FAIRCHILD SEMICONDUCTOR®

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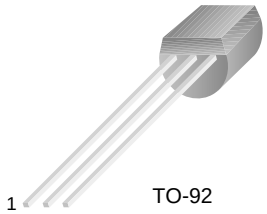
MPSA93
PNP High Voltage Amplifier

- This device is designed for high voltage driver applications.
- Sourced from Process 76.



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TO-92

1. Collector 2. Base 3. Emitter

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	200	V
V_{CBO}	Collector-Base Voltage	200	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current (DC)	500	mA
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 ~ +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 T_a=25°C unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above 25°C	625 5.0	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	°C/W

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

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 100μA, I_E = 0	200			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	I_C = 1 mA, I_B = 0	200			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 100μA, I_C = 0	5			V
I_{EBO}	Emitter Cut-off Current	V_{EB} = 3V, I_C = 0			0.1	μA
I_{CBO}	Collector Cut-off Current	V_{CB} = 200V, I_E = 0			0.25	μA
On Characteristics						
h_{FE}	DC Current Gain	V_{CE} = 10V, I_C = 1mA V_{CE} = 10V, I_C = 10mA V_{CE} = 10V, I_C = 30mA	25 40 25			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 20 mA, I_B = 2 mA			0.4	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 20 mA, I_B = 2 mA			0.9	V
Small Signal Characteristics						
C_{cb}	Collector-Base Capacitance	V_{CB} = 20 V, I_E = 0, f = 1.0 MHz			8	pF
f_T	Current Gain Bandwidth Product	V_{CE} = 5.0V, I_C = 10mA, f = 100MHz	50			MHz

* Pulse Test: Pulse Width 300 s, Duty Cycle 2.0%

Notes:
1) All voltages (V) and currents (A) are negative polarity for PNP transistors.

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