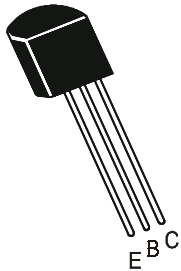


## NPN/PNP SILICON PLANAR AMPLIFIER TRANSISTORS

**MPS650 , MPS651 (NPN)  
MPS750 , MPS751 (PNP)  
TO -92  
CBE**



### AMPLIFIER TRANSISTORS

#### ABSOLUTE MAXIMUM RATINGS.

DESCRIPTION	SYMBOL	MPS650	MPS651	UNITS
		MPS750	MPS751	
Collector -Emitter Voltage	V <sub>CEO</sub>	40	60	V
Collector -Base Voltage	V <sub>CBO</sub>	60	80	V
Emitter -Base Voltage	V <sub>EBO</sub>		5.0	V
Collector Current Continuous	I <sub>C</sub>		2.0	A
Power Dissipation @Ta=25 degC	P <sub>D</sub>		625	mW
Derate Above 25deg C			5.0	mW/deg C
Power Dissipation @Tc=25 degC	P <sub>D</sub>		1.5	W
Derate Above 25deg C			12.0	mW/deg C
Operating And Storage Junction Temperature Range	T <sub>j</sub> , T <sub>stg</sub>		-55 to +150	deg C

#### THERMAL RESISTANCE

Junction to Case	R <sub>th(j-c)</sub>	83.3	deg C/W
Junction to Ambient	R <sub>th(j-a)</sub>	200	deg C/W

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

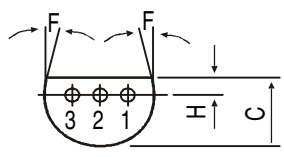
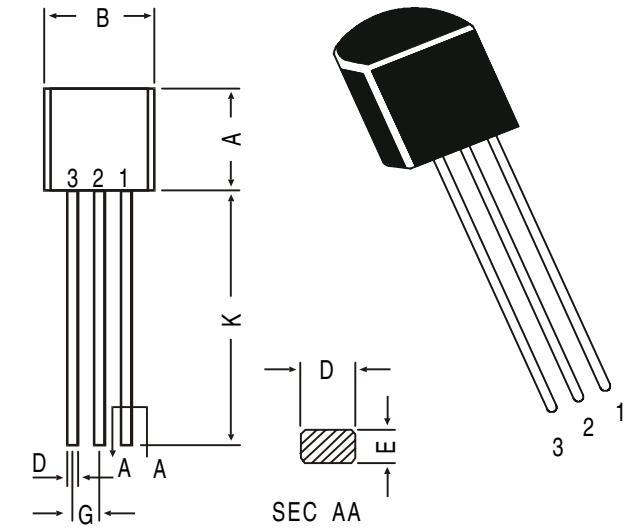
DESCRIPTION	SYMBOL	TEST CONDITION	MPS650	MPS651	UNITS
			MPS750	MPS751	
Collector -Emitter Voltage	V <sub>CEO</sub> *	I <sub>C</sub> =10mA, I <sub>B</sub> =0	>40	>60	V
Collector -Base Voltage	V <sub>CBO</sub>	I <sub>C</sub> =100uA, I <sub>E</sub> =0	>60	>80	V
Emitter -Base Voltage	V <sub>EBO</sub>	I <sub>E</sub> =10uA, I <sub>C</sub> =0	>5.0	>5.0	V
Collector-Cut off Current	I <sub>CBO</sub>	V <sub>CB</sub> =60V, I <sub>E</sub> =0	<100	-	nA
		V <sub>CB</sub> =80V, I <sub>E</sub> =0	-	<100	nA
Emitter-Cut off Current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>C</sub> =0	<100	<100	nA
DC Current Gain	h <sub>FE</sub> *	I <sub>C</sub> =50mA, V <sub>CE</sub> =2V	>75	>75	
		I <sub>C</sub> =500mA, V <sub>CE</sub> =2V	>75	>75	
		I <sub>C</sub> =1A, V <sub>CE</sub> =2V	>75	>75	
		I <sub>C</sub> =2A, V <sub>CE</sub> =2V	>40	>40	
Collector Emitter Saturation Voltage	V <sub>CE(Sat)</sub> *	I <sub>C</sub> =2A, I <sub>B</sub> =200mA	<0.50	<0.50	V
		I <sub>C</sub> =1A, I <sub>B</sub> =100mA	<0.30	<0.30	V
Base Emitter on Voltage	V <sub>BE(on)</sub> *	I <sub>C</sub> =1A, V <sub>CE</sub> =2V	<1.0	<1.0	V
Base Emitter Saturation Voltage	V <sub>BE(Sat)</sub> *	I <sub>C</sub> =1A, I <sub>B</sub> =100mA	<1.2	<1.2	V
Current Gain-Bandwidth Product	f <sub>t</sub> **	I <sub>C</sub> =50mA, V <sub>CE</sub> =5V f=100MHz	>75	>75	MHz

\*Pulse Condition : Length =300us, Duty Cycle=2%

\*\*f<sub>t</sub> is defined as the frequency at which /hfe/ extrapolates to unity

# TO-92 Plastic Package

## TO-92 Transistors on Tape and Ammo Pack

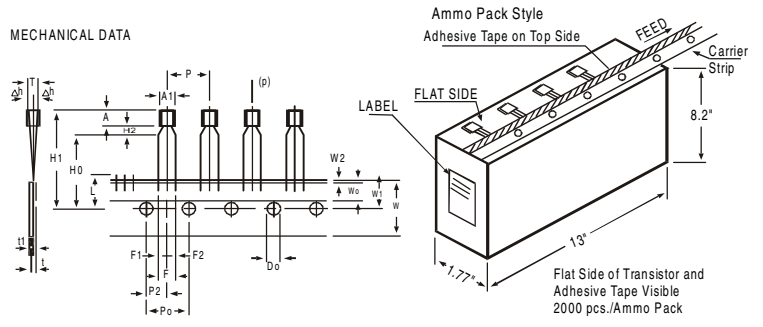


- PIN CONFIGURATION**
1. COLLECTOR
  2. BASE
  3. EMITTER

SEC AA

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	—



All dimensions in mm unless specified otherwise

ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		
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	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F	5.08			+0.6 -0.2	
COMPONENT ALIGNMENT	Δh	0		1		AT TOP OF BODY
TAPE WIDTH	W	18			±0.5	
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			t 0.3 - 0.6
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.

## 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

## Customer Notes

### Disclaimer

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