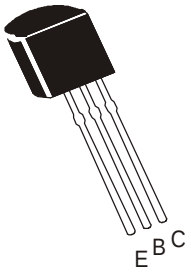
NPN SILICON PLANAR EPITAXIAL TRANSISTORS

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=25ºC	P_D	625		mW
Derate Above 25ºC		5.0		mW/ºC
Power Dissipation T_c=25ºC	P_D	1.5		W
Derate Above 25ºC		12		mW/ºC
Operating And Storage Junction Temperature Range	T_j,T_{stg}	- 55 to +150		ºC

THERMAL CHARACTERISTICS

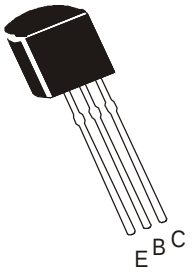
Junction to Case	$R_{th(j-c)}$	83.3	ºC/W
Junction to Ambient in free air	$R_{th(j-a)}$	200	ºC/W

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

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

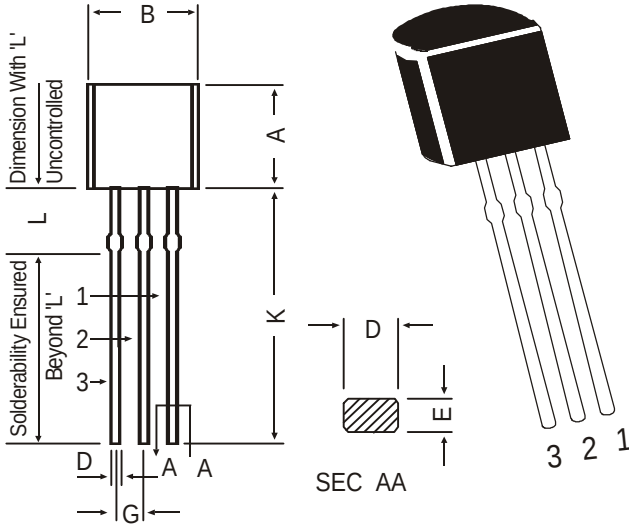
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
DC Current Gain	*h_{FE}	I_C=1mA, V_{CE}=5V	100		300	
		I_C=10mA, V_{CE}=5V	100			
		I_C=100mA, V_{CE}=5V	75			
Collector Emitter Saturation Voltage	*$V_{CE(sat)}$	I_C=100mA, I_B=5mA			0.4	V
		I_C=100mA, I_B=10mA			0.3	V
Base Emitter On Voltage	*$V_{BE(on)}$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

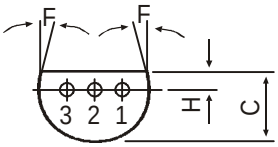
SMALL SIGNAL CHARACTERISTICS

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



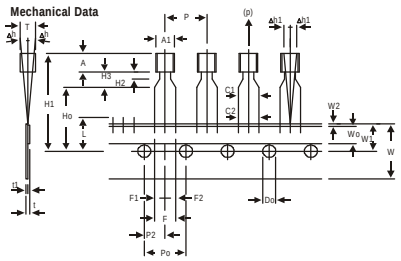


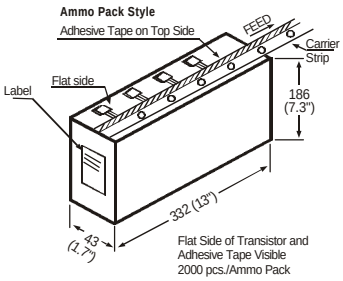
PIN CONFIGURATION
1. COLLECTOR
2. BASE
3. EMITTER

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 diminsions in mm.

TO-92 Transistors on Tape and Ammo Pack





All dimensions in mm

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		± 1.0	
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	△h		0	1.0		AT TOP OF BODY
COMPONENT ALIGNMENT FRONT VIEW	△h1		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
1. Maximum alignment deviation between leads will not to be greater than 0.2mm.
2. Maximum non-cumulative variation between tape feed holes shall not exceed 1 mm in 20 pitches.
3. Holddown tape will not exceed beyond the edge(s) of carrier tape and there shall be no exposure of adhesive.
4. There will be no more than three (3) consecutive missing components in a tape.
5. A tape trailer, having at least three feed holes are provided after the last component in a tape.
6. 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

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