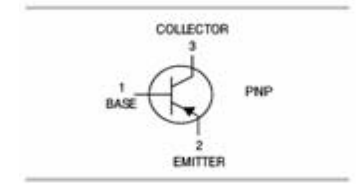
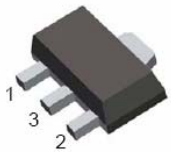
# Plastic-Encapsulate Transistors **2SA2071**

## FEATURES

- High speed switching.
- Low saturation voltage, typically
- Strong discharge power for inductive load and capacitance load.
- Complements the 2SC5824High voltage

Lead-free




**SOT-89**

## ORDERING INFORMATION

| Type No. | Marking | Package Code |
|---|---|---|
| 2SA2071 | UNQ | SOT-89 |

## MAXIMUM RATING @ Ta=25℃ unless otherwise specified

| **Symbol** | **Parameter** | **Value** | **Units** |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | -60 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | -60 | V |
| $V_{EBO}$ | Emitter-Base Voltage | -6 | V |
| $I_C$ | Collector Current | -3 | A |
| $P_C$ | Collector Dissipation | 500 | mW |
| $T_j$,$T_{stg}$ | Junction and Storage Temperature | -55 to +150 | ℃ |

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## ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C$=-100uA,$I_E$=0 | -60 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C$=-1mA,$I_B$=0 | -60 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E$=-100uA,$I_C$=0 | -6 | | | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$=-40V,$I_E$=0 | | | -1 | μA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$=-4V,$I_C$=0 | | | -1 | μA |
| DC current gain | $h_{FE}$ | $V_{CE}$=-2V,$I_C$=-100mA | 120 | | 270 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=-2A,$I_B$=-0.2A | | -200 | -500 | mV |
| Transition frequency | $f_T$ | $V_{CE}$=-10V, $I_E$=10mA, f=1MHz | | 180 | | MHz |
| Collector output capacitance | $C_{ob}$ | $V_{CB}$=-10V,$I_E$=0,f=1MHz | | 50 | | pF |

## CLASSIFICATION OF $h_{FE}$

| | |
|---|---|
| Rank | Q |
| Range | 120-270 |
| Marking | UNQ |

## TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

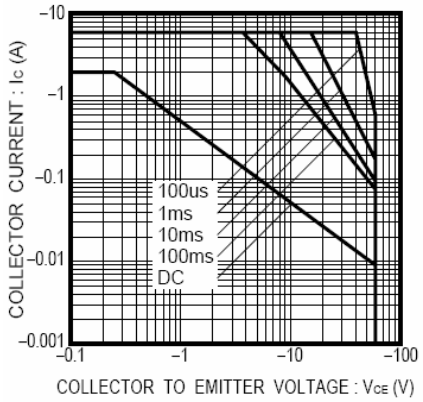


Fig.1 Safe Operating Area

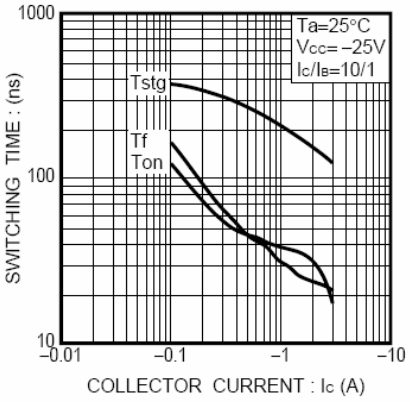


Fig.2 Switching Time

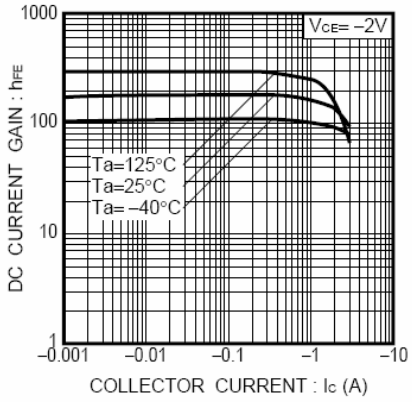


Fig.3 DC Current Gain vs. Collector Current (I)

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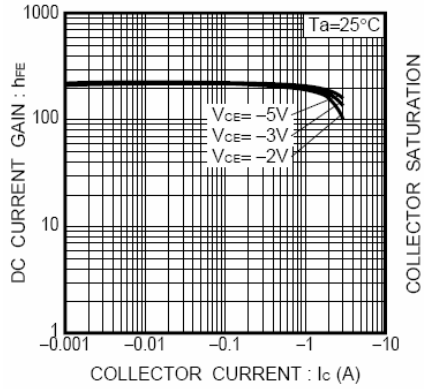


Fig.4 DC Current Gain vs. Collector Current (II)

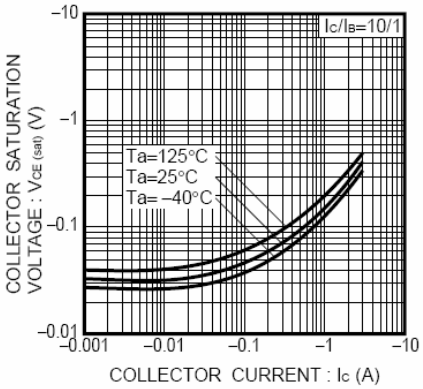


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

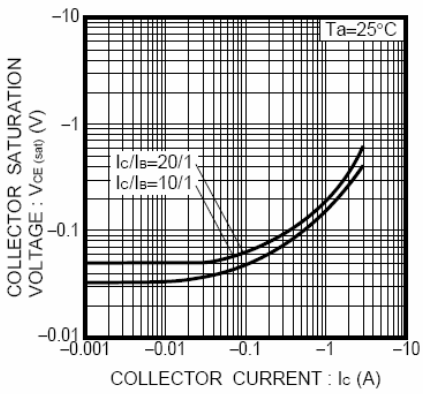


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

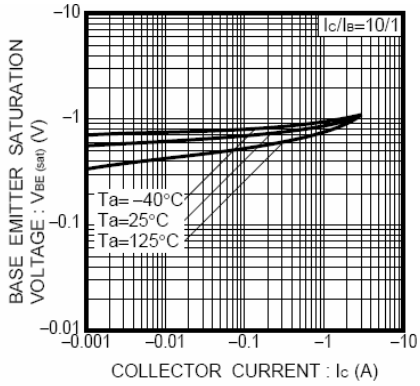


Fig.7 Base-Emitter Saturation Voltage vs. Collecter Current

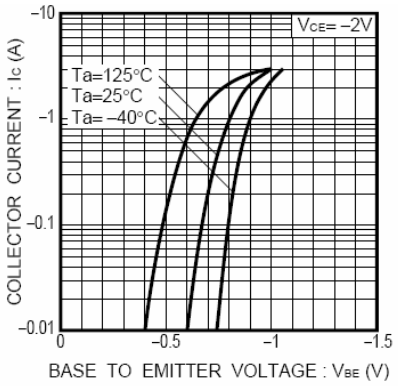


Fig.8 Grounded Emitter Propagation Characteristics

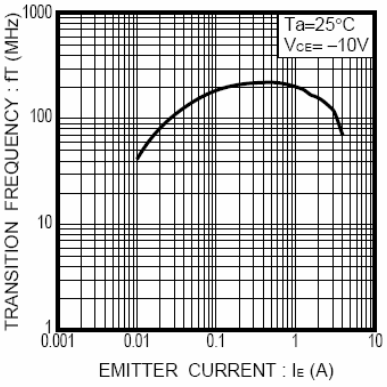


Fig.9 Transition Frequency

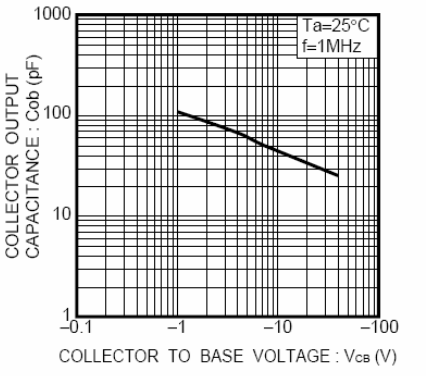


Fig.10 Collector Output Capacitance

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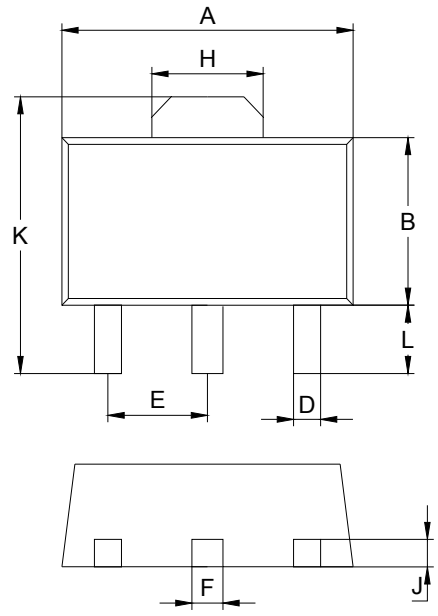
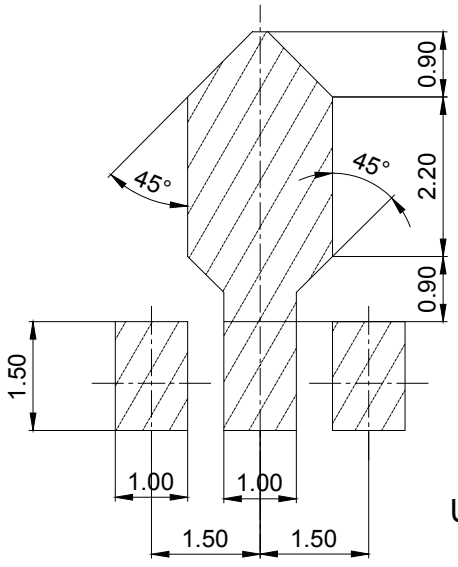
## PACKAGE OUTLINE

Plastic surface mounted package SOT-89




| SOT-89 | | |
|---|---|---|
| Dim | Min | Max |
| A | 4.30 | 4.70 |
| B | 2.25 | 2.65 |
| C | 1.50 Typical | |
| D | 0.40 Typical | |
| E | 1.40 | 1.60 |
| F | 0.48 Typical | |
| H | 1.60 | 1.80 |
| J | 0.40 Typical | |
| L | 0.90 | 1.10 |
| K | 3.95 | 4.35 |
| All Dimensions in mm | | |

## SOLDERING FOOTPRINT




Unit:mm

## PACKAGE INFORMATION

| Device | Package | Shipping |
|---|---|---|
| 2SA2071 | SOT-89 | 1000/Tape&Reel |