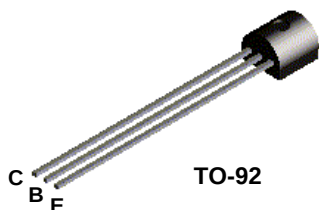
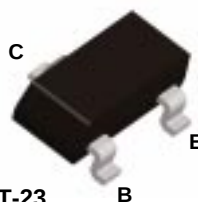


MPSA43



TO-92

MMBTA43



SOT-23
Mark: 1E

NPN High Voltage Amplifier

This device is designed for application as a video output to drive color CRT and other high voltage applications. Sourced from Process 48. See MPSA42 for characteristics.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CES}	Collector-Emitter Voltage	200	V
V _{CBO}	Collector-Base Voltage	200	V
V _{EBO}	Emitter-Base Voltage	6.0	V
I _C	Collector Current - Continuous	200	mA
T _J , T _{stg}	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
		MPSA43	*MMBTA43	
P _D	Total Device Dissipation	625	350	mW
	Derate above 25°C	5.0	2.8	mW/°C
R _{θJC}	Thermal Resistance, Junction to Case	83.3		°C/W
R _{θJA}	Thermal Resistance, Junction to Ambient	200	357	°C/W

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

NPN High Voltage Amplifier

(continued)

MPSA43 / MMBTA43

Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
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OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	$I_C = 1.0 \text{ mA}$, $I_B = 0$	200		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100 \text{ } \mu\text{A}$, $I_E = 0$	200		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100 \text{ } \mu\text{A}$, $I_C = 0$	6.0		V
I_{CBO}	Collector-Cutoff Current	$V_{CB} = 160 \text{ V}$, $I_E = 0$		0.1	μA
I_{EBO}	Emitter-Cutoff Current	$V_{EB} = 4.0 \text{ V}$, $I_C = 0$		0.1	μA

ON CHARACTERISTICS*

h_{FE}	DC Current Gain	$I_C = 1.0 \text{ mA}$, $V_{CE} = 10 \text{ V}$ $I_C = 10 \text{ mA}$, $V_{CE} = 10 \text{ V}$ $I_C = 30 \text{ mA}$, $V_{CE} = 10 \text{ V}$	25 40 50	200	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 20 \text{ mA}$, $I_B = 2.0 \text{ mA}$		0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 20 \text{ mA}$, $I_B = 2.0 \text{ mA}$		0.9	V

SMALL SIGNAL CHARACTERISTICS

f_T	Current Gain - Bandwidth Product	$I_C = 10 \text{ mA}$, $V_{CE} = 20 \text{ V}$, $f = 100 \text{ MHz}$	50		MHz
C_{cb}	Collector-Base Capacitance	$V_{CB} = 20 \text{ V}$, $I_E = 0$, $f = 1.0 \text{ MHz}$		4.0	pF

*Pulse Test: Pulse Width $\leq 300 \text{ ms}$, Duty Cycle $\leq 2.0\%$

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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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