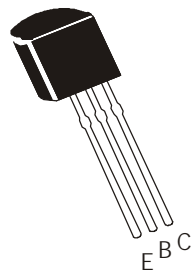


NPN SILICON PLANAR EPITAXIAL TRANSISTORS



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 $T_a=25^\circ\text{C}$	P_D	625		mW
Derate Above 25°C		5.0		mW/ $^\circ\text{C}$
Power Dissipation $T_c=25^\circ\text{C}$	P_D	1.5		W
Derate Above 25°C		12		mW/ $^\circ\text{C}$
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 55 to +150		$^\circ\text{C}$

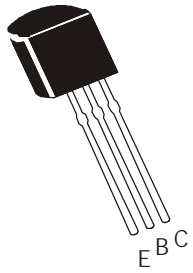
THERMAL CHARACTERISTICS

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

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
		MPS8099			0.1	μA
		$V_{CB}=60\text{V}, I_E=0$				
		$V_{CB}=80\text{V}, I_E=0$				
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

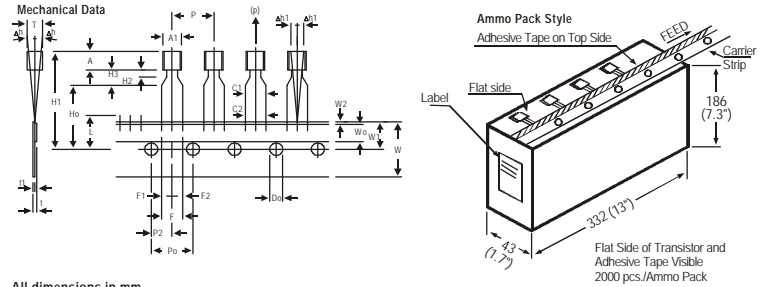
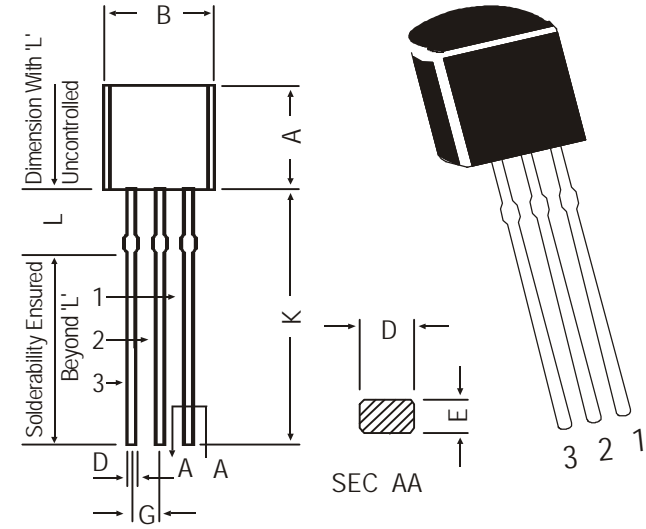
SMALL SIGNAL CHARACTERISTICS

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



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.

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

- COLLECTOR
- BASE
- 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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