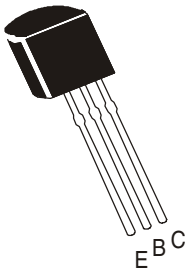
NPN SILICON PLANAR EPITAXIAL TRANSISTORS

MPS6530
MPS6531



TO-92
Plastic Package

AMPLIFIER TRANSISTOR

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Emitter Voltage	V_{CEO}	40	V
Collector Base Voltage	V_{CBO}	60	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current Continuous	I_C	600	mA
Power Dissipation @ T_a=25ºC Derate Above 25ºC	P_D	625 5	mW mW/ºC
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 55 to +150	

THERMAL CHARACTERISTICS

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

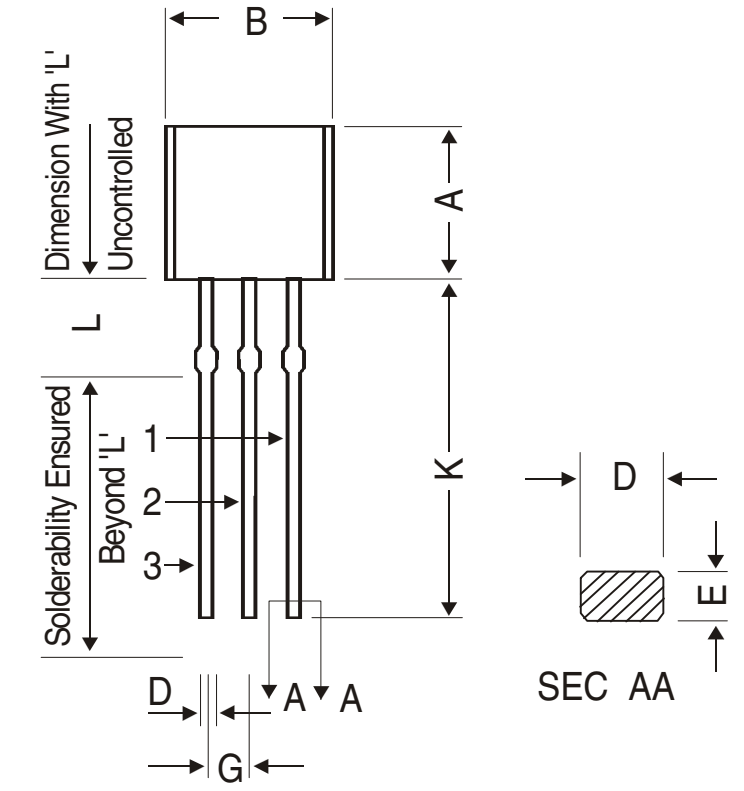
ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Collector Emitter Voltage	V_{CEO}	I_C=10mA, I_B=0	40		V
Collector Base Voltage	V_{CBO}	I_C=10µA, I_E=0	60		V
Emitter Base Voltage	V_{EBO}	I_E=10µA, I_C=0	5		V
Collector Cut Off Current	I_{CBO}	V_{CB}=40V, I_E=0, V_{CB}=40V, I_E=0, T_a=60ºC		50 2.0	nA µA
DC Current Gain	h_{FE}	I_C=10mA, V_{CE}=1V			
		MPS6530	30		
		MPS6531	60		
		I_C=100mA, V_{CE}=1V			
		MPS6530	40	120	
		MPS6531	90	270	
		I_C=500mA, V_{CE}=10V			
		MPS6530	25		
		MPS6531	50		
Collector Emitter Saturation Voltage	$V_{CE\ (sat)}$	I_C=100mA, I_B=10mA			
		MPS6530		0.5	V
		MPS6531		0.3	V
Base Emitter Saturation Voltage	$V_{BE\ (sat)}$	I_C=100mA, I_B=10mA		1.0	V

DYNAMIC CHARACTERISTICS

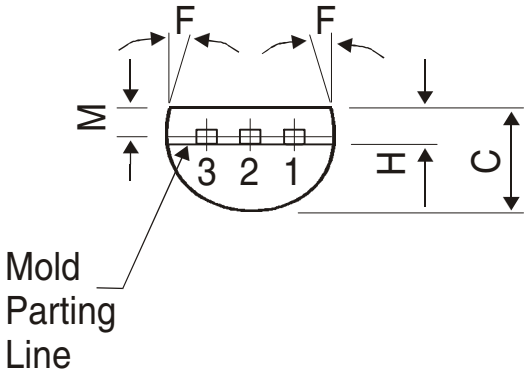
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Output Capacitance	C_{obo}	V_{CB}=10V, I_E=0, f=1MHz		7	pF

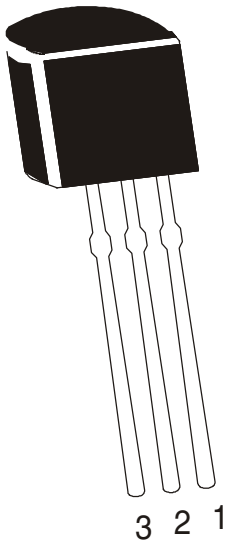
TO-92 Plastic Package



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	1.20	1.40
K	12.70	—
L	1.982	2.082
M	1.03	1.20

All dimensions are in mm





PIN CONFIGURATION
1. COLLECTOR
2. BASE
3. EMITTER

The TO-92 Package, Tape and Ammo Pack Drawings are correct as on the date of issue/revision of this Data Sheet.

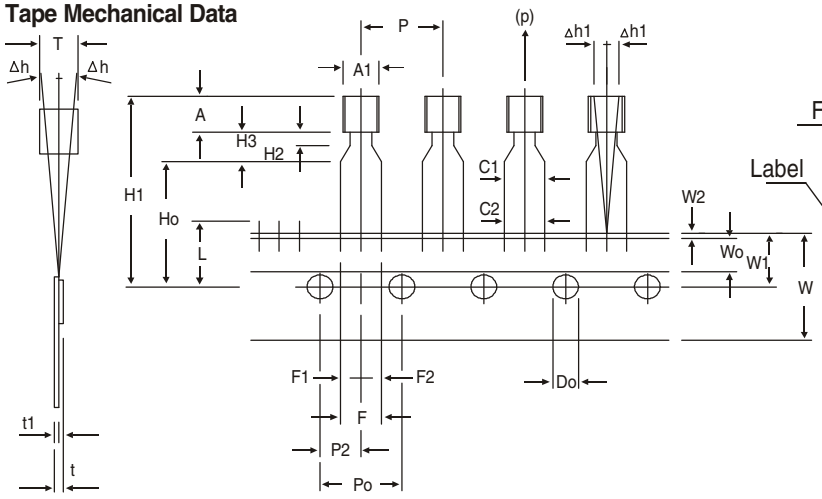
The currently valid dimensions and information, may please be confirmed from the TO-92 Drawing in the Packages and Packing Section of the Product Catalogue.

Packing Details

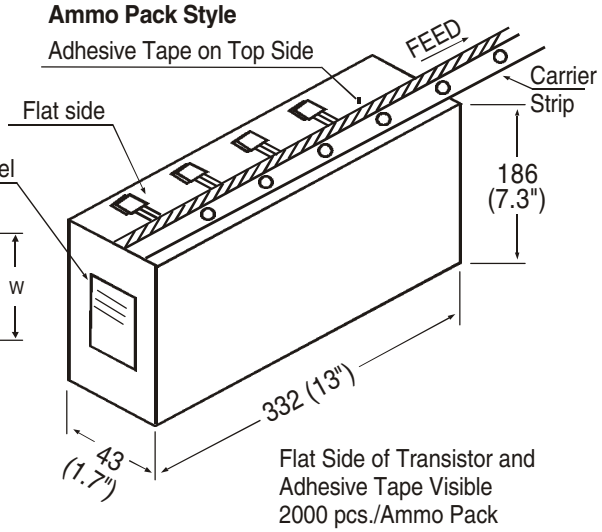
PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/ Qty	Size	Qty	Size	Qty	Gr Wt
TO-92 Bulk	1K/polybag	200 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2K	17" x 15" x 13.5"	32K	12.5 kgs

TO-92 Tape and Ammo Pack

Tape Mechanical Data



Ammo Pack Style



All dimensions are in mm

ITEM	SYMBOL	SPECIFICATION			
		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
*1 FEED HOLE PITCH	Po		12.7		± 0.3
*2 FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		± 0.4
DISTANCE BETWEEN OUTER LEADS	F		5.08		+ 0.6 - 0.2
*3 COMPONENT ALIGNMENT SIDE VIEW	△h		0	1.0	
*4 COMPONENT ALIGNMENT FRONT VIEW	△h1		0	1.3	
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
*5 TOTAL TAPE THICKNESS	t			1.2	
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.

REMARKS

*1 Cumulative pitch error 1.0 mm/20 pitch

*2 To be measured at bottom of clinch

*3 At top of body

*4 At top of body

*5 t1 0.3 – 0.6 mm

Disclaimer

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