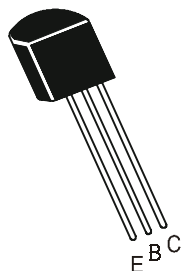


## PNP SILICON PLANAR EPITAXIAL TRANSISTORS

**MPS2907  
MPS2907A**

**TO-92  
Plastic Package**



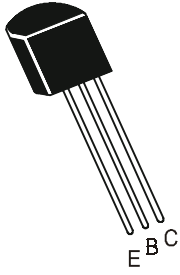
### General Purpose Transistors

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

DESCRIPTION	SYMBOL	MPS2907	MPS2907A	UNITS
Collector Emitter Voltage	$V_{CEO}$	40	60	V
Collector Base Voltage	$V_{CBO}$		60	V
Emitter Base Voltage	$V_{EBO}$		5	V
Collector Current Continuous	$I_C$		600	mA
Power Dissipation @ Ta=25°C	$P_D$		625	mW
Derate Above 25°C			5	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
<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

**PNP SILICON PLANAR EPITAXIAL TRANSISTORS**

**MPS2907  
MPS2907A**



**TO-92  
Plastic Package**

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

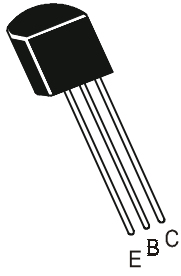
DESCRIPTION	SYMBOL	TEST CONDITION	MPS2907		MPS2907A		UNITS
			MIN	MAX	MIN	MAX	
Collector Emitter Voltage	$BV_{CEO}^*$	$I_C=10mA, I_B=0$	40		60		V
Collector Base Voltage	$BV_{CBO}$	$I_C=10\mu A, I_E=0$	60		60		V
Emitter-Base Voltage	$BV_{EBO}$	$I_E=10\mu A, I_C=0$	5		5		V
Collector-Cut off Current	$I_{CBO}$	$V_{CB}=50V, I_E = 0$ $V_{CB}=50V, I_E = 0,$ $T_A = 150^{\circ}C$		20		10	nA
				20		10	$\mu A$
Collector-Cut off Current	$I_{CEX}$	$V_{CE}=30V, V_{EB}(off)=0.5V$		50		50	nA
Collector-Cut off Current	$I_{CEO}$	$V_{CE}=10V$		10		10	nA
Emitter Cut off Current	$I_{EBO}$	$V_{EB}=3V, I_C = 0$		10		10	nA
Base Cut off Current	$I_{BEX}$	$V_{CE}=30V, V_{EB}(off)=0.5V$		50		50	nA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}^*$	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$		0.4		0.4	V
				1.6		1.6	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}^*$	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$		1.3		1.3	V
				2.6		2.6	V
DC Current Gain	$h_{FE}$	$V_{CE}=10V, I_C=0.1mA$ $V_{CE}=10V, I_C=1mA$ $V_{CE}=10V, I_C=10mA$ $V_{CE}=10V^*, I_C=150mA$ $V_{CE}=10V^*, I_C=500mA$		35		75	
				50		100	
				75		100	
				100	300	100	300
				30		50	

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

DYNAMIC CHARACTERISTICS	SYMBOL	TEST CONDITION	MPS2907		MPS2907A		UNITS
			MIN	MAX	MIN	MAX	
Transition Frequency	$f_T^{*(1)}$	$I_C=50mA, V_{CE}=20V$ $f=100MHz$	200		200		MHz
Output Capacitance	$C_{ob}$	$I_E=0, V_{CB}=10V$ $f=1MHz$		8		8	pF
Input Capacitance	$C_{ib}$	$I_C=0, V_{EB}=2V$ $f=1MHz$		30		30	pF

# PNP SILICON PLANAR EPITAXIAL TRANSISTORS

**MPS2907  
MPS2907A**



**TO-92  
Plastic Package**

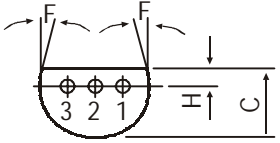
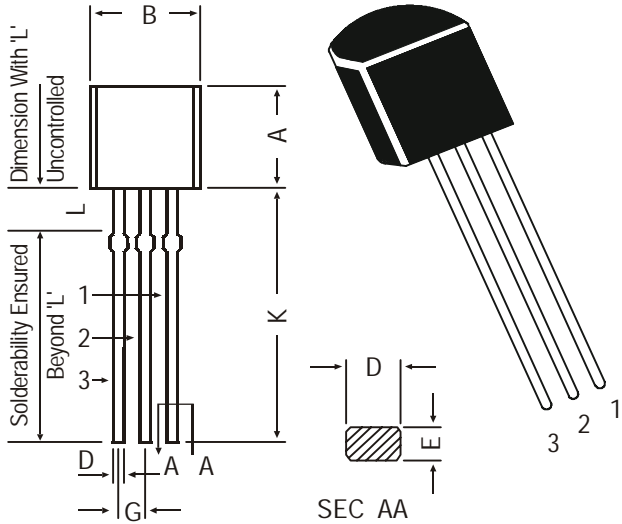
SWITCHING CHARACTERISTICS	SYMBOL	TEST CONDITION	MPS2907		MPS2907A		UNITS
			MIN	MAX	MIN	MAX	
		$I_C = 150\text{mA}, I_{B1} = 15\text{mA},$ $V_{CC} = 30\text{V}$					
Delay Time	$t_d$			10		10	ns
Rise Time	$t_r$			40		40	ns
Turn On Time	$t_{on}$			45		45	ns
		$I_C = 150\text{mA}, I_{B1} = I_{B2} = 15\text{mA},$ $V_{CC} = 6\text{V}$					
Storage Time	$t_s$			80		80	ns
Fall Time	$t_f$			30		30	ns
Turn Off Time	$t_{off}$			100		100	ns

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

<sup>(1)</sup> $f_T$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to unity.

**TO-92 Plastic Package**

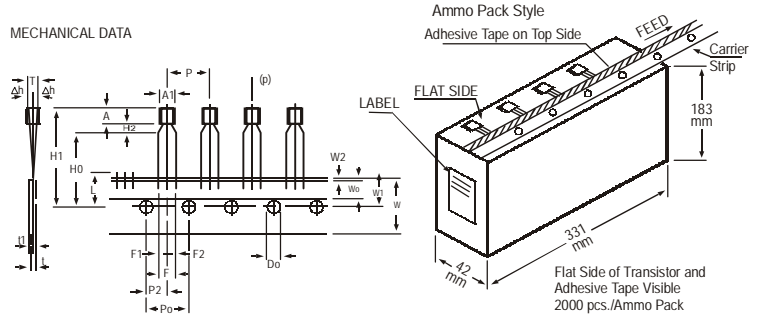
**TO-92 Transistors on Tape and Ammo Pack**



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

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.



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		±0.3	
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	11 0.3 - 0.6
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		11 0.3 - 0.6
FEED HOLE DIAMETER	Do		4		±0.2	
TOTAL TAPE THICKNESS	t			1.2		11 0.3 - 0.6
LEAD - TO - LEAD DISTANCE F1,	F2		2.54		+0.4 -0.1	
CLINCH HEIGHT	H2			3		6N
PULL - OUT FORCE	(P)					

**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"	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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