

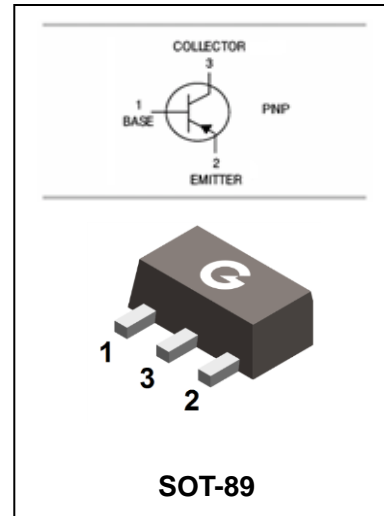
PNP Epitaxial Silicon Transistor

2SA1020

FEATURES

- Low saturation voltage:
 $V_{CE(sat)} = -0.5 \text{ V (max) (} I_C = -1 \text{ A)}$
- High-speed switching: $t_{stg} = 1.0 \mu\text{s (typ.)}$
- Complement to 2SC2655

HF



APPLICATIONS

- Power and voltage amplifier application

ORDERING INFORMATION

| Type No. | Marking | Package Code |
|----------|---------|--------------|
| 2SA1020 | A1020 | SOT-89 |

MAXIMUM RATING @ $T_a=25^\circ\text{C}$ unless otherwise specified

| Symbol | Parameter | Value | Units |
|----------------|----------------------------------|-------------|------------------|
| V_{CBO} | Collector-Base Voltage | -50 | V |
| V_{CEO} | Collector-Emitter Voltage | -50 | V |
| V_{EBO} | Emitter-Base Voltage | -5 | V |
| I_C | Collector Current -Continuous | -2 | A |
| I_B | Base current | 0.5 | A |
| P_C | Collector Power Dissipation | 0.5 | W |
| P_C^* | Collector Power Dissipation | 1 | W |
| T_j, T_{stg} | Junction and Storage Temperature | -55 to +150 | $^\circ\text{C}$ |

* : Mounted on ceramic substrate($250\text{mm}^2 \times 0.8\text{t}$)

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|------------------------------|-----|-----|------|---------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=-1mA, I_E=0$ | -50 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=-10mA, I_B=0$ | -50 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=-1mA, I_C=0$ | -5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=-50V, I_E=0$ | | | -1.0 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=-5V, I_C=0$ | | | -1.0 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE}=-2V, I_C=-0.5A$ | 70 | | 240 | |
| | $h_{FE(2)}$ | $V_{CE}=-2V, I_C=-1.5A$ | 40 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=-1A, I_B=-0.05A$ | | | -0.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=-1A, I_B=-0.05A$ | | | -1.2 | V |
| Transition frequency | f_T | $V_{CE}=-2V, I_C=-0.5A$ | | 100 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB}=-10V, I_E=0, f=1MHz$ | | 40 | | pF |

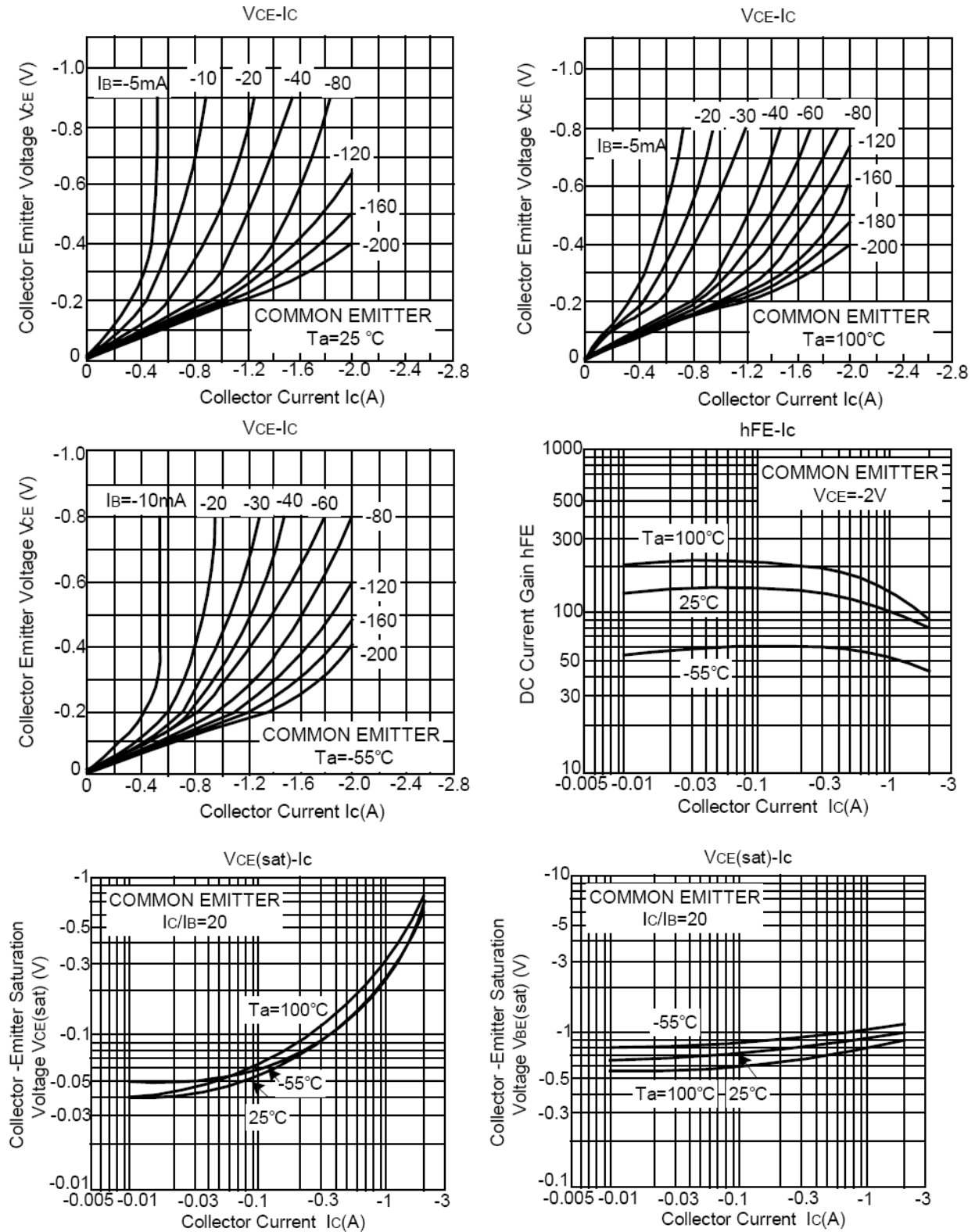
CLASSIFICATION OF $h_{FE(1)}$

| | | |
|-------|--------|---------|
| Rank | O | Y |
| Range | 70-140 | 120-240 |

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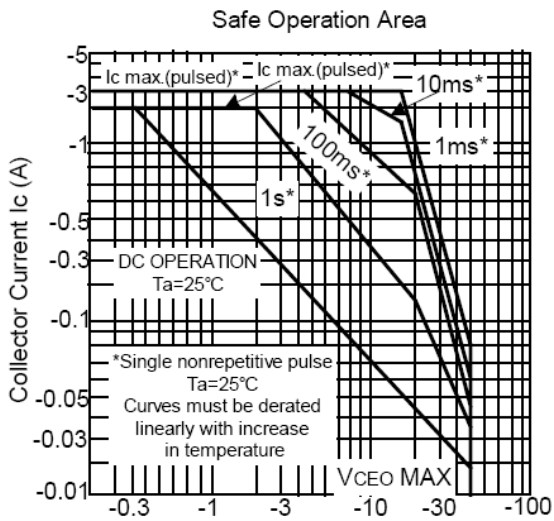
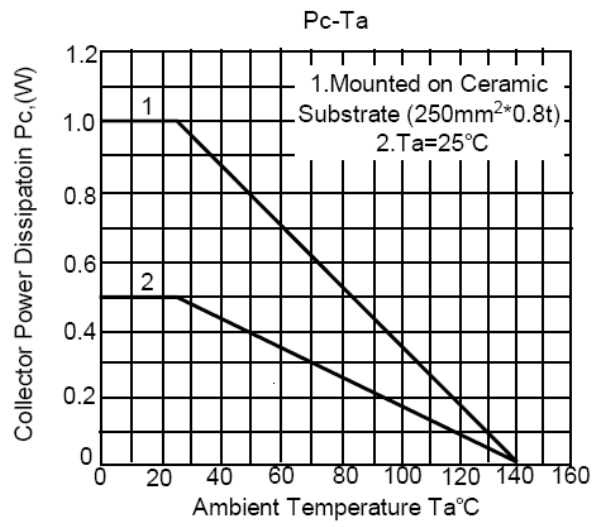
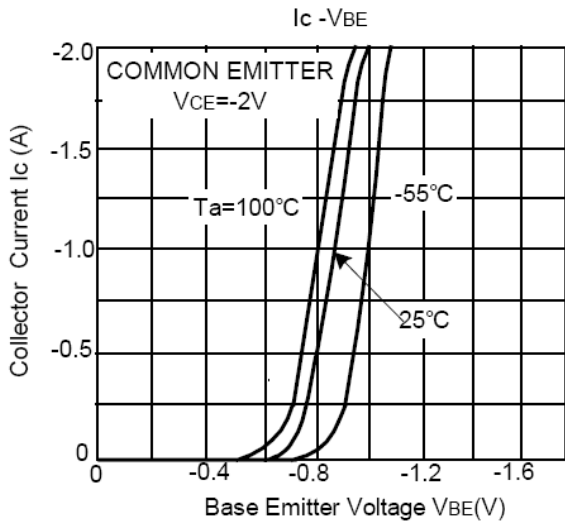
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TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified



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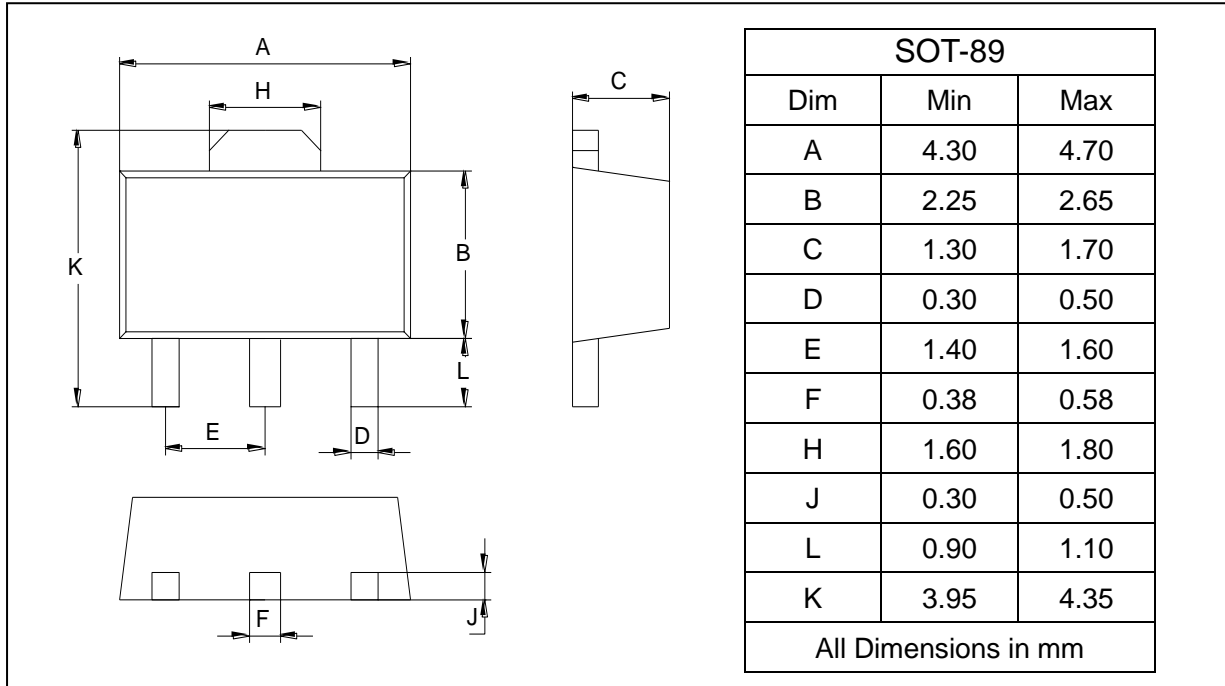
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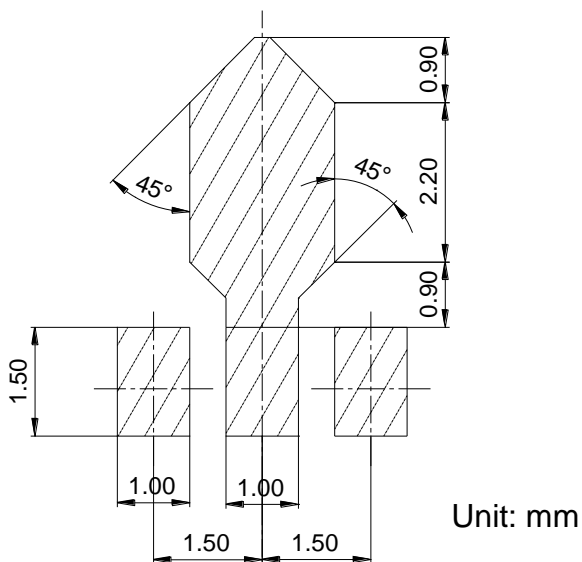
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

| Device | Package | Shipping |
|---------|---------|------------------------|
| 2SA1020 | SOT-89 | 1000 pcs / Tape & Reel |