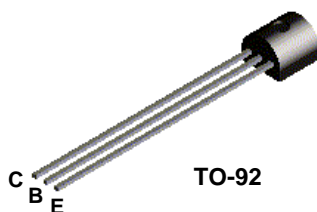
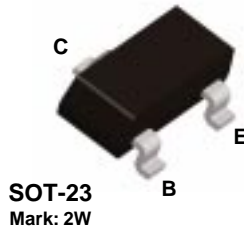


## MPSA65



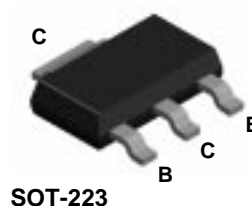
TO-92

## MMBTA65



SOT-23  
Mark: 2W

## PZTA65



SOT-223

## 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 Derate above 25°C	625 5.0	350 2.8	1,000 8.0	mW 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	$I_C = 100\ \mu A, I_E = 0$	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	$I_C = 10\ mA, V_{CE} = 5.0\ V$ $I_C = 100\ mA, V_{CE} = 5.0\ V$	50,000 20,000		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100\ mA, I_B = 0.1\ mA$		1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 100\ mA, V_{CE} = 5.0\ V$		2.0	V
<b>SMALL SIGNAL CHARACTERISTICS</b>					
$f_T$	Current Gain - Bandwidth Product	$I_C = 10\ mA, V_{CE} = 5.0\ V,$ $f = 100\ MHz$	100		MHz

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

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