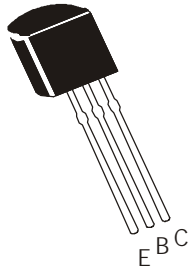


NPN SILICON PLANAR AMPLIFIER TRANSISTOR

MPS5172



TO-92
Plastic Package

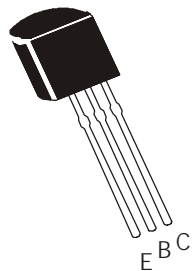
ABSOLUTE MAXIMUM RATINGS(Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Emitter Voltage	V_{CEO}	25	V
Collector Base Voltage	V_{CBO}	25	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current Continuous	I_C	100	mA
Power Dissipation@ Ta=25°C	P_D	625	mW
Derate Above 25°C		5.0	mW/ °C
Power 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
THERMAL RESISTANCE			
Junction to ambient	$R_{th(j-a)}$	200	°C/W
Junction to case	$R_{th(j-c)}$	83.3	°C/W

ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Voltage	V_{CEO}	$I_C=10mA, I_B=0$	25			V
Collector Cut off Current	I_{CBO}	$V_{CB}=25V, I_E = 0$			100	nA
	I_{CBO}	$V_{CB}=25V, I_E = 0$ Ta= 100°C			10	µA
	I_{CES}	$V_{CE}=50V, V_{BE}=0$			100	nA
Emitter Cut off Current	I_{EBO}	$V_{BE}=5V, I_C = 0$			100	nA
DC Current Gain	h_{FE}^*	$V_{CE}=10V, I_C=10mA$	100		500	
Base Emitter (Sat) Voltage	$V_{BE(sat)}$	$I_C=10mA, I_B=1.0mA$		0.75		V
Base Emitter (On) Voltage	$V_{BE(on)}$	$I_C=10mA, I_B= 10mA$	0.5		1.2	V
Collector Emitter (Sat) Voltage	$V_{CE(sat)}$	$I_C=10mA, I_B=1.0mA$			0.25	V

*Pulse Condition: = Width =300us, Duty Cycle = 2%.

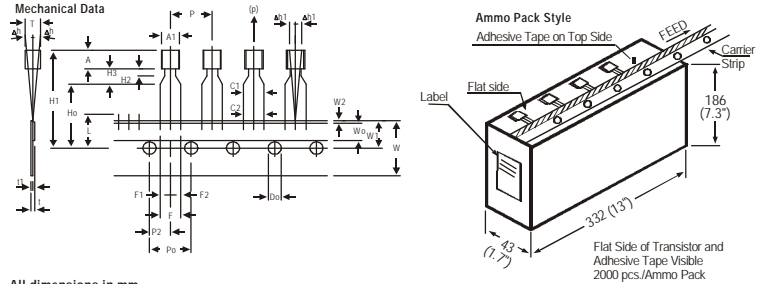
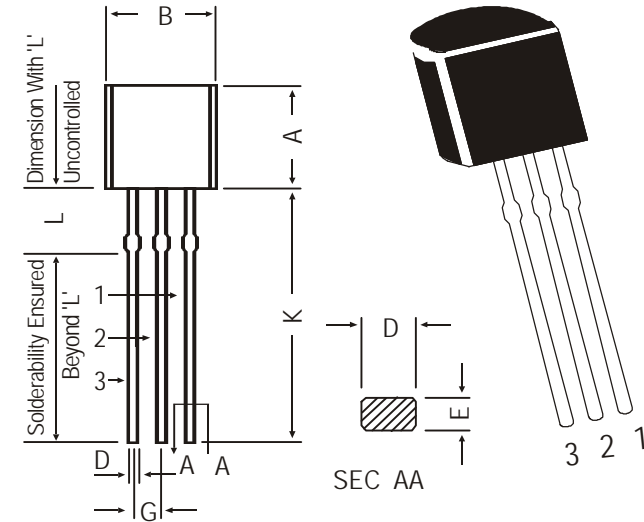
NPN SILICON PLANAR AMPLIFIER TRANSISTOR**MPS5172****TO-92
Plastic Package****ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
SMALL SIGNAL CHARACTERISTICS						
Current Gain-Bandwidth Product	f_T	$I_C=2.0\text{mA}, V_{CE}=5\text{V}$		120		MHz
Collector Base Capacitance	C_{C_b}	$I_E=0, V_{CB}=0$ $f=1\text{MHz}$	1.6		10	pF
Small Signal Current Gain	$ h_{fe} $	$V_{CE}=10\text{V}, I_C=10\text{mA}$ $f=1\text{KHz}$	100		750	

*Pulse Condition: = Width =300us, Duty Cycle = 2%.

TO-92 Plastic Package

TO-92 Transistors on Tape and Ammo Pack



All dimensions in mm

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		± 1.0	
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 SIDE VIEW	Δh	0	1.0		AT TOP OF BODY
COMPONENT ALIGNMENT FRONT VIEW	Δh1	0	1.3		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	16	± 0.2 ± 0.5	
LEAD WIRE CLINCH HEIGHT	Ho			± 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		t1 0.3-0.6
LEAD - TO - LEAD DISTANCE	F1, F2	2.54		+ 0.4 - 0.1	
STAND OFF	H2	0.45	1.45		
CLINCH HEIGHT	H3		3.0		
LEAD PARALLELISM	C1 - C2		0.22		
PULL - OUT FORCE	(P)	6N			

NOTES

1. Maximum alignment deviation between leads will not be greater than 0.2mm.
2. Maximum non-cumulative variation between tape feed holes shall not exceed 1 mm in 20 pitches.
3. Holddown tape will not exceed beyond the edge(s) of carrier tape and there shall be no exposure of adhesive.
4. There will be no more than three (3) consecutive missing components in a tape.
5. A tape trailer, having at least three feed holes are provided after the last component in a tape.
6. Splices should not interfere with the sprocket feed holes.

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	—
L	1.982	2.082

All dimensions in mm.

PIN CONFIGURATION

1. COLLECTOR
2. BASE
3. EMITTER

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"	5K	17" x 15" x 13.5"	80K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2K	17" x 15" x 13.5"	32K	12.5 kgs

Disclaimer

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