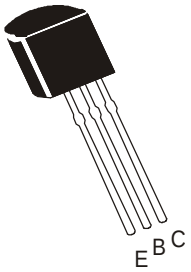
NPN/PNP SILICON PLANAR EPITAXIAL TRANSISTORS

MPSA05,MPSA06
MPSA55,MPSA56

TO-92
Plastic Package

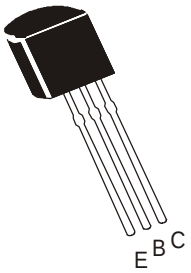


Amplifier Transistors

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

DESCRIPTION	SYMBOL	MPSA05 MPSA55	MPSA06 MPSA56	UNITS
Collector Emitter Voltage	V_{CEO}	60	80	V
Collector Base Voltage	V_{CBO}	60	80	V
Emitter Base Voltage	V_{EBO}	4		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
THERMAL RESISTANCE				
Junction to ambient	$R_{th(j-a)\ (1)}$	200		°C/mW
Junction to case	$R_{th(j-c)}$	83.3		°C/mW

(1) $R_{th(j-a)}$ is measured with the device soldered into a typical printed circuit board.



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=1mA,I_B=0				
MPSA05/55			60			V
MPSA06/56			80			V
Emitter-Base Voltage	V_{EBO}	I_E=100uA, I_C=0	4.0			V
Collector-Cut off Current	I_{CBO}					
MPSA05/55		V_{CB}=60V, I_E = 0			0.1	uA
MPSA06/56		V_{CB}=80V, I_E = 0			0.1	uA
Collector-Cut off Current	I_{CEO}	V_{CE}=60V,I_B =0			0.1	uA
Collector-Emitter (sat) Voltage	V_{CE}(sat)	I_C=100mA,I_B=10mA			0.25	V
Base-Emitter(on) Voltage	V_{BE}(on)	I_C=100mA,V_{CE}=1V			1.2	V
DC Current Gain						uA
	h_{FE}	V_{CE}=1V,I_C=10mA	100			
		V_{CE}=1V,I_C=100mA	100			

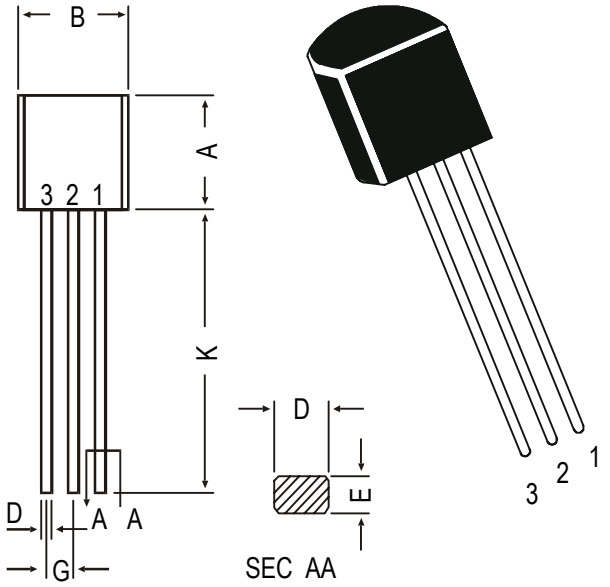
ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Otherwise Specified)

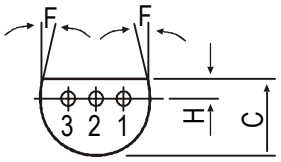
DESCRIPTION		SYMBOL	TEST CONDITION	MIN	MAX	UNITS
DYNAMIC CHARACTERISTICS						
Transition Frequency						
	NPN	f_T**	I_C=10mA, V_{CE}=2V f=100MHz	100		MHz
	PNP		I_C=100mA, V_{CE}=1V f=100MHz	50		MHz

***Pulse Test : Pulse Width ≤ 300us, Duty Cycle ≤ 2%.**

**** f_T is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.**

TO-92 Plastic Package





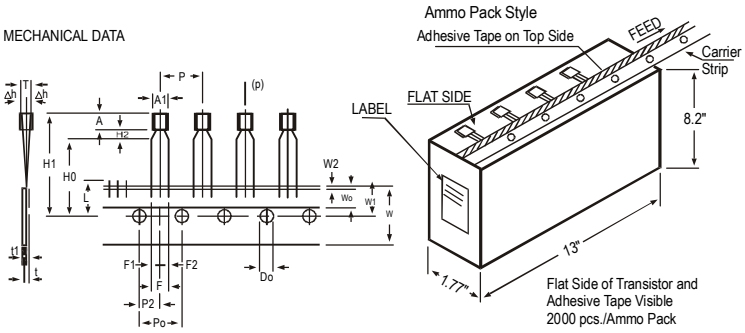
PIN CONFIGURATION
1. COLLECTOR
2. BASE
3. EMITTER

All diminsions 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	—

TO-92 Transistors on Tape and Ammo Pack

MECHANICAL DATA



All dimensions in mm unless specified otherwise

ITEM	SYMBOL	SPECIFICATION MIN.	NOM.	MAX.	TOL .	REMARKS
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	△h		0	1		AT TOP OF BODY
TAPE WIDTH	W		18		±0.5	
HOLD-DOWN TAPE WIDTH	Wo		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		t1 0.3 - 0.6
LEAD - TO - LEAD DISTANCEF1,	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

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