

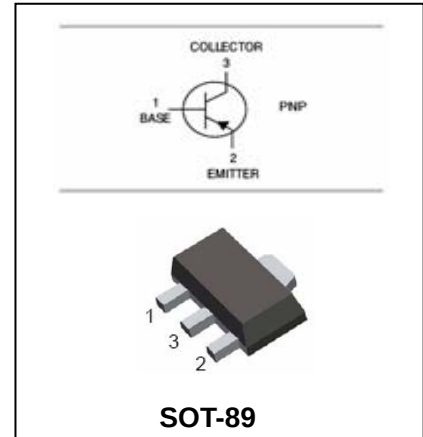


## PNP Switching Transistor

**PXT3906**

### FEATURES

- High current(max.600mA).
- Low voltage(max.40V).
- Complement:PXT3904.



### APPLICATIONS

- High-speed saturated switching amplification.

### ORDERING INFORMATION

| Type No. | Marking | Package Code |
|----------|---------|--------------|
| PXT3906  | 2A      | SOT-89       |

### MAXIMUM RATING @ Ta=25°C unless otherwise specified

| Symbol                            | Parameter                        | Value       | Unit |
|-----------------------------------|----------------------------------|-------------|------|
| V <sub>CBO</sub>                  | Collector-Base Voltage           | -40         | V    |
| V <sub>CEO</sub>                  | Collector-Emitter Voltage        | -40         | V    |
| V <sub>EBO</sub>                  | Emitter-Base Voltage             | -6          | V    |
| I <sub>C</sub>                    | Collector Current -Continuous    | -100        | mA   |
| I <sub>CM</sub>                   | Peak Collector Current           | -200        | mA   |
| I <sub>BM</sub>                   | Peak Base Current                | -100        | mA   |
| P <sub>D</sub>                    | Total Device Dissipation         | 450         | mW   |
| T <sub>j</sub> , T <sub>stg</sub> | Junction and Storage Temperature | -65 to +150 | °C   |



## PNP Switching Transistor

## PXT3906

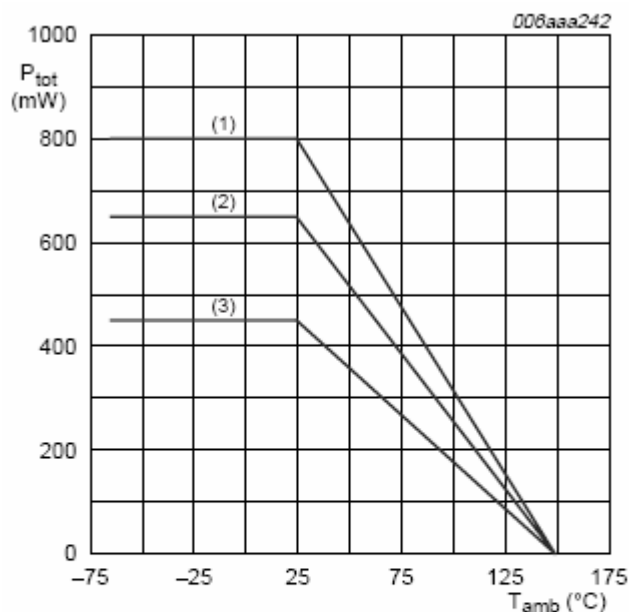
### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

| Parameter                            | Symbol        | Test conditions                                                                    | MIN   | MAX            | UNIT    |
|--------------------------------------|---------------|------------------------------------------------------------------------------------|-------|----------------|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = -10\mu A$ $I_E = 0$                                                         | -40   |                | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = -1mA$ $I_B = 0$                                                             | -40   |                | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = -10\mu A$ $I_C = 0$                                                         | -6    |                | $\mu V$ |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = -30V$ $I_E = 0$                                                          |       | -50            | nA      |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = -6V$ , $I_C = 0$                                                         |       | -50            | nA      |
| DC current gain                      | $h_{FE}$      | $V_{CE} = -1V$ $I_C = -100\mu A$                                                   | 60    | -              |         |
|                                      |               | $V_{CE} = -1V$ $I_C = -1mA$                                                        | 80    | -              |         |
|                                      |               | $V_{CE} = -1V$ $I_C = -10mA$                                                       | 100   | 300            |         |
|                                      |               | $V_{CE} = -1V$ $I_C = -50mA$                                                       | 60    | -              |         |
|                                      |               | $V_{CE} = -1V$ $I_C = -100mA$                                                      | 30    | -              |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -10mA$ $I_B = -1mA$<br>$I_C = -50mA$ $I_B = -5mA$                           |       | -0.25<br>-0.4  | V       |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = -10mA$ $I_B = -1mA$<br>$I_C = -50mA$ $I_B = -5mA$                           | -0.65 | -0.85<br>-0.95 | V       |
| Transition frequency                 | $f_T$         | $V_{CE} = -20V$ , $I_C = -10mA$ ,<br>$f = 100MHz$                                  | 250   | -              | MHz     |
| Collector Capacitance                | $C_c$         | $V_{CB} = -5V$ , $f = 1MHz$ , $I_E = 0$                                            | -     | 4.5            | pF      |
| Emitter Capacitance                  | $C_e$         | $V_{EB} = -0.5V$ , $f = 1MHz$ $I_C = 0$                                            | -     | 10             | pF      |
| Noise Figure                         | F             | $I_C = -100\mu A$ , $V_{CE} = -5V$ ,<br>$R_S = 1k\Omega$ , $f = 10Hz$ to $15.7kHz$ | -     | 4              | dB      |
| Turn-on Time                         | $T_{on}$      | $I_{Con} = -10mA$ ,<br>$I_{Bon} = -1mA$ , $I_{Boff} = -1mA$                        | -     | 65             | ns      |
| Delay Time                           | $t_d$         |                                                                                    | -     | 35             | ns      |
| Rise Time                            | $t_r$         |                                                                                    | -     | 35             | ns      |
| Turn-on Time                         | $t_{off}$     |                                                                                    | -     | 300            | ns      |
| Storage Time                         | $t_s$         |                                                                                    | -     | 225            | ns      |
| Fall Time                            | $t_f$         |                                                                                    | -     | 75             | ns      |

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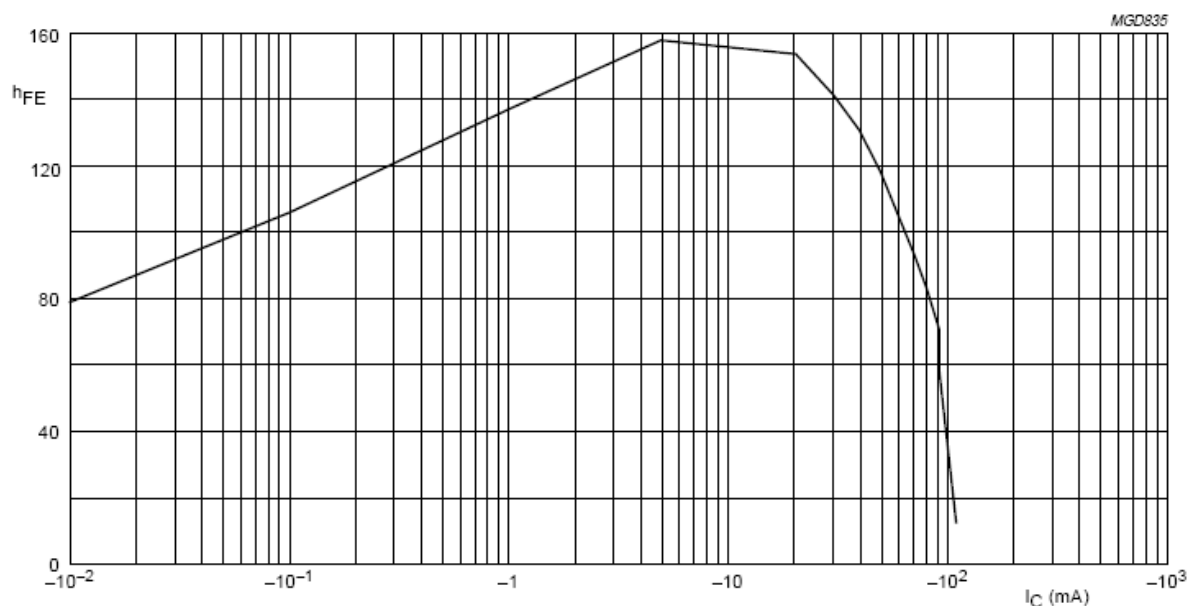
**PXT3906**

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



- (1) FR4 PCB; 6 cm<sup>2</sup> mounting pad for collector.
- (2) FR4 PCB; 1 cm<sup>2</sup> mounting pad for collector.
- (3) FR4 PCB; standard footprint.

Power derating curves.



$V_{CE} = -1 \text{ V}$ .

Fig.6 DC current gain; typical values.

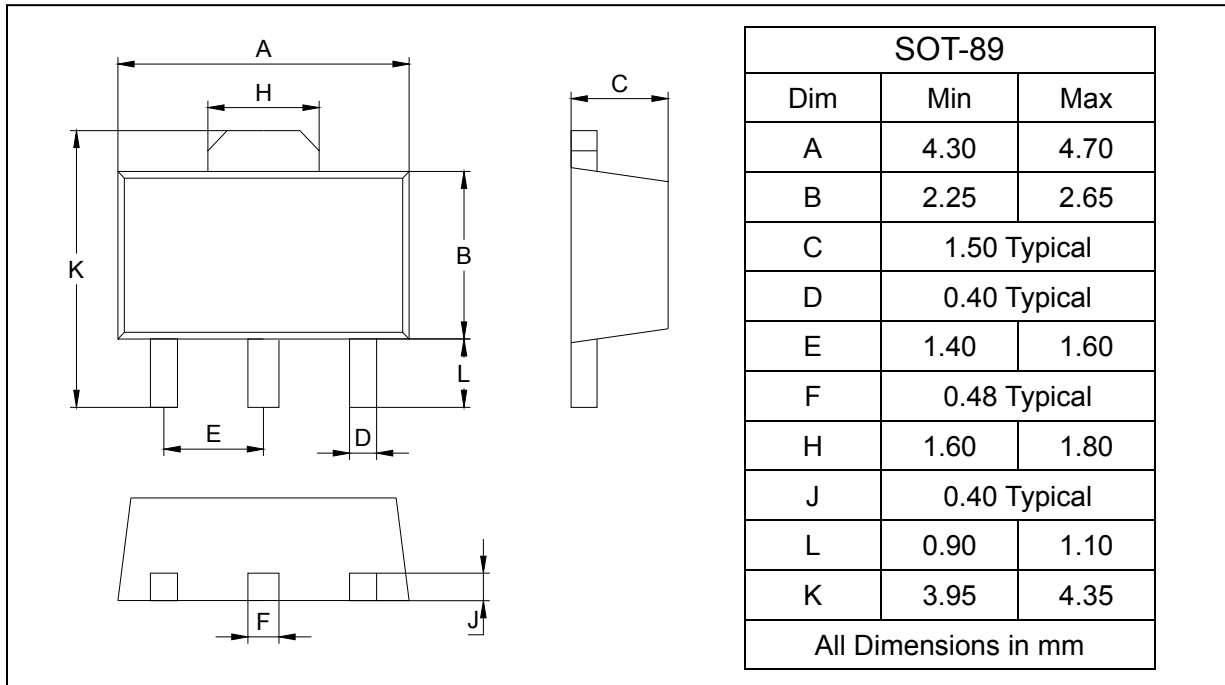
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**PXT3906**

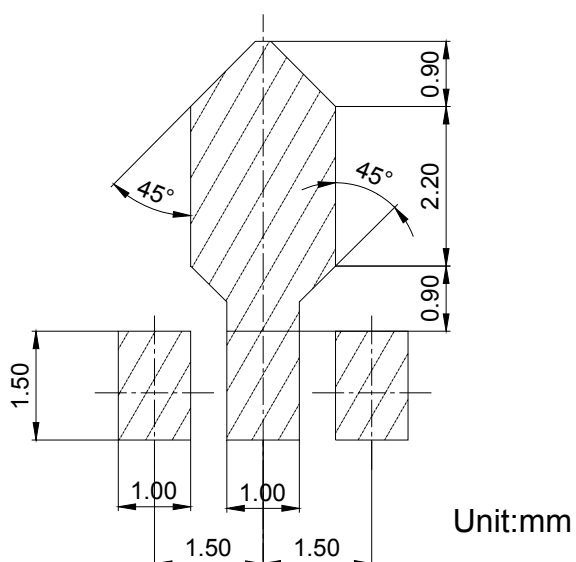
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

| Device  | Package | Shipping       |
|---------|---------|----------------|
| PXT3906 | SOT-89  | 1000/Tape&Reel |