

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CES}$	30	Vdc
Collector-Base Voltage	$V_{CBO}$	30	Vdc
Emitter-Base Voltage	$V_{EBO}$	10	Vdc
Collector Current — Continuous	$I_C$	500	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	625 5.0	mW mW/°C
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	1.5 12	Watts mW/°C
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	- 55 to + 150	°C

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	°C/W

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted.)

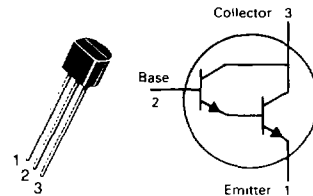
Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Breakdown Voltage ( $I_C = 100 \mu\text{Adc}, I_B = 0$ )	$V_{(BR)CES}$	30	—	Vdc
Collector Cutoff Current ( $V_{CB} = 30 \text{ Vdc}, I_E = 0$ )	$I_{CBO}$	—	100	nAdc
Emitter Cutoff Current ( $V_{EB} = 10 \text{ Vdc}, I_C = 0$ )	$I_{EBO}$	—	100	nAdc
<b>ON CHARACTERISTICS(1)</b>				
DC Current Gain ( $I_C = 10 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$ )	$h_{FE}$	5000 10,000	—	—
		MPSA13 MPSA14		
( $I_C = 100 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$ )		10,000 20,000	—	—
		MPSA13 MPSA14		
Collector-Emitter Saturation Voltage ( $I_C = 100 \text{ mAdc}, I_B = 0.1 \text{ mAdc}$ )	$V_{CE(sat)}$	—	1.5	Vdc
Base-Emitter On Voltage ( $I_C = 100 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$ )	$V_{BE}$	—	2.0	Vdc
<b>SMALL-SIGNAL CHARACTERISTICS</b>				
Current-Gain — Bandwidth Product(2) ( $I_C = 10 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}, f = 100 \text{ MHz}$ )	$f_T$	125	—	MHz

(1) Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

(2)  $f_T = |h_{FE}| \cdot f_{test}$ .

## MPSA13 MPSA14★

CASE 29-04, STYLE 1  
TO-92 (TO-226AA)



### DARLINGTON TRANSISTORS

NPN SILICON

★This is a Motorola  
designated preferred device.

Refer to 2N6426 for graphs.