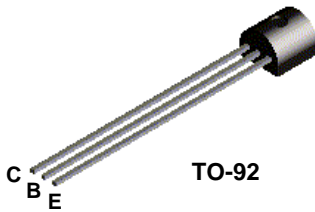
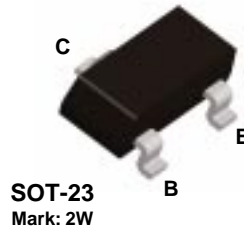


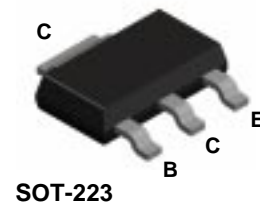
## MPSA65



## MMBTA65



## PZTA65



## PNP Darlington Transistor

This device is designed for applications requiring extremely high current gain at currents to 800 mA. Sourced from Process 61. See MPSA64 for characteristics.

### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

| Symbol                            | Parameter  | Value       | Units |
|-----------------------------------|--|-------------|-------|
| V <sub>CES</sub>                  | Collector-Emitter Voltage                        | 30          | V     |
| V <sub>CBO</sub>                  | Collector-Base Voltage                           | 30          | V     |
| V <sub>EBO</sub>                  | Emitter-Base Voltage                             | 10          | V     |
| I <sub>C</sub>                    | Collector Current - Continuous                   | 1.2         | A     |
| T <sub>J</sub> , T <sub>stg</sub> | Operating and Storage Junction Temperature Range | -55 to +150 | °C    |

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

#### NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Thermal Characteristics

TA = 25°C unless otherwise noted

| Symbol           | Characteristic                          | Max    |          |          | Units |
|------------------|---|--------|----------|----------|-------|
|                  |   | MPSA65 | *MMBTA65 | **PZTA65 |       |
| P <sub>D</sub>   | Total Device Dissipation                | 625    | 350      | 1,000    | mW    |
|                  | Derate above 25°C                       | 5.0    | 2.8      | 8.0      | mW/°C |
| R <sub>θJC</sub> | Thermal Resistance, Junction to Case    | 83.3   |          |          | °C/W  |
| R <sub>θJA</sub> | Thermal Resistance, Junction to Ambient | 200    | 357      | 125      | °C/W  |

\*Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06."

\*\*Device mounted on FR-4 PCB 36 mm X 18 mm X 1.5 mm; mounting pad for the collector lead min. 6 cm<sup>2</sup>.

# PNP Darlington Transistor

(continued)

## Electrical Characteristics

TA = 25°C unless otherwise noted

| Symbol                              | Parameter                            | Test Conditions   | Min              | Max | Units |
|-------------------------------------|--------------------------------------|---|------------------|-----|-------|
| <b>OFF CHARACTERISTICS</b>          |                                      |   |                  |     |       |
| $V_{(BR)CES}$                       | Collector-Emitter Breakdown Voltage  | $I_C = 100 \mu A, I_B = 0$  | 30               |     | V     |
| $I_{CBO}$                           | Collector-Cutoff Current             | $V_{CB} = 30 V, I_E = 0$  |                  | 100 | nA    |
| $I_{EBO}$                           | Emitter-Cutoff Current               | $V_{EB} = 8.0 V, I_C = 0$   |                  | 100 | nA    |
| <b>ON CHARACTERISTICS*</b>          |                                      |   |                  |     |       |
| $h_{FE}$                            | DC Current Gain                      | $I_C = 10 \text{ mA}, V_{CE} = 5.0 V$<br>$I_C = 100 \text{ mA}, V_{CE} = 5.0 V$ | 50,000<br>20,000 |     |       |
| $V_{CE(sat)}$                       | Collector-Emitter Saturation Voltage | $I_C = 100 \text{ mA}, I_B = 0.1 \text{ mA}$                                    |                  | 1.5 | V     |
| $V_{BE(on)}$                        | Base-Emitter On Voltage              | $I_C = 100 \text{ mA}, V_{CE} = 5.0 V$  |                  | 2.0 | V     |
| <b>SMALL SIGNAL CHARACTERISTICS</b> |                                      |   |                  |     |       |
| $f_T$                               | Current Gain - Bandwidth Product     | $I_C = 10 \text{ mA}, V_{CE} = 5.0 V,$<br>$f = 100 \text{ MHz}$                 | 100              |     | MHz   |

\*Pulse Test: Pulse Width  $\leq 300 \mu s$ , Duty Cycle  $\leq 2.0\%$

MPSA65 / MM6TA65 / PZTA65

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| Bottomless™          | GlobalOptoisolator™ | QFET™               | TinyLogic™ |
| CoolFET™             | GTO™                | QST™                | UHC™       |
| CROSSVOLT™           | HiSeC™              | QT Optoelectronics™ | VCX™       |
| DOME™                | ISOPLANAR™          | Quiet Series™       |            |
| E <sup>2</sup> CMOS™ | MICROWIRE™          | SILENT SWITCHER®    |            |
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| FACT™                | OPTOPLANAR™         | SuperSOT™-3         |            |
| FACT Quiet Series™   | PACMAN™             | SuperSOT™-6         |            |
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