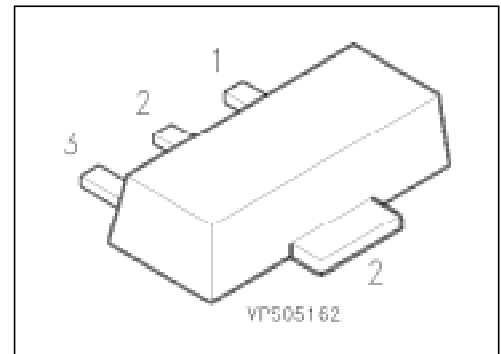


## PNP Silicon High Voltage Transistors

**SXTA 92**  
**SXTA 93**

- High breakdown voltage
- Low collector-emitter saturation voltage



| Type    | Marking | Ordering Code<br>(tape and reel) | Pin Configuration |   |   | Package <sup>1)</sup> |
|---------|---------|----------------------------------|-------------------|---|---|-----------------------|
|         |         |                                  | 1                 | 2 | 3 |                       |
| SXTA 92 | 2D      | Q68000-A8393                     | B                 | C | E | SOT-89                |
| SXTA 93 | 2E      | Q68000-A8651                     |                   |   |   |                       |

### Maximum Ratings

| Parameter                                      | Symbol    | Values         |         | Unit |
|--|-----------|----------------|---------|------|
|  |           | SXTA 92        | SXTA 93 |      |
| Collector-emitter voltage                      | $V_{CE0}$ | 300            | 200     | V    |
| Collector-base voltage                         | $V_{CB0}$ | 300            | 200     |      |
| Emitter-base voltage                           | $V_{EB0}$ | 5              |         |      |
| Collector current                              | $I_C$     | 500            |         | mA   |
| Total power dissipation, $T_s = 130\text{ °C}$ | $P_{tot}$ | 1              |         | W    |
| Junction temperature                           | $T_j$     | 150            |         | °C   |
| Storage temperature range                      | $T_{stg}$ | - 65 ... + 150 |         |      |

### Thermal Resistance

|                                  |              |      |     |
|----------------------------------|--------------|------|-----|
| Junction - ambient <sup>2)</sup> | $R_{th\ JA}$ | ≤ 75 | K/W |
| Junction - soldering point       | $R_{th\ JS}$ | ≤ 20 |     |

<sup>1)</sup> For detailed information see chapter Package Outlines.

<sup>2)</sup> Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm<sup>2</sup> Cu.

## Electrical Characteristics

at  $T_A = 25\text{ °C}$ , unless otherwise specified.

| Parameter | Symbol | Values |      |      | Unit |
|-----------|--------|--------|------|------|------|
|           |        | min.   | typ. | max. |      |

### DC characteristics

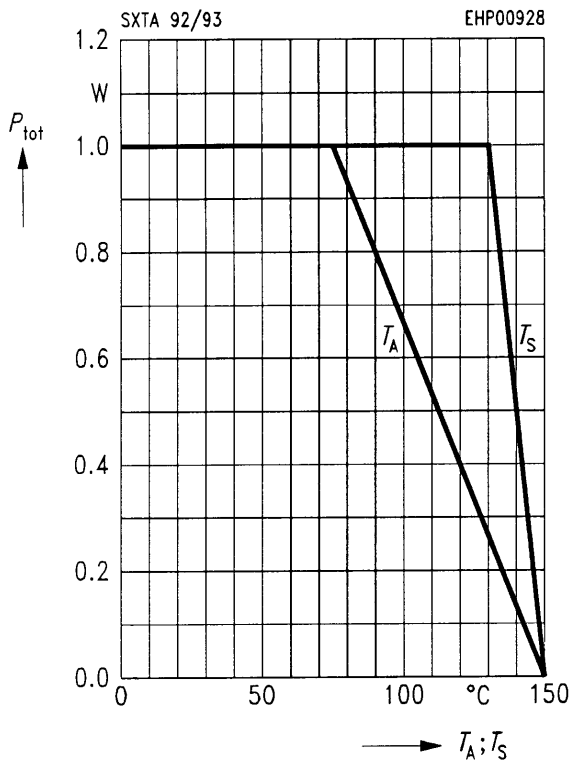
|   |  |               |                      |                  |                        |  |
|---|--|---------------|----------------------|------------------|------------------------|--|
| Collector-emitter breakdown voltage<br>$I_C = 1\text{ mA}$  | SXTA 92<br>SXTA 93                       | $V_{(BR)CE0}$ | 300<br>200           | —<br>—           | —<br>—                 | V  |
| Collector-base breakdown voltage<br>$I_C = 100\text{ }\mu\text{A}$  | SXTA 92<br>SXTA 93                       | $V_{(BR)CB0}$ | 300<br>200           | —<br>—           | —<br>—                 |  |
| Emitter-base breakdown voltage<br>$I_E = 100\text{ }\mu\text{A}$  |  | $V_{(BR)EB0}$ | 5                    | —                | —                      |  |
| Collector-base cutoff current<br>$V_{CB} = 200\text{ V}, I_E = 0$<br>$V_{CB} = 160\text{ V}, I_E = 0$<br>$V_{CB} = 200\text{ V}, I_E = 0, T_A = 125\text{ °C}$<br>$V_{CB} = 160\text{ V}, I_E = 0, T_A = 125\text{ °C}$ | SXTA 92<br>SXTA 93<br>SXTA 92<br>SXTA 93 | $I_{CB0}$     | —<br>—<br>—<br>—     | —<br>—<br>—<br>— | 250<br>250<br>20<br>20 | nA<br>nA<br>$\mu\text{A}$<br>$\mu\text{A}$ |
| Emitter-base cutoff current<br>$V_{EB} = 4\text{ V}, I_C = 0$   |  | $I_{EB0}$     | —                    | —                | 100                    | nA   |
| DC current gain<br>$I_C = 1\text{ mA}, V_{CE} = 10\text{ V}$<br>$I_C = 10\text{ mA}, V_{CE} = 10\text{ V}$<br>$I_C = 30\text{ mA}, V_{CE} = 10\text{ V}$  | SXTA 92<br>SXTA 93                       | $h_{FE}$      | 25<br>40<br>25<br>25 | —<br>—<br>—<br>— | —<br>—<br>—<br>—       | —  |
| Collector-emitter saturation voltage <sup>1)</sup><br>$I_C = 20\text{ mA}, I_B = 2\text{ mA}$   | SXTA 92<br>SXTA 93                       | $V_{CEsat}$   | —<br>—               | —<br>—           | 0.5<br>0.4             | V  |
| Base-emitter saturation voltage <sup>1)</sup><br>$I_C = 20\text{ mA}, I_B = 2\text{ mA}$  |  | $V_{BEsat}$   | —                    | —                | 0.9                    |  |

### AC characteristics

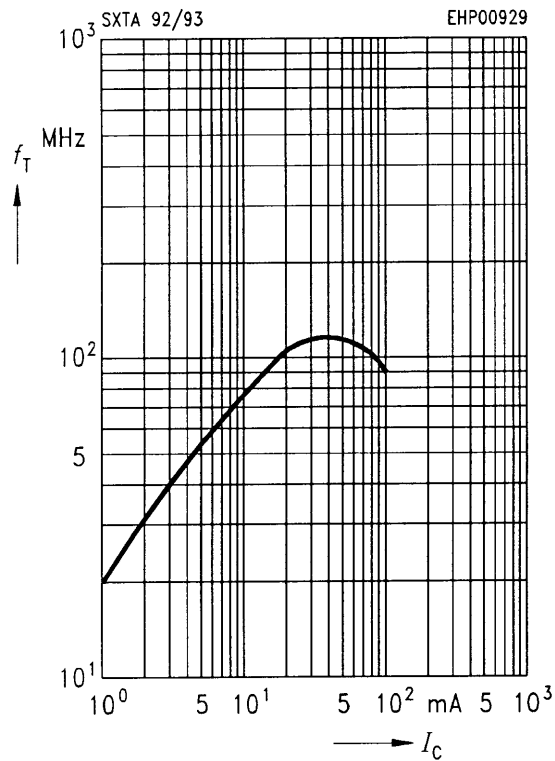
|  |                    |           |        |        |        |     |
|--|--------------------|-----------|--------|--------|--------|-----|
| Transition frequency<br>$I_C = 10\text{ mA}, V_{CE} = 20\text{ V}, f = 100\text{ MHz}$ |                    | $f_T$     | 50     | —      | —      | MHz |
| Output capacitance<br>$V_{CB} = 20\text{ V}, f = 1\text{ MHz}$                         | SXTA 92<br>SXTA 93 | $C_{obo}$ | —<br>— | —<br>— | 6<br>8 | pF  |

<sup>1)</sup> Pulse test conditions:  $t \leq 300\text{ }\mu\text{s}$ ,  $D \leq 2\%$ .

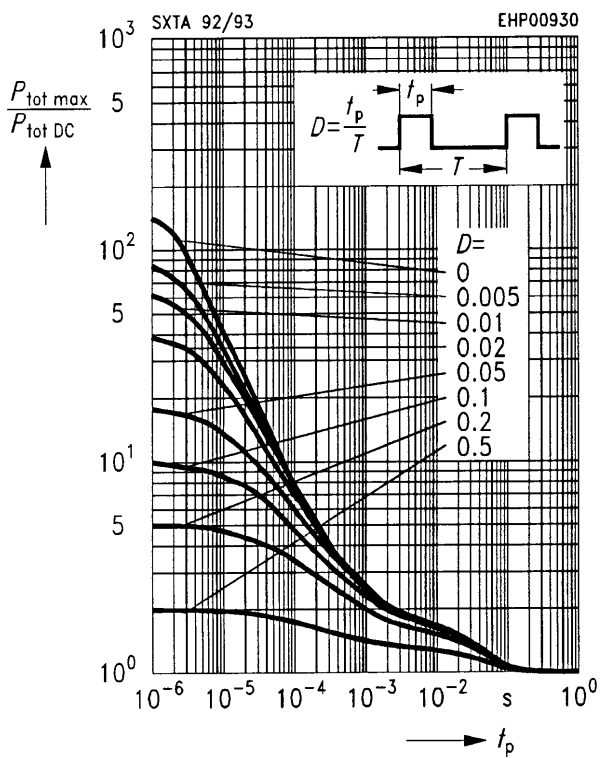
**Total power dissipation**  $P_{tot} = f(T_A^*; T_S)$   
 \* Package mounted on epoxy



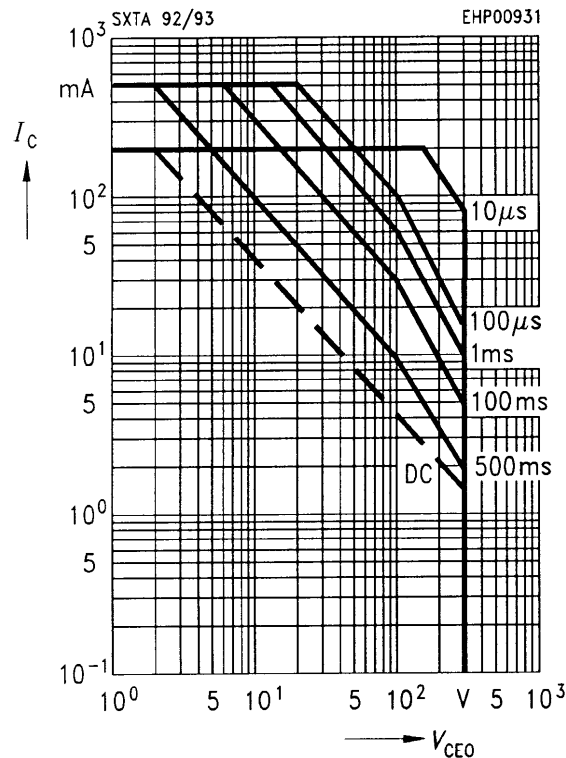
**Transition frequency**  $f_T = f(I_C)$   
 $V_{CE} = 20 \text{ V}, f = 100 \text{ MHz}$



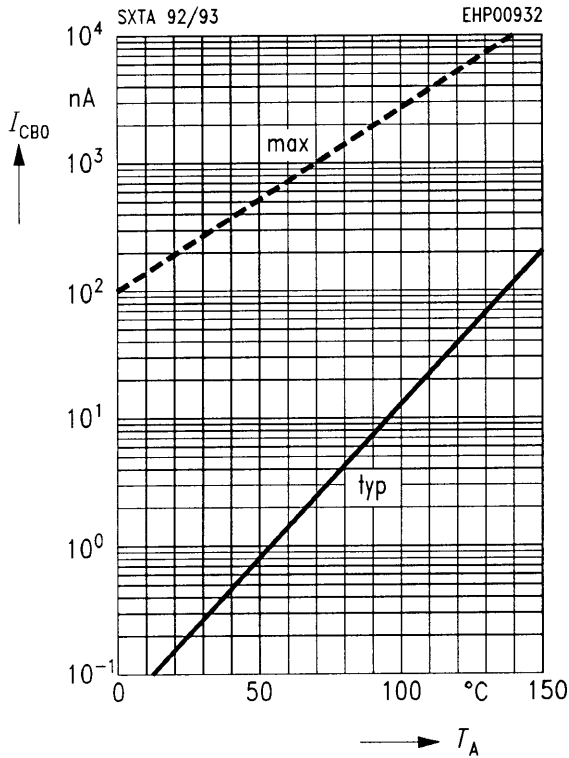
**Permissible pulse load**  $P_{tot \text{ max}}/P_{tot \text{ DC}} = f(t_p)$



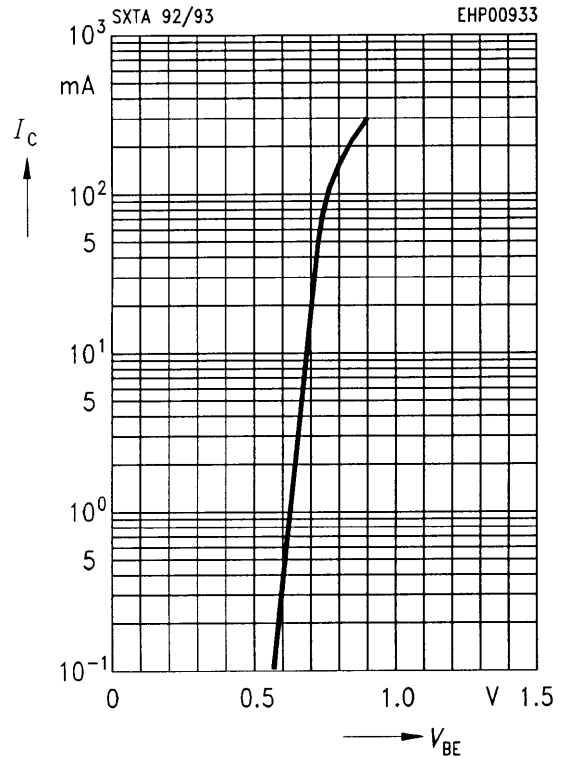
**Operating range**  $I_C = f(V_{CE0})$   
 $T_A = 25 \text{ °C}, D = 0$



**Collector cutoff current  $I_{CB0} = f(T_A)$**   
 $V_{CB} = 160 \text{ V}$



**Collector current  $I_C = f(V_{BE})$**   
 $V_{CE} = 10 \text{ V}$



**DC current gain  $h_{FE} = f(I_C)$**   
 $V_{CE} = 10 \text{ V}$

