capacitance | C_{ob} | $V_{CB}=10\text{V}, f=1\text{MHz}$ | | 10 | | pF |
| Transition frequency | f_T | $V_{CE}=5\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$ | 100 | | | MHz |

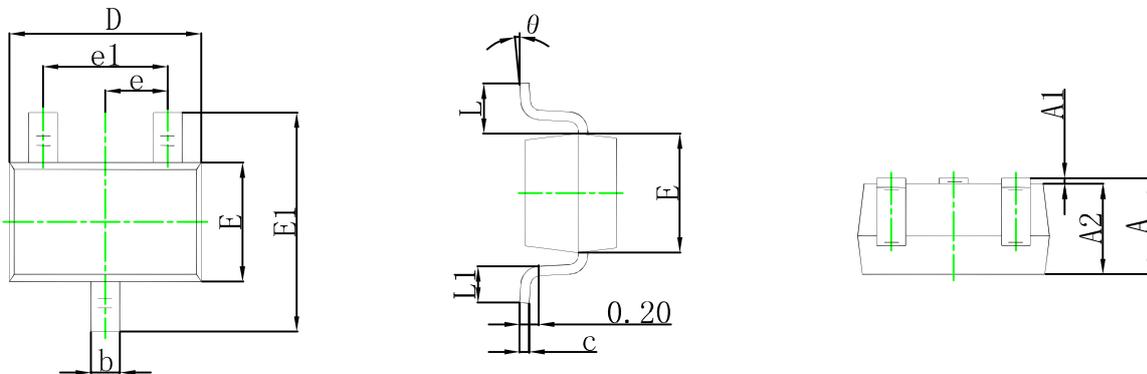


Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)





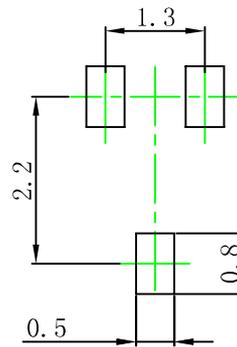
➤ Package Information



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.100 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.000 | 0.035 | 0.039 |
| b | 0.200 | 0.400 | 0.008 | 0.016 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.000 | 2.200 | 0.079 | 0.087 |
| E | 1.150 | 1.350 | 0.045 | 0.053 |
| E1 | 2.150 | 2.450 | 0.085 | 0.096 |
| e | 0.650 TYP | | 0.026 TYP | |
| e1 | 1.200 | 1.400 | 0.047 | 0.055 |
| L | 0.525 REF | | 0.021 REF | |
| L1 | 0.260 | 0.460 | 0.010 | 0.018 |
| θ | 0° | 8° | 0° | 8° |



Recommended Pad outline (Unit: mm)



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