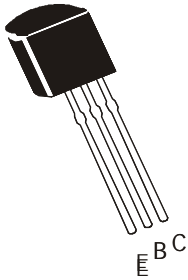


NPN EPITAXIAL PLANAR DARLINGTON TRANSISTORS

TMPSA 13
TMPSA 14
TO-92
CBE



ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector -Emitter Voltage	VCES	30	V
Collector -Base Voltage	VCBO	30	V
Emitter -Base Voltage	VEBO	10	V
Collector Current -Continuous	IC	500	mA
Power Dissipation @ Ta=25 degC	PD	625	mW
Derate above 25 deg C		5.0	mW./deg C
Power Dissipation @ Tc=25 degC	PD	1.5	W
Derate above 25 deg C		12	mW./deg C
Operating And Storage Junction Temperature Range	Tj, Tstg	-55 to +150	deg C

THERMAL RESISTANCE

Junction to Case	Rth(j-c)	83.3	deg C/W
Junction to Ambient	Rth(j-a)	200	deg C/W

ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)

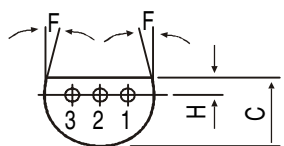
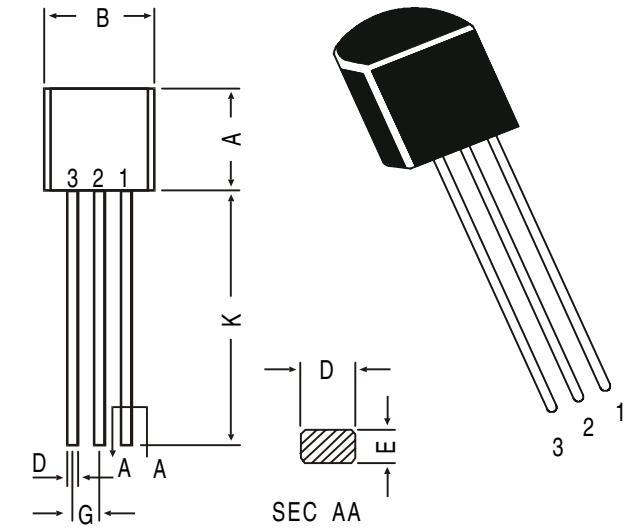
DESCRIPTION	SYMBOL	TEST CONDITION	Min	Max	UNIT
Collector -Emitter Voltage	VCES	IC=100uA, IB=0	30	-	V
Collector-Cut off Current	ICBO	VCB=30V, IE=0	-	100	nA
Emitter-Cut off Current	IEBO	VEB=10V, IC=0	-	100	nA
DC Current Gain	hFE*				
	TMPSA13	IC=10mA, VCE=5V	5.0	-	K
	TMPSA14		10	-	K
	TMPSA13	IC=100mA, VCE=5V	10	-	K
	TMPSA14		20	-	K
Collector Emitter Saturation Voltage	VCE(Sat)*	IC=100mA, IB=0.1mA	-	1.5	V
Base Emitter On Voltage	VBE(on) *	IC=100mA, VCE=5V	-	2.0	V
Current Gain-Bandwidth Product	ft**	IC=10mA, VCE=5V	125	-	MHz
		f=100MHz			

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

**ft=/hfe/*ftest.

TO-92 Plastic Package

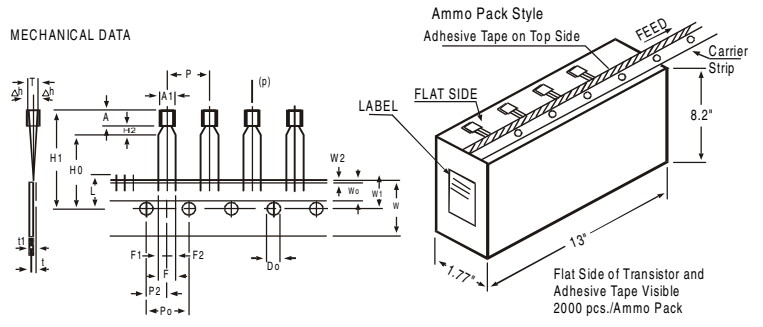
TO-92 Transistors on Tape and Ammo Pack



- PIN CONFIGURATION**
1. COLLECTOR
 2. BASE
 3. EMITTER

All dimensions in mm.

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	—



All dimensions in mm unless specified otherwise

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	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE PITCH	P ₀		12.7		±0.3	
FEED HOLE CENTRE TO COMPONENT CENTRE	P ₂		6.35		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F	5.08			+0.6 -0.2	AT TOP OF BODY
COMPONENT ALIGNMENT	Δh	0		1		
TAPE WIDTH	W	18			±0.5	
HOLD-DOWN TAPE WIDTH	W ₀	6			±0.2	
HOLE POSITION	W ₁	9			+0.7 -0.5	
HOLD-DOWN TAPE POSITION	W ₂	0.5			±0.2	
LEAD WIRE CLINCH HEIGHT	H ₀	16			±0.5	
COMPONENT HEIGHT	H ₁			23.25		
LENGTH OF SNIPPED LEADS	L			11.0		
FEED HOLE DIAMETER	D ₀		4		±0.2	
TOTAL TAPE THICKNESS	t			1.2		±0.3 - 0.6
LEAD - TO - LEAD DISTANCE F ₁	F ₂		2.54		+0.4 -0.1	
CLINCH HEIGHT	H ₂			3		
PULL - OUT FORCE	(P)	6N				

NOTES

1. MAXIMUM ALIGNMENT DEVIATION BETWEEN LEADS NOT TO BE GREATER THAN 0.2 mm.
2. MAXIMUM NON-CUMULATIVE VARIATION BETWEEN TAPE FEED HOLES SHALL NOT EXCEED 1 mm IN 20 PITCHES.
3. HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO EXPOSURE OF ADHESIVE.
4. NO MORE THAN 3 CONSECUTIVE MISSING COMPONENTS ARE PERMITTED.
5. A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT.
6. SPLICES SHALL 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"	5.0K	17" x 15" x 13.5"	80.0K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2.0K	17" x 15" x 13.5"	32.0K	12.5 kgs

Customer Notes

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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