



# DC COMPONENTS CO., LTD.

## DISCRETE SEMICONDUCTORS

### MPSA42M

#### TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

#### Description

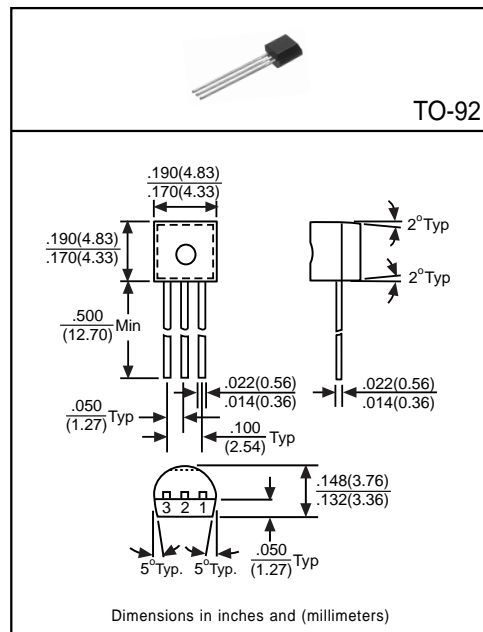
Designed for use as a video output to drive color CRT, or as a dialer circuit in electronic telephone.

#### Pinning

- 1 = Emitter
- 2 = Base
- 3 = Collector

#### Absolute Maximum Ratings( $T_A=25^{\circ}\text{C}$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	300	V
Collector-Emitter Voltage	$V_{CE0}$	300	V
Emitter-Base Voltage	$V_{EB0}$	6	V
Collector Current	$I_C$	800	mA
Total Power Dissipation	$P_D$	625	mW
Junction Temperature	$T_J$	+150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$



#### Electrical Characteristics

(Ratings at  $25^{\circ}\text{C}$  ambient temperature unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Volatge	$BV_{CB0}$	300	-	-	V	$I_C=100\mu\text{A}$ , $I_E=0$
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	300	-	-	V	$I_C=1\text{mA}$ , $I_B=0$
Emitter-Base Breakdown Volatge	$BV_{EB0}$	6	-	-	V	$I_E=10\mu\text{A}$ , $I_C=0$
Emitter Cutoff Current	$I_{E0}$	-	-	0.1	$\mu\text{A}$	$V_{EB}=3\text{V}$ , $I_C=0$
Collector-Emitter Saturation Voltage <sup>(1)</sup>	$V_{CE(sat)1}$	-	-	0.2	V	$I_C=20\text{mA}$ , $I_B=2\text{mA}$
	$V_{CE(sat)2}$	-	-	0.75	V	$I_C=100\text{mA}$ , $I_B=10\text{mA}$
Base-Emitter Saturation Voltage <sup>(1)</sup>	$V_{BE(sat)1}$	-	-	0.9	V	$I_C=20\text{mA}$ , $I_B=2\text{mA}$
	$V_{BE(sat)2}$	-	-	1	V	$I_C=100\text{mA}$ , $I_B=10\text{mA}$
DC Current Gain <sup>(1)</sup>	$h_{FE1}$	80	-	-	-	$I_C=10\text{mA}$ , $V_{CE}=10\text{V}$
	$h_{FE2}$	80	-	-	-	$I_C=100\text{mA}$ , $V_{CE}=10\text{V}$
	$h_{FE3}$	40	-	-	-	$I_C=200\text{mA}$ , $V_{CE}=10\text{V}$
Transition Frequency	$f_T$	50	-	-	MHz	$I_C=10\text{mA}$ , $V_{CE}=20\text{V}$ , $f=100\text{MHz}$

(1)Pulse Test: Pulse Width  $\leq 380\mu\text{s}$ , Duty Cycle  $\leq 2\%$