



2SC2222H

NPN General Purpose Switching Transistor

Voltage

40V

Current

600mA

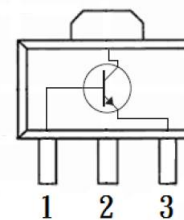
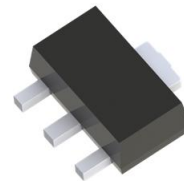
Features

- NPN epitaxial Silicon, Planar Design
- Collector-emitter voltage $V_{CE} = 40V$
- Collector current = 600mA
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive)
- Green molding compound as per IEC61249 Std.. (Halogen Free)

Mechanical Data

- Case: SOT-89 Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.002 ounces, 0.057grams
- Marking: C2H

SOT-89



Pin Assignment: 1. Base
2. Collector
3. Emitter

Maximum Ratings and Thermal Characteristics ($T_A=25^{\circ}C$ unless otherwise noted)

| PARAMETER | SYMBOL | LIMIT | UNITS |
|--|-----------------|---------|---------------|
| Collector-Base Voltage | V_{CBO} | 75 | V |
| Collector-Emitter Voltage | V_{CEO} | 40 | V |
| Emitter-Base Voltage | V_{EBO} | 6 | V |
| Collector Current (DC) | I_C | 600 | mA |
| Collector Current (Pulse) | I_{CP} | 800 | mA |
| Total Power Dissipation | P_{TOT} | 1.1 | W |
| Junction to Ambient (Note1) | $R_{\theta JA}$ | 250 | $^{\circ}C/W$ |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55~150 | $^{\circ}C$ |

Note1: Transistor mounted on a FR4 PCB, single-sided copper, tin-plated and standard footprint.



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

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNITS |
|--------------------------------------|---------------|---|------|------|------|-------|
| OFF Characteristics | | | | | | |
| Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C= 1.0\text{mA}, I_B= 0\text{A}$ | 40 | - | - | V |
| Collector-Base Breakdown Voltage | BV_{CBO} | $I_C= 10\mu\text{A}, I_E= 0\text{A}$ | 75 | - | - | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E= 10\mu\text{A}, I_C= 0\text{A}$ | 6 | - | - | V |
| Collector-Base Cutoff Current | I_{CBO} | $V_{CB}= 60\text{V}, I_E= 0\text{A}$ | - | - | 10 | nA |
| Emitter-Base Cutoff Current | I_{EBO} | $V_{EB}= 3\text{V}$ | - | - | 10 | nA |
| Collector-Emitter Cutoff Current | I_{CES} | $V_{CES}= 60\text{V}$ | - | - | 10 | nA |
| ON characteristics | | | | | | |
| DC Current Gain | h_{FE} | $V_{CE}= 10\text{V}, I_C= 0.1\text{mA}$ | 35 | - | - | - |
| | | $V_{CE}= 10\text{V}, I_C= 1\text{mA}$ | 50 | - | - | |
| | | $V_{CE}= 10\text{V}, I_C= 10\text{mA}$ | 75 | - | - | |
| | | $V_{CE}= 10\text{V}, I_C= 150\text{mA}$ | 100 | - | 300 | |
| | | $V_{CE}= 1\text{V}, I_C= 150\text{mA}$ | 50 | - | - | |
| | | $V_{CE}= 10\text{V}, I_C= 500\text{mA}$ | 40 | - | - | |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C= 150\text{mA}, I_B= 15\text{mA}$ | - | - | 0.3 | V |
| | | $I_C= 500\text{mA}, I_B= 50\text{mA}$ | - | - | 1.0 | |
| Base-Emitter Saturation voltage | $V_{BE(SAT)}$ | $I_C= 150\text{mA}, I_B= 15\text{mA}$ | - | - | 1.2 | V |
| | | $I_C= 500\text{mA}, I_B= 50\text{mA}$ | - | - | 2.0 | |
| Collector-Base Capacitance | C_{CBO} | $V_{CB}= 10\text{V}, f=1\text{MHz}$ | - | - | 8 | pF |
| Emitter-Base Capacitance | C_{EBO} | $V_{CB}= 0.5\text{V}, f=1\text{MHz}$ | - | - | 25 | |
| Delay Time | t_d | $V_{CC}= 3\text{V}, V_{BE}= -5\text{V}$ | - | - | 10 | nS |
| Rise Time | t_r | $I_C= 150\text{mA}, I_B= 15\text{mA}$ | - | - | 25 | |
| Storage Time | t_s | $V_{CC}= 30\text{V}, I_C= 150\text{mA}$ | - | - | 225 | |
| Fall Time | t_f | $I_{B1} = I_{B2} = 15\text{mA}$ | - | - | 60 | |
| Turn-on Time | t_{on} | $I_C= 150\text{mA}, I_{BON} = 15\text{mA}$ | - | - | 35 | |
| Turn-off Time | t_{off} | $I_{BOFF} = -15\text{mA}$ | - | - | 250 | |
| Transition Frequency | f_T | $V_{CE} = 10\text{V}; I_C = 20\text{mA}$ $F = 100\text{MHz}$ | 300 | - | - | MHz |



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TYPICAL CHARACTERISTIC CURVES

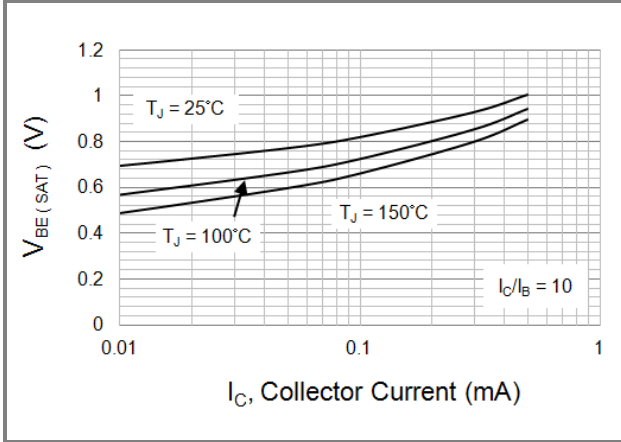


Fig.1 Typical Base-Emitter Saturation Voltage

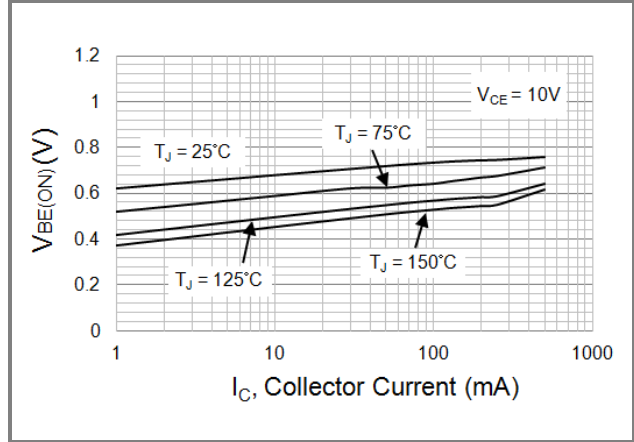


Fig.2 Typical Base-Emitter Turn-on Voltage

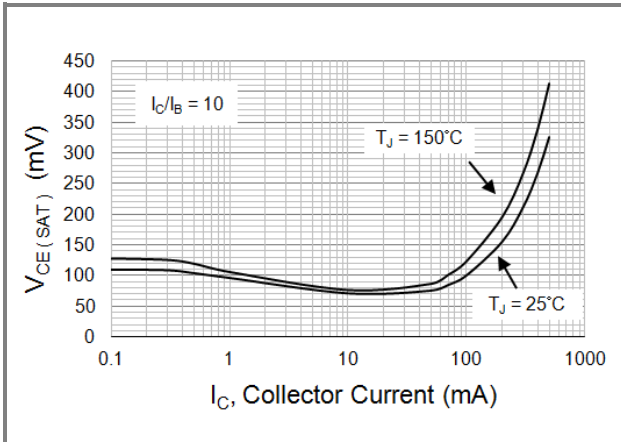


Fig.3 Typical Collector-Emitter Saturation

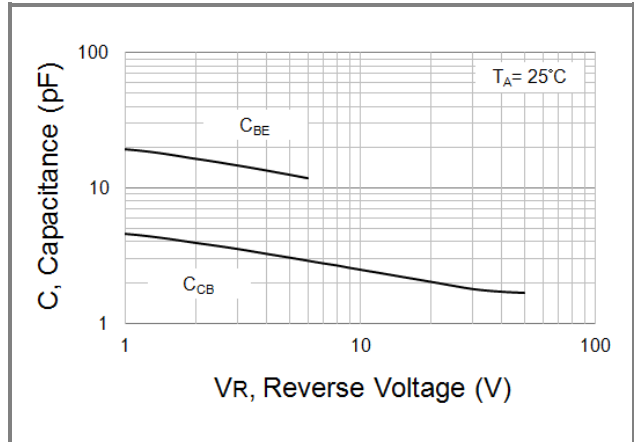


Fig.4 Typical Capacitance

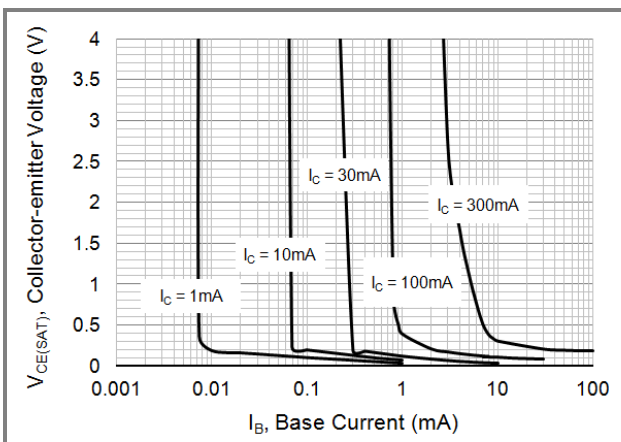


Fig.5 Typical Collector Saturation Region



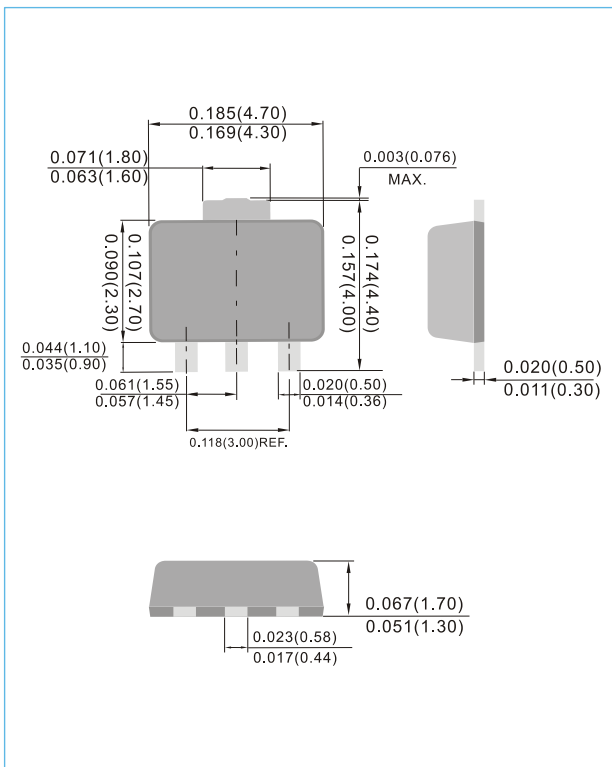
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Part No Packing Code Version

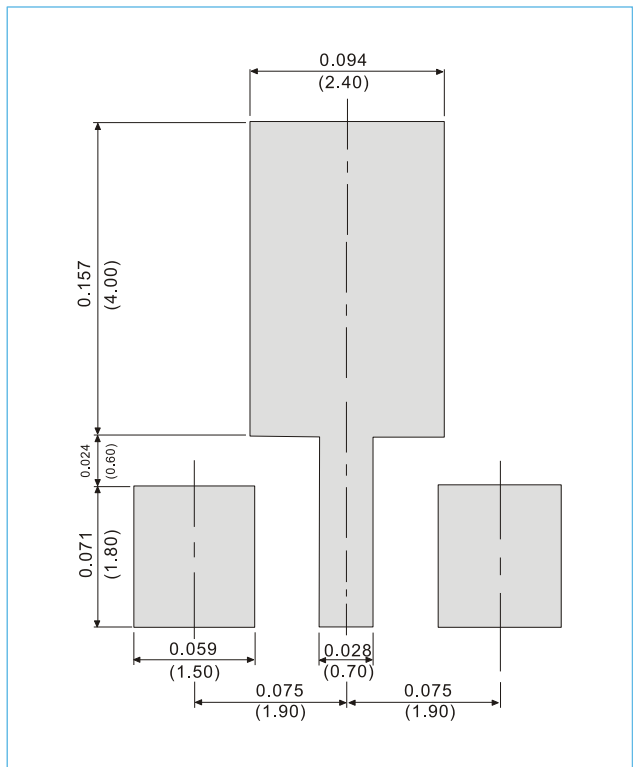
| Part No Packing Code | Package Type | Packing Type | Marking | Version |
|----------------------|--------------|-------------------|---------|--------------|
| 2SC2222H_R1_00001 | SOT-89 | 1000pcs / 7" reel | C2H | Halogen free |

Packaging Information & Mounting Pad Layout

SOT-89 Unit : inch(mm)



SOT-89 Unit : inch(mm)





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