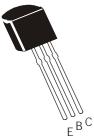
An ISO/TS16949 and ISO 9001 Certified Company

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	Ι _C	600	mA
Power Dissipation @ T _a =25 ^o C	P _D	625	mW
Derate Above 25°C		5	mW/⁰C
Operating And Storage Junction Temperature Range	T _j , T _{stg}	- 55 to +150	

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°C 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 =10μΑ, I _E =0	60		V
Emitter Base Voltage	V _{EBO}	I _E =10μΑ, I _C =0	5		V
Collector Cut Off Current	I _{CBO}	V _{CB} =40V, I _E =0,		50	nA
		V _{CB} =40V, I _E =0, T _a =60°C		2.0	μΑ
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

MPS6530 MPS6531

TO-92 Plastic Package

MAX.

5.33

5.20

4.19

0.55

0.50

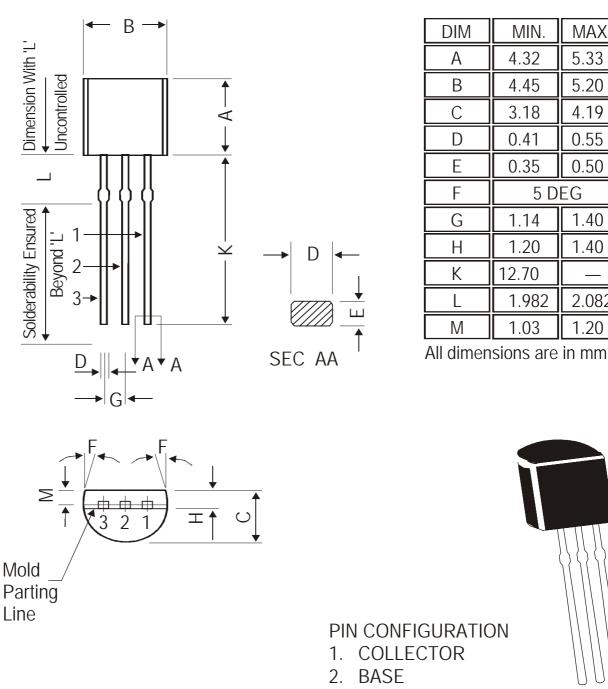
1.40

1.40

2.082

1.20

5 DEG



TO-92 Plastic Package

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	STAND	ARDPACK	INNER CARTO	N 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

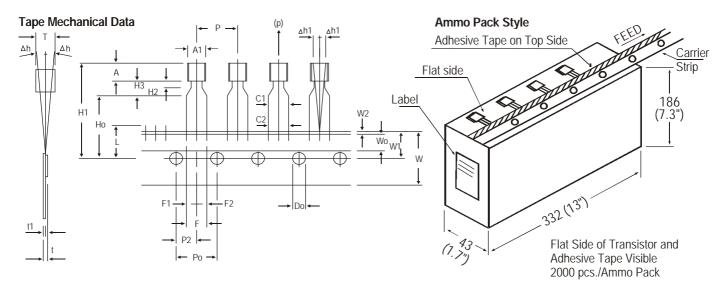
3.

EMITTER

21

3

TO-92 Plastic Package



TO-92 Tape and Ammo Pack

All dimensions are in mm

ITEMSYMBOLMIN.NOM.MAX.TOL .BODY WIDTHA14.04.8NOTESBODY HEIGHTA4.85.21BODY THICKNESST3.94.21PITCH OF COMPONENTP12.7± 1.02PITCH OF COMPONENTPo12.7± 0.32*1 FEED HOLE PITCHPo12.7± 0.32*2 FEED HOLE CENTRE TO COMPONENT CENTREP26.35± 0.43DISTANCE BETWEEN OUTER LEADSF5.08± 0.43*3 COMPONENT ALIGNMENT SIDE VIEW HOLD-DOWN TAPE WIDTH△h01.04W06± 0.25. A tape trailer, having at least three (3) components in tape.HOLD-DOWN TAPE POSITION LEAD WIRE CLINCH HEIGHTW20.5± 0.25. A tape trailer, having at least three follows.HOLD-DOWN TAPE POSITION LEAD WIRE CLINCH HEIGHTW20.5± 0.26. Splices should not interfere with the sprocket feed holes.			ON	FICATI	SPEC			17514
BODY HEIGHTA4.85.21. Maximum alignment deviation betw leads will not to be greater than 0.2BODY THICKNESST3.94.21. Maximum alignment deviation betw leads will not to be greater than 0.2PITCH OF COMPONENTP12.7± 1.02. Maximum non-cumulative variation between tape feed holes shall not exceed 1 mm in 20 pitches.*1 FEED HOLE CENTRE TO COMPONENT CENTREP26.35± 0.43. Holddown tape will not exceed beyo the edge(s) of carrier tape and there shall be no exposure of adhesive.DISTANCE BETWEEN OUTER LEADSF5.08+ 0.6 - 0.23. Holddown tape will not exceed beyo the edge(s) of carrier tape and there shall be no exposure of adhesive.*3 COMPONENT ALIGNMENT SIDE VIEW *4 COMPONENT ALIGNMENT FRONT VIEW TAPE WIDTH Δh 01.0W18± 0.5 ± 0.25. A tape trailer, having at least three f holes are provided after the last component in a tape.HOLD-DOWN TAPE POSITIONW20.5± 0.26. Splices should not interfere with the sprecket ford holes			TOL .	MAX.	NOM.	MIN.	SYMBOL	ITEM
BODY THICKNESST3.94.2PITCH OF COMPONENTP12.7± 1.0*1 FEED HOLE PITCHPo12.7± 0.3*2 FEED HOLE CENTRE TO COMPONENT CENTREP26.35± 0.4DISTANCE BETWEEN OUTER LEADSP5.08- 0.2*3 COMPONENT ALIGNMENT SIDE VIEW TAPE WIDTH△h01.0*4 COMPONENT ALIGNMENT FRONT VIEW HOLD-DOWN TAPE WIDTH△h01.3HOLD-DOWN TAPE POSITIONW20.5± 0.26. Splices should not interfere with the component in a tape.		NOTES		4.8		4.0	A1	BODY WIDTH
PITCH OF COMPONENTP12.7± 1.02. Maximum non-cumulative variation between tape feed holes shall not exceed 1 mm in 20 pitches.*1 FEED HOLE CENTRE TO COMPONENT CENTREP26.35± 0.43. Holddown tape will not exceed beyo the edge(s) of carrier tape and there shall be no exposure of adhesive.*3 COMPONENT ALIGNMENT SIDE VIEW *4 COMPONENT ALIGNMENT FRONT VIEW TAPE WIDTH Δh 01.04. There will be no more than three (3) consecutive missing components in tape.HOLD-DOWN TAPE POSITIONW20.5± 0.25. A tape trailer, having at least three f holes are provided after the last component in a tape.	n between	1. Maximum alignment deviation be				4.8	А	BODY HEIGHT
*1 FEED HOLE PITCHPo12.7 \pm 0.3 \pm 0.4 \pm 0.3 \pm 0.4 \pm 0.5 \pm 0.2 \pm 0.5 <td>an 0.2mm.</td> <td>leads will not to be greater than 0</td> <td></td> <td>4.2</td> <td></td> <td>3.9</td> <td>Т</td> <td></td>	an 0.2mm.	leads will not to be greater than 0		4.2		3.9	Т	
**2 FEED HOLE CENTRE TO COMPONENT CENTRE P2 6.35 ± 0.4 acceed 1 mm in 20 pitches. DISTANCE BETWEEN OUTER LEADS F 5.08 ± 0.4 acceed 1 mm in 20 pitches. *3 COMPONENT ALIGNMENT SIDE VIEW *4 COMPONENT ALIGNMENT FRONT VIEW TAPE WIDTH △h 0 1.0 4. There will be no more than three (3) consecutive missing components in tape. HOLD-DOWN TAPE WIDTH HOLE POSITION W1 9 ± 0.5 5. A tape trailer, having at least three for holes are provided after the last component in a tape. HOLD-DOWN TAPE POSITION W2 0.5 ± 0.2 6. Splices should not interfere with the sprocket food holes	riation	2. Maximum non-cumulative variation	± 1.0					
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DISTANCE BETWEEN OUTER F 5.08 ± 0.4 3. Holddown tape will not exceed beyon the edge(s) of carrier tape and there shall be no exposure of adhesive. *3 COMPONENT ALIGNMENT SIDE VIEW △h 0 1.0 4. There will be no more than three (3) consecutive missing components in tape. *4 COMPONENT ALIGNMENT FRONT VIEW △h1 0 1.3 4. There will be no more than three (3) consecutive missing components in tape. HOLD-DOWN TAPE WIDTH W 18 ± 0.5 5. A tape trailer, having at least three for holes are provided after the last component in a tape. HOLD-DOWN TAPE POSITION W2 0.5 ± 0.2 6. Splices should not interfere with the spreached below.					6.05			⁴ FEED HOLE CENTRE TO
LEADS F 5.08 +0.0 shall be no exposure of adhesive. *3 COMPONENT ALIGNMENT SIDE VIEW △h 0 1.0 4. There will be no more than three (3) *4 COMPONENT ALIGNMENT FRONT VIEW △h1 0 1.3 -0.2 5.08 TAPE WIDTH W 18 ± 0.5 -0.2 5. A tape trailer, having at least three for holes are provided after the last component in a tape. HOLD-DOWN TAPE WIDTH W1 9 +0.7 -0.5 6. Splices should not interfere with the strong of the last component in a tape. HOLD-DOWN TAPE POSITION W2 0.5 ± 0.2 6. Splices should not interfere with the strong of the last component in a tape.			± 0.4		6.35		P2	
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*4 COMPONENT ALIGNMENT FRONT VIEW TAPE WIDTH $\Delta h1$ 01.3consecutive missing components in tape.HOLD-DOWN TAPE WIDTH HOLE POSITIONW06 ± 0.5 5. A tape trailer, having at least three f holes are provided after the last component in a tape.HOLD-DOWN TAPE POSITIONW20.5 ± 0.2 6. Splices should not interfere with the sprocket food holes		·	- 0.2	1.0				
TAPE WIDTHW18 ± 0.5 tape.HOLD-DOWN TAPE WIDTHWo6 ± 0.2 5. A tape trailer, having at least three f holes are provided after the last component in a tape.HOLD-DOWN TAPE POSITIONW19 ± 0.2 6. Splices should not interfere with the sprocket food holes					Ŭ		∆n ∧h1	*4 COMPONENT ALIGNMENT EDONT VIEW
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HOLD DOWN TAPE POSITIONW19+ 0.7 - 0.5holes are provided after the last component in a tape.HOLD-DOWN TAPE POSITIONW20.5± 0.26. Splices should not interfere with the sprocket food holes	three feed	5. A tape trailer, having at least thre						
HOLD-DOWN TAPE POSITIONW2 0.5 component in a tape.HOLD-DOWN TAPE POSITIONW2 0.5 ± 0.2 ϵ Splices should not interfere with the sprace to the loss.		holes are provided after the last	-		Ŭ			
THOED-DOWN TALE FOSTION W2 0.5 ± 0.2 sprocket food holes		component in a tape.						HOLE I CONTON
LEAD WIRE CLINCH HEIGHT Ho 16 ± 0.5 sprocket feed holes.	vith the		± 0.2		0.5		W2	HOLD-DOWN TAPE POSITION
		sprocket feed holes.	± 0.5		16		Ho	LEAD WIRE CLINCH HEIGHT
COMPONENT HEIGHT H1 23.25				23.25			H1	COMPONENT HEIGHT
LENGTH OF SNIPPED LEADS L 11.0				11.0			L	LENGTH OF SNIPPED LEADS
FEED HOLE DIAMETER Do 4 ± 0.2 REMARKS		REMARKS	± 0.2		4		Do	
*5 TOTAL TAPE THICKNESS t 1.2 *1 Cumulative pitch error 1.0 mm/20 p LEAD TO LEAD DISTANCE E1 E2 2.54 +.04 *1 Cumulative pitch error 1.0 mm/20 p	m/20 nitch	*1 Cumulative pitch error 1.0 mm/20		1.2				
			+ 0.4		2.54		F1, F2	LEAD - TO - LEAD DISTANCE
STAND OFF H2 0.45 1.45	ciincn		- 0.1	1.45		0.45	H2	STAND OFF
CLINCH HEIGHT H3 3.0 *3 At top of body				3.0			H3	CLINCH HEIGHT
LEAD PARALLELISM C1 - C2 0.22 *4 At top of body		*4 At top of body		0.22			C1 - C2	LEAD PARALLELISM
PULL - OUT FORCE (p) 6N *5 t1 0.3 - 0.6 mm		*5 t1 0.3 – 0.6 mm				6N	(p)	PULL - OUT FORCE

MPS6530 MPS6531

TO-92 Plastic Package

Disclaimer

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