

MPSA42

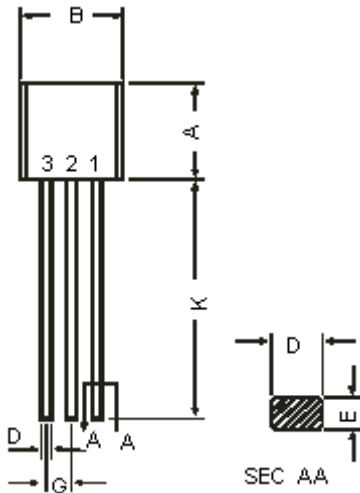
High Voltage Transistor



Features:

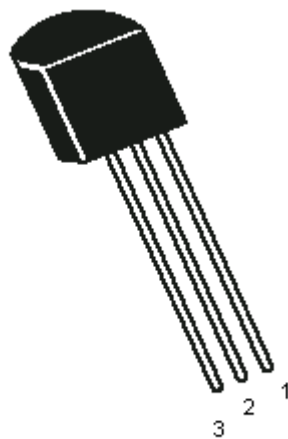
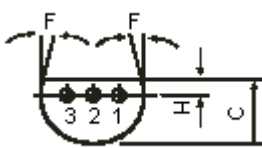
- Device with breakdown voltages of 160V minimum, for applications requiring relatively low collector current, such as lamp drivers and neon tubes.
- NPN Silicon Planar Epitaxial Transistor.
- Complementary high Voltage Transistor.

TO-92 Plastic Package



Dimensions	Minimum	Maximum
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5°	
G	1.14	1.40
H		1.53
K	12.70	-

Dimensions : Millimetres



Pin Configuration:

1. Collector
2. Base
3. Emitter

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Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Parameters	Symbol	Value	Units
Collector Emitter Voltage	V_{CEO}	300	V
Collector Base Voltage	V_{CBO}		
Emitter Base Voltage	V_{EBO}		
Collector Current Continuous	I_C	500	mA
Total Device Dissipation at $T_a = 25^\circ\text{C}$ Derate above 25°C	P_D	625	mW
Total Device Dissipation at $T_C = 25^\circ\text{C}$ Derate above 25°C		5.0	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-55 to +150	$^\circ\text{C}$
Thermal Resistance			
Junction to Ambient	$R_{th(j-a)}$	200	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	83.3	

Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Description	Symbol	Test Condition	Minimum	Maximum	Units
Collector Emitter Voltage	V_{CEO}	$I_C = 1.0\text{mA}, I_B = 0$	300	-	V
Collector Base Voltage	V_{CBO}	$I_C = 100\mu\text{A}, I_E = 0$		-	
Emitter Base Voltage	V_{EBO}	$I_E = 100\mu\text{A}, I_C = 0$		6.0	
Collector-Cut off Current	I_{CBO}	$V_{CB} = 200\text{V}, I_E = 0$	-	0.1	μA
Emitter-Cut off Current	I_{EBO}	$V_{BE} = 6.0\text{V}, I_C = 0$	-		
Collector Emitter Saturation Voltage	$V_{CE(sat)}^*$	$I_C = 20\text{mA}, I_B = 2.0\text{mA}$	-	0.5	V
Base Emitter Saturation Voltage	$V_{BE(sat)}^*$		-	0.9	
DC Current Gain	h_{FE}^*	$V_{CE} = 10\text{V}, I_C = 1.0\text{mA}$	25	-	-
		$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	40		
		$V_{CE} = 10\text{V}, I_C = 30\text{mA}$	40		
Dynamic Characteristics					
Current Gain-Bandwidth Product	f_T	$I_C = 10\text{mA}, V_{CE} = 20\text{V},$ $f = 100\text{MHz}$	50	-	MHz
Collector Base Capacitance	C_{cb}	$I_E = 0, V_{CB} = 20\text{V},$ $f = 1.0\text{MHz}$	-	3.0	pF

*Pulse Condition : Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

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Specifications

V_{CEO} maximum (V)	$I_{C(av)}$ maximum (A)	h_{FE} minimum at $I_C = 10mA$	$V_{CE(Sat)}$ maximum (V) at $I_C = 20mA$	f_T minimum (MHz)	P_{tot} at 25°C (mW)	Package and Pin Out	Type	Part Number
300	0.5	40	0.5	50	625	TO-92	NPN	MPSA42

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Notes:

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