



# NPN/PNP SILICON PLANAR EPITAXIAL TRANSISTORS



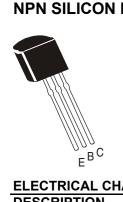
MPSA05,MPSA06 MPSA55,MPSA56

TO-92 Plastic Package

## Amplifier Transistors

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

DESCRIPTION	SYMBOL	MPSA05	MPSA06	UNITS	
		MPSA55	MPSA56		
Collector Emitter Voltage	V <sub>CEO</sub>	60	80	V	
Collector Base Voltage	V <sub>CBO</sub>	60	80	V	
Emitter Base Voltage	V <sub>EBO</sub>	4		V	
Collector Current Continuous	I <sub>C</sub>	500	mA		
Total Device Dissipation@Ta=25°C	P <sub>D</sub>	625	mW		
Derate Above 25°C		5.0	)	mW/°C	
Total Device Dissipation@ Tc=25°C	PD	1.5	5	W	
Derate Above 25°C		12		mW/°C	
Operating And Storage Junction	T <sub>j</sub> , T <sub>stg</sub>	-55 to -	+150	°C	
Temperature Range					
THERMAL RESISTANCE					
Junction to ambient	R <sub>th(j-a) (1)</sub>	200	)	°C/mW	
Junction to case	R <sub>th(j-c)</sub>	83.3	3	°C/mW	
(1) R <sub>th(j-a</sub> ) is measured with the devic	e soldered into a typ	ical printed circuit board.			



TO-92	
	Package

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Voltage	V <sub>CEO</sub> *	I <sub>C</sub> =1mA,I <sub>B</sub> =0				
MPSA05/55			60			V
MPSA06/56			80			V
Emitter-Base Voltage	$V_{EBO}$	I <sub>E</sub> =100uA, I <sub>C</sub> =0	4.0			V
Collector-Cut off Current	I <sub>CBO</sub>					
MPSA05/55		V <sub>CB</sub> =60V, I <sub>E</sub> = 0			0.1	uA
MPSA06/56		V <sub>CB</sub> =80V, I <sub>E</sub> = 0			0.1	uA
Collector-Cut off Current	I <sub>CEO</sub>	V <sub>CE</sub> =60V,I <sub>B</sub> =0			0.1	uA
Collector-Emitter (sat) Voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> =100mA,I <sub>B</sub> =10mA			0.25	V
Base-Emitter(on) Voltage	V <sub>BE</sub> (on)	I <sub>C</sub> =100mA,V <sub>CE</sub> =1V			1.2	V
DC Current Gain						uA
	$h_{\text{FE}}$	V <sub>CE</sub> =1V,I <sub>C</sub> =10mA	100			
		V <sub>CE</sub> =1V,I <sub>C</sub> =100mA	100			
ELECTRICAL CHARACTERISTICS (1						
DESCRIPTION	SYMBOL	TEST CONDITION	MIN		MAX	UNITS
DYNAMIC CHARACTERISTICS						
Transition Frequency						
NPN	f <sub>T</sub> **	I <sub>C</sub> =10mA, V <sub>CE</sub> =2V f=100MHz	100			MHz

I<sub>C</sub>=100mA, V<sub>CE</sub>=1V

f=100MHz

50

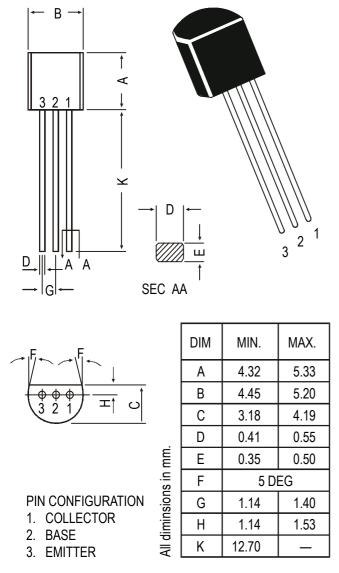
\*Pulse Test : Pulse Width < 300us, Duty Cycle < 2%.

\*\*  $f_T$  is defined as the frequency at which  $Ih_{fe}I$  extrapolates to unity.

**PNP** 

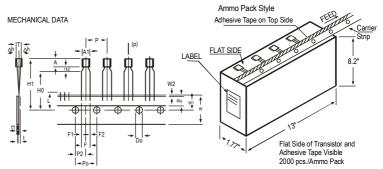
MHz

# **TO-92 Plastic Package**



## **TO-92 Plastic Package**

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



#### All dimensions in mm unless specified otherwise

ITEM		SPECIFICATION			DELLADIZA	
ITEM	SYMBOL	MIN. NOM. M		MAX.	TOL .	REMARKS
BODY WIDTH BODY HEIGHT BODY THICKNESS	A1 A T	4.0 4.8 3.9	40.7	4.8 5.2 4.2		
PITCH OF COMPONENT FEED HOLE PITCH	P Po		12.7 12.7		±1 ±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 COMPONENT ALIGNMENT TAPE WIDTH HOLD-DOWN TAPE WIDTH HOLE POSITION	F △h W Wo W1		5.08 0 18 6 9	1	+0.6 -0.2 ±0.5 ±0.2 +0.7 -0.5	AT TOP OF BODY
HOLD-DOWN TAPE POSITION LEAD WIRE CLINCH HEIGHT COMPONENT HEIGHT LENGTH OF SNIPPED LEADS FEED HOLE DIAMETER TOTAL TAPE THICKNESS LEAD - TO - LEAD DISTANCEF1,	W2 Ho H1 L Do t F2		0.5 16 4 2.54	23.25 11.0 1.2	±0.2 ±0.5 ±0.2 +0.4	t1 0.3 - 0.6
CLINCH HEIGHT PULL - OUT FORCE	H2 (P)	6N		3	-0.1	

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.

A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT.
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 TO-92 T&A	1K/polybag 2K/ammo box	200 gm/1K pcs 645 gm/2K pcs	3" x 7.5" x 7.5" 12.5" x 8" x 1.8"	5.0K 2.0K	17" x 15" x 13.5" 17" x 15" x 13.5"	80.0K 32.0K	23 kgs 12.5 kgs

### MPSA05,MPSA06 MPSA55,MPSA56

TO-92 Plastic Package

### Disclaimer

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MPS05\_06\_55\_56REV081001

Data Sheet