

# MPSA43

## 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.



TO-92  
1. Emitter 2. Base 3. Collector

## Absolute Maximum Ratings \* $T_A=25^\circ\text{C}$ 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 ~ +150	$^\circ\text{C}$

\* 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.

## Electrical Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
<b>Off Characteristics</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage *	$I_C = 1.0\text{mA}, I_B = 0$	200		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\mu\text{A}, I_E = 0$	200		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_C = 100\mu\text{A}, I_C = 0$	6.0		V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 160\text{V}, I_E = 0$		0.1	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 4.0\text{V}, I_C = 0$		0.1	$\mu\text{A}$
<b>On Characteristics *</b>					
$h_{FE}$	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
<b>Small Signal Characteristics *</b>					
$f_T$	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

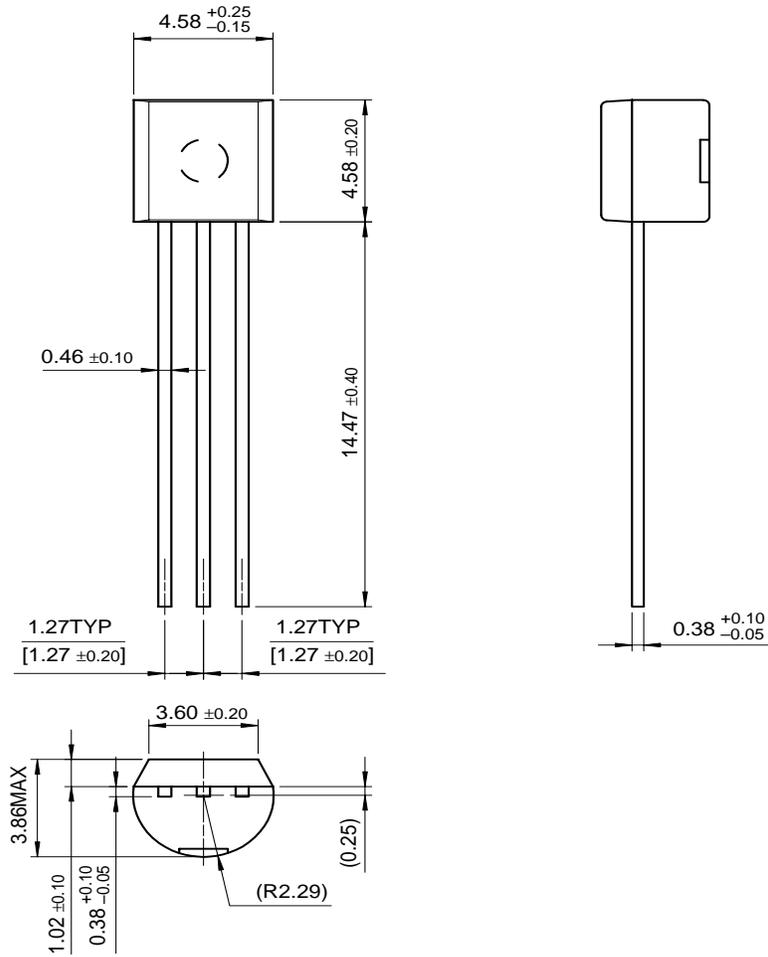
\* Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

## Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

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

# Package Dimensions

## TO-92



Dimensions in Millimeters

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