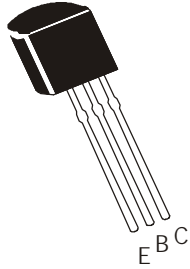


NPN SILICON PLANAR EPITAXIAL TRANSISTORS

**MPS8098
MPS8099**



**TO-92
Plastic Package**

Amplifier Transistors

ABSOLUTE MAXIMUM RATING

DESCRIPTION	SYMBOL	MPS8098	MPS8099	UNITS
Collector Base Voltage	V_{CBO}	60	80	V
Collector Emitter Voltage	V_{CEO}	60	80	V
Emitter Base Voltage	V_{EBO}	6.0		V
Collector Current Continuous	I_C	500		mA
Power Dissipation $T_a=25^\circ\text{C}$ Derate Above 25°C	P_D	625 5.0		mW mW/°C
Power Dissipation $T_c=25^\circ\text{C}$ Derate Above 25°C	P_D	1.5 12		W mW/°C
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 55 to +150		°C

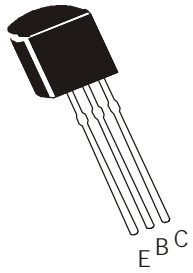
THERMAL CHARACTERISTICS

Junction to Case	$R_{th(j-c)}$	83.3	°C/W
Junction to Ambient in free air	$R_{th(j-a)}$	200	°C/W

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Base Voltage	V_{CBO}	$I_C=100\mu\text{A}, I_E=0$				
		MPS8098	60			V
		MPS8099	80			V
Collector Emitter Voltage	V_{CEO}	$I_C=10\text{mA}, I_B=0$				
		MPS8098	60			V
		MPS8099	80			V
Emitter Base Voltage	V_{EBO}	$I_E=10\mu\text{A}, I_C=0$	6.0			V
Collector Cut Off Current	I_{CEO}	$V_{CE}=60\text{V}, I_B=0$			0.1	μA
Collector Cut Off Current	I_{CBO}	MPS8098			0.1	μA
		$V_{CB}=60\text{V}, I_E=0$				
		MPS8099			0.1	μA
		$V_{CB}=80\text{V}, I_E=0$				
Emitter Cut Off Current	I_{EBO}	$V_{EB}=6\text{V}, I_C=0$			0.1	μA

NPN SILICON PLANAR EPITAXIAL TRANSISTOR



MPS8098
MPS8099

TO-92
Plastic Package

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
DC Current Gain	*h _{FE}	I _C =1mA, V _{CE} =5V	100		300	
		I _C =10mA, V _{CE} =5V	100			
		I _C =100mA, V _{CE} =5V	75			
Collector Emitter Saturation Voltage	*V _{CE(sat)}	I _C =100mA, I _B =5mA			0.4	V
		I _C =100mA, I _B =10mA			0.3	V
Base Emitter On Voltage	*V _{BE(on)}	MPS8098 I _C =1mA, V _{CE} =5V	0.5		0.7	V
		MPS8099 I _C =10mA, V _{CE} =5V	0.6		0.8	V

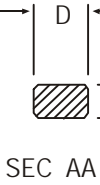
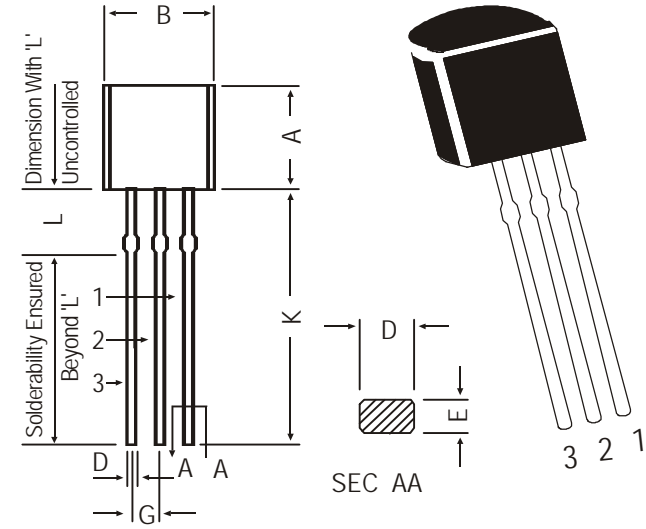
SMALL SIGNAL CHARACTERISTICS

Current Gain Bandwidth Product	f _T	I _C =10mA, V _{CE} =5V, f=100MHz	150			MHz
Output Capacitance	C _{obo}	I _E =0, V _{CB} =5V, f=1MHz			6.0	pF
Input Capacitance	C _{ibo}	I _C =0, V _{EB} =0.5V, f=1MHz			25	pF

*Pulse Test: Pulse Width ≤ 300μs, Duty Cycle=2%

TO-92 Plastic Package

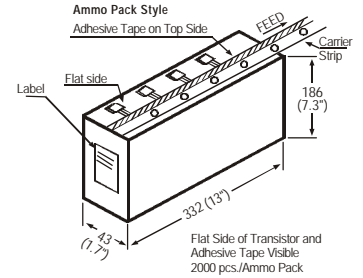
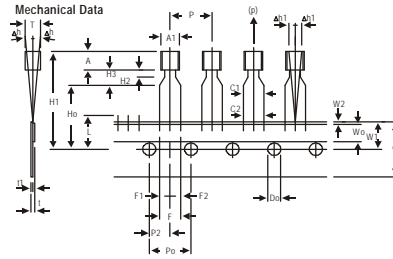
TO-92 Transistors on Tape and Ammo Pack



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 diminsions in mm.

PIN CONFIGURATION
1. COLLECTOR
2. BASE
3. EMITTER



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	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 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

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