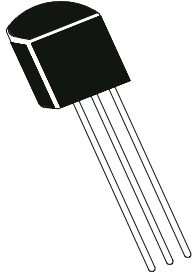


**NPN SILICON PLANAR EPITAXIAL TRANSISTORS**

**MPSA42  
MPSA43**

**TO-92  
Plastic Package**



**High Voltage Transistors  
Complementary MPSA 92/ MPSA93**

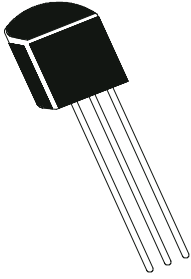
**ABSOLUTE MAXIMUM RATINGS(Ta=25°C unless otherwise specified)**

DESCRIPTION	SYMBOL	A42	A43	UNITS
Collector Emitter Voltage	$V_{CEO}$	300	200	V
Collector Base Voltage	$V_{CBO}$	300	200	V
Emitter Base Voltage	$V_{EBO}$		6.0	V
Collector Current Continuous	$I_C$		500	mA
Total Device Dissipation@Ta=25°C	$P_D$		625	mW
Derate Above 25°C			5.0	mW/°C
Total Device Dissipation@ Tc=25°C	$P_D$		1.5	W
Derate Above 25°C			12	mW/°C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to +150		°C
<b>THERMAL RESISTANCE</b>				
Junction to ambient	$R_{th(j-a)}$		200	°C/W
Junction to case	$R_{th(j-c)}$		83.3	°C/W

# NPN SILICON PLANAR EPITAXIAL TRANSISTORS

**MPSA42  
MPSA43**

**TO-92  
Plastic Package**



## ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS	
Collector Emitter Voltage	$V_{CEO}$	$I_C=1.0mA, I_B=0$					
			MPSA42	300		V	
	MPSA43	200		V			
Collector Base Voltage	$V_{CBO}$	$I_C=100\mu A, I_E=0$					
			MPSA42	300		V	
	MPSA43	200		V			
Emitter Base Voltage	$V_{EBO}$	$I_E=100\mu A, I_C=0$	6.0			V	
Collector-Cut off Current	$I_{CBO}$						
		MPSA42	$V_{CB}=200V, I_E=0$		0.1	$\mu A$	
	MPSA43	$V_{CB}=160V, I_C=0$		0.1	$\mu A$		
Emitter-Cut off Current	$I_{EBO}$						
		MPSA42	$V_{BE}=6.0V, I_C=0$		0.1	$\mu A$	
	MPSA43	$V_{BE}=4.0V, I_C=0$		0.1	$\mu A$		
Collector-Emitter Sat Voltage	$V_{CE(sat)}$	$I_C=20mA, I_B=2.0mA$					
			MPSA42		0.5	V	
	MPSA43		0.4	V			
Base Emitter Sat Voltage	$V_{BE(sat)}$	$I_C=20mA, I_B=2.0mA$					
					0.9	V	
DC Current Gain	$h_{FE}$	$V_{CE}=10V, I_C=1.0mA$					
				25			
				$V_{CE}=10V, I_C=10mA$	40		
				$V_{CE}=10V, I_C=30mA$	40		

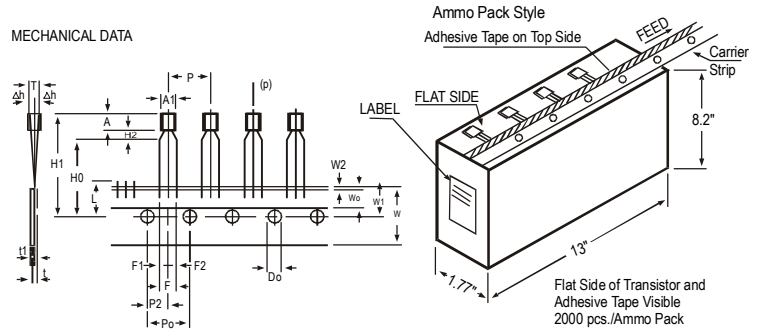
## ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
<b>DYNAMIC CHARACTERISTICS</b>					
Current Gain- Bandwidth Product	$f_T$	$I_C=10mA, V_{CE}=20V$ $f=100MHz$	50		MHz
Collector Base Capacitance	$C_{cb}$	$I_E=0, V_{CB}=20V$ $f=1.0MHz$			
			MPSA42	3.0	$\mu F$
	MPSA43	4.0	$\mu F$		

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

**TO-92 Plastic Package**

**TO-92 Transistors on Tape and Ammo Pack**

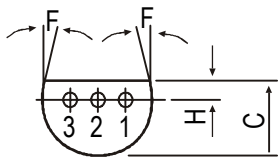
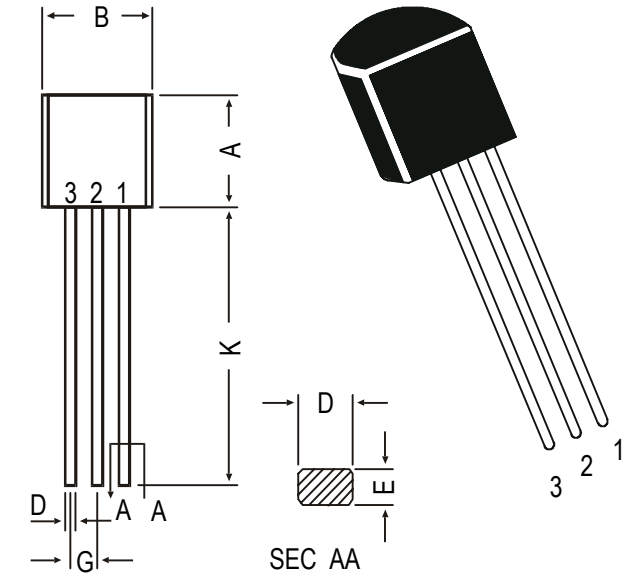


All dimensions in mm unless specified otherwise

ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH TO BE MEASURED AT BOTTOM OF CLINCH
BODY HEIGHT	A	4.8		5.2		
BODY THICKNESS	T	3.9		4.2		
PITCH OF COMPONENT	P		12.7		±1	
FEED HOLE PITCH	Po		12.7		±0.3	
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2	AT TOP OF BODY
COMPONENT ALIGNMENT	Δh		0	1		
TAPE WIDTH	W		18		±0.5	t1 0.3 - 0.6
HOLD-DOWN TAPE WIDTH	W0		6		±0.2	
HOLE POSITION	W1		9		+0.7 -0.5	
HOLD-DOWN TAPE POSITION	W2		0.5		±0.2	
LEAD WIRE CLINCH HEIGHT	Ho		16		±0.5	
COMPONENT HEIGHT	H1			23.25		
LENGTH OF SNIPPED LEADS	L			11.0		
FEED HOLE DIAMETER	Do		4		±0.2	
TOTAL TAPE THICKNESS	t			1.2		
LEAD - TO - LEAD DISTANCE F1,	F2		2.54		+0.4 -0.1	
CLINCH HEIGHT	H2			3		
PULL - OUT FORCE	(P)	6N				

**NOTES**

1. MAXIMUM ALIGNMENT DEVIATION BETWEEN LEADS NOT TO BE GREATER THAN 0.2 mm.
2. MAXIMUM NON-CUMULATIVE VARIATION BETWEEN TAPE FEED HOLES SHALL NOT EXCEED 1 mm IN 20 PITCHES.
3. HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO EXPOSURE OF ADHESIVE.
4. NO MORE THAN 3 CONSECUTIVE MISSING COMPONENTS ARE PERMITTED.
5. A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT.
6. SPLICES SHALL NOT INTERFERE WITH THE SPROCKET FEED HOLES.



**PIN CONFIGURATION**

1. COLLECTOR
2. BASE
3. EMITTER

All dimensions in mm.

DIM	MIN.	MAX.
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 DEG	
G	1.14	1.40
H	1.14	1.53
K	12.70	—

**Packing Detail**

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-92 Bulk	1K/polybag	200 gm/1K pcs	3" x 7.5" x 7.5"	5.0K	17" x 15" x 13.5"	80.0K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2.0K	17" x 15" x 13.5"	32.0K	12.5 kgs

### **Disclaimer**

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