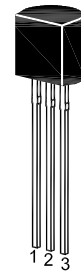


# MPSA29

## NPN Silicon Epitaxial Planar Transistor

Darlington transistor



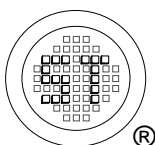
1. Emitter 2. Base 3. Collector  
TO-92 Plastic Package

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

| Parameter                               | Symbol         | Value         | Unit             |
|---|----------------|---------------|------------------|
| Collector Base Voltage                  | $V_{CBO}$      | 100           | V                |
| Collector Emitter Voltage               | $V_{CES}$      | 100           | V                |
| Emitter Base Voltage                    | $V_{EBO}$      | 12            | V                |
| Collector Current                       | $I_C$          | 500           | mA               |
| Power Dissipation                       | $P_{tot}$      | 625           | mW               |
| Operating and Storage Temperature Range | $T_j, T_{stg}$ | - 55 to + 150 | $^\circ\text{C}$ |

### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

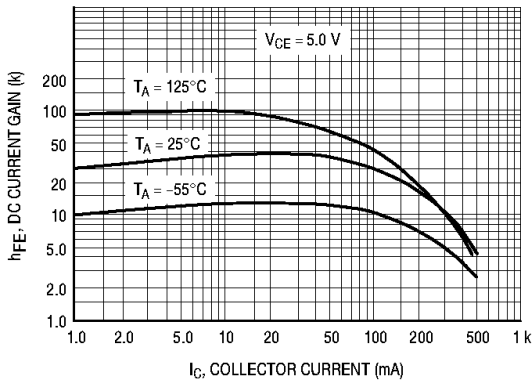
| Parameter  | Symbol               | Min.           | Max.       | Unit   |
|--|----------------------|----------------|------------|--------|
| DC Current Gain<br>at $V_{CE} = 5\text{ V}, I_C = 10\text{ mA}$<br>at $V_{CE} = 5\text{ V}, I_C = 100\text{ mA}$                       | $h_{FE}$<br>$h_{FE}$ | 10000<br>10000 | -<br>-     | -<br>- |
| Collector Base Cutoff Current<br>at $V_{CB} = 80\text{ V}$   | $I_{CBO}$            | -              | 100        | nA     |
| Collector Emitter Cutoff Current<br>at $V_{CE} = 80\text{ V}$  | $I_{CES}$            | -              | 500        | nA     |
| Emitter Base Cutoff Current<br>at $V_{EB} = 10\text{ V}$   | $I_{EBO}$            | -              | 100        | nA     |
| Collector Base Breakdown Voltage<br>at $I_C = 100\text{ }\mu\text{A}$  | $V_{(BR)CBO}$        | 100            | -          | V      |
| Collector Emitter Breakdown Voltage<br>at $I_C = 100\text{ }\mu\text{A}$   | $V_{(BR)CES}$        | 100            | -          | V      |
| Emitter Base Breakdown Voltage<br>at $I_C = 10\text{ }\mu\text{A}$   | $V_{(BR)EBO}$        | 12             | -          | V      |
| Collector Emitter Saturation Voltage<br>at $I_C = 10\text{ mA}, I_B = 0.01\text{ mA}$<br>at $I_C = 100\text{ mA}, I_B = 0.1\text{ mA}$ | $V_{CE(sat)}$        | -<br>-         | 1.2<br>1.5 | V      |
| Base Emitter On Voltage<br>at $I_C = 100\text{ mA}, V_{CE} = 5\text{ V}$   | $V_{BE(on)}$         | -              | 2          | V      |
| Current Gain Bandwidth Product<br>at $V_{CE} = 5\text{ V}, I_C = 10\text{ mA}, f = 100\text{ MHz}$                                     | $f_T$                | 125            | -          | MHz    |
| Output Capacitance<br>at $V_{CB} = 10\text{ V}, f = 1\text{ MHz}$  | $C_{obo}$            | -              | 8          | pF     |



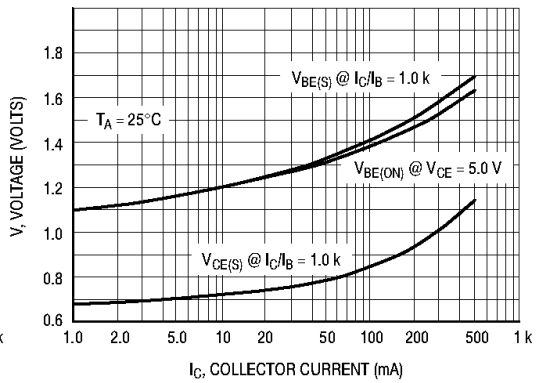
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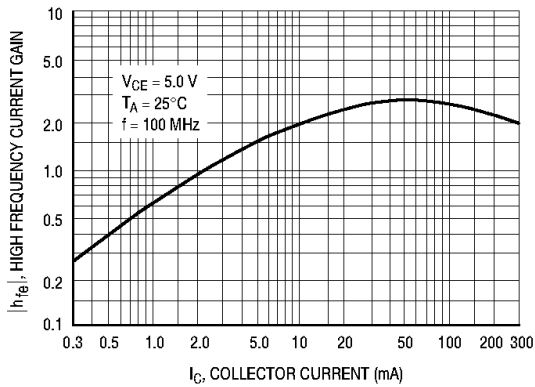
Dated : 27/05/2009



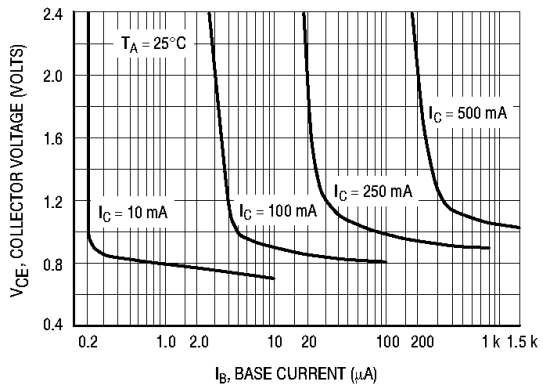
DC Current Gain



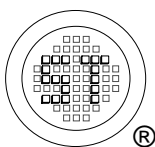
"ON" Voltages



High Frequency Current Gain



Collector Saturation Region



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