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# 2SC4702

Silicon NPN Epitaxial

# HITACHI

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## Application

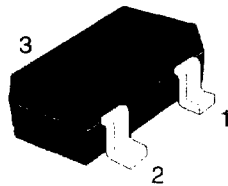
High voltage amplifier

## Features

- High breakdown voltage  
 $V_{CEO} = 300 \text{ V}$
- Small Cob  
 $C_{ob} = 1.5 \text{ pF Typ.}$

## Outline

MPAK



1. Emitter
2. Base
3. Collector

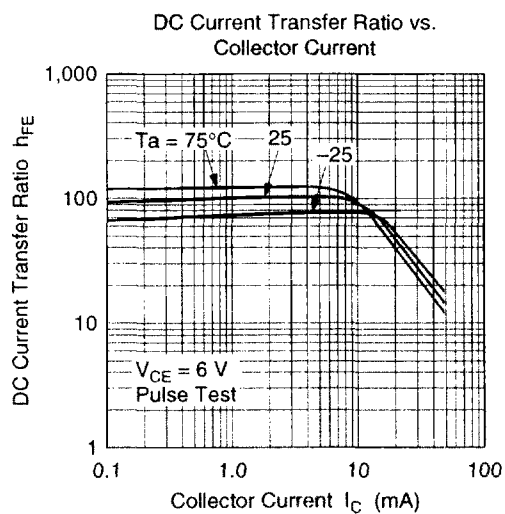
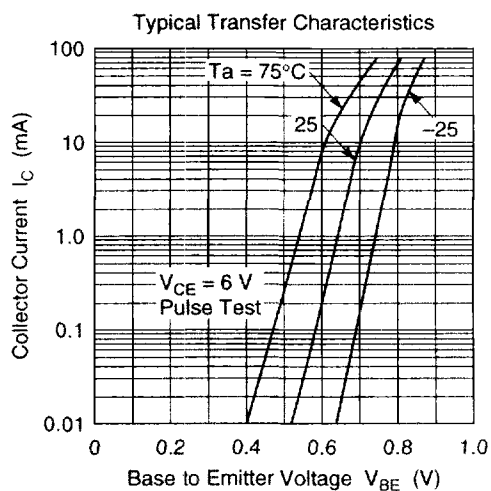
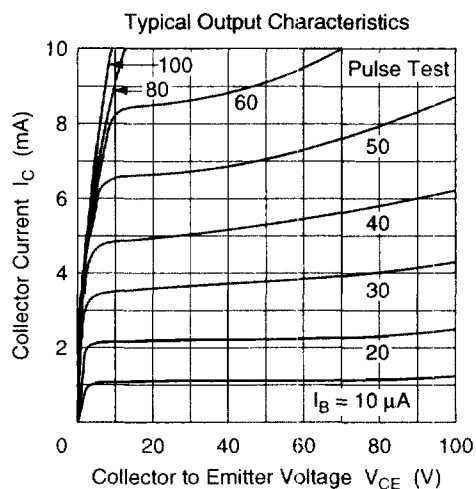
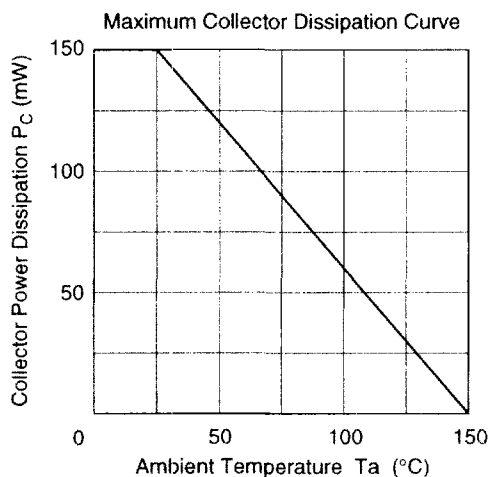
**Absolute Maximum Ratings** ( $T_a = 25^\circ\text{C}$ )

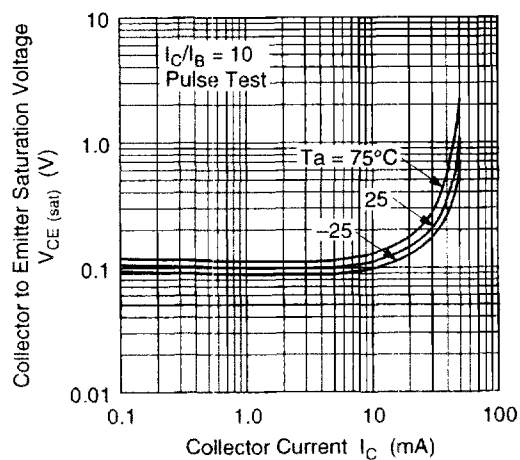
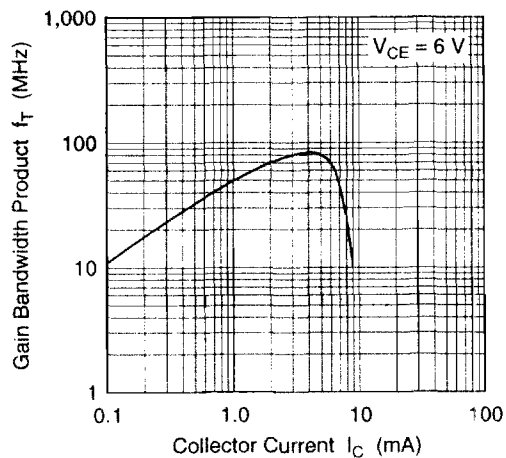
| Item                         | Symbol           | Ratings     | Unit             |
|------------------------------|------------------|-------------|------------------|
| Collector to base voltage    | $V_{\text{CBO}}$ | 300         | V                |
| Collector to emitter voltage | $V_{\text{CEO}}$ | 300         | V                |
| Emitter to base voltage      | $V_{\text{EBO}}$ | 5           | V                |
| Collector current            | $I_{\text{C}}$   | 50          | mA               |
| Collector power dissipation  | $P_{\text{C}}$   | 150         | mW               |
| Junction temperature         | $T_{\text{j}}$   | 150         | $^\circ\text{C}$ |
| Storage temperature          | $T_{\text{stg}}$ | -55 to +150 | $^\circ\text{C}$ |

**Electrical Characteristics** ( $T_a = 25^\circ\text{C}$ )

| Item                                    | Symbol                      | Min | Typ | Max | Unit          | Test conditions                                                         |
|-----------------------------------------|-----------------------------|-----|-----|-----|---------------|-------------------------------------------------------------------------|
| Collector to base breakdown voltage     | $V_{(\text{BR})\text{CBO}}$ | 300 | —   | —   | V             | $I_{\text{C}} = 10\text{ }\mu\text{A}$ , $I_{\text{E}} = 0$             |
| Collector to emitter breakdown voltage  | $V_{(\text{BR})\text{CEO}}$ | 300 | —   | —   | V             | $I_{\text{C}} = 1\text{ mA}$ , $R_{\text{BE}} = \infty$                 |
| Emitter to base breakdown voltage       | $V_{(\text{BR})\text{EBO}}$ | 5   | —   | —   | V             | $I_{\text{E}} = 10\text{ }\mu\text{A}$ , $I_{\text{C}} = 0$             |
| Collector cutoff current                | $I_{\text{CBO}}$            | —   | —   | 0.1 | $\mu\text{A}$ | $V_{\text{CB}} = 250\text{ V}$ , $I_{\text{E}} = 0$                     |
| Collector to emitter saturation voltage | $V_{\text{CE(sat)}}$        | —   | —   | 0.5 | V             | $I_{\text{C}} = 30\text{ mA}$ , $I_{\text{B}} = 3\text{ mA}$            |
| DC current transfer ratio               | $h_{\text{FE}}$             | 60  | —   | 150 |               | $V_{\text{CE}} = 6\text{ V}$ , $I_{\text{C}} = 2\text{ mA}$             |
| Gain bandwidth product                  | $f_{\text{T}}$              | —   | 80  | —   | MHz           | $V_{\text{CE}} = 6\text{ V}$ , $I_{\text{C}} = 5\text{ mA}$             |
| Collector output capacitance            | $C_{\text{ob}}$             | —   | 1.5 | —   | pF            | $V_{\text{CB}} = 10\text{ V}$ , $I_{\text{E}} = 0$ , $f = 1\text{ MHz}$ |

Note: Marking is "XV—".



Collector to Emitter Saturation Voltage vs.  
Collector CurrentGain Bandwidth Product vs.  
Collector CurrentCollector Output Capacitance vs.  
Collector to Base Voltage