



Continental Device India Limited

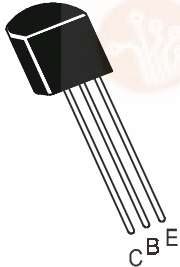
An IS/ISO 9002 and IECQ Certified Manufacturer



IS/ISO 9002
Lic# QSC/L- 000019.2

NPN SILICON PLANAR EPITAXIAL TRANSISTORS

CIL 187



**TO-92
Plastic Package**

Intended For Low Voltage , High Current Output Pair Application

Complementary CIL 188

ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	VALUE			UNIT
		MIN	TYP	MAX	
Collector Emitter Voltage ($V_{BE} = 0$)	V_{CES}		25		V
Collector Emitter Voltage (Open Base)	V_{CEO}		15		V
Emitter Base Voltage (Open Collector)	V_{EBO}		5		V
Collector Current	I_C		700		mA
Collector Current (Peak Value)	I_{CM}		1		A
Base Current	I_B		100		mA
Base Current (Peak Value)	I_{BM}		200		mA
Total Power Dissipation @ Ta=25°C	P_{TA}		625		mW
Operating And Storage Junction Temperature Range	T_j, T_{stg}		-55 to +150		°C

ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
Collector Cut off Current	I_{CBO}	$V_{CB}=25V, I_E = 0$			10	μA
					1	mA
Emitter Cut off Current	I_{EBO}	$V_{EB}=5V, I_C = 0$			10	μA
Base Cut on Voltage	$V_{BE(on)}$	$I_C = 1A, V_{CE} = 1V$			1	V
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1A, I_B = 100mA$			0.5	V
DC Current Gain	h_{FE}	$V_{CE} = 10V, I_C = 5mA$	50			
			100		300	
			40			

DYNAMIC CHARACTERISTICS

Transition Frequency	f_T	$I_C = 10mA, V_{CE} = 2V$	270	MHz
Collector Capacitance	C_c	$I_E = 0, V_{CB} = 5V,$	10	pF
		$f = 1MHz$	30	pF

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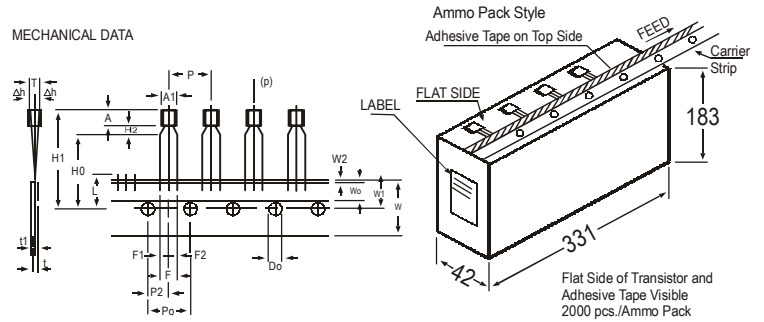
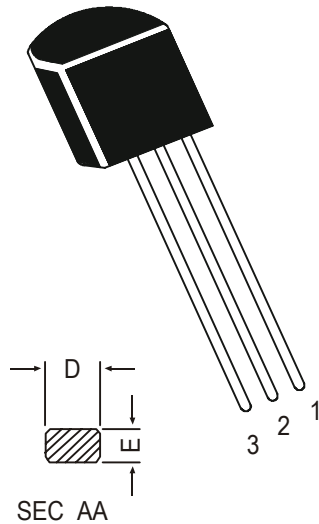
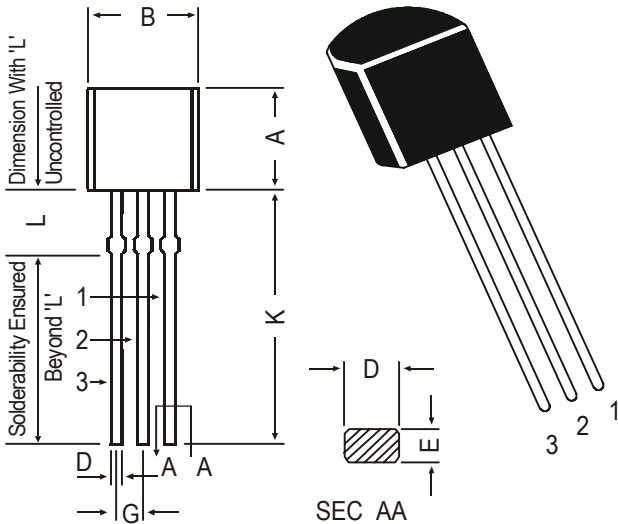


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TO-92 Transistors on Tape and Ammo Pack



All dimensions in mm unless specified otherwise

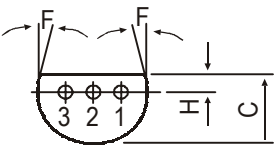
ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		
BODY HEIGHT	A	4.8		5.2		
BODY THICKNESS	T	3.9		4.2		
PITCH OF COMPONENT	P		12.7		±1	
FEED HOLE PITCH	Po		12.7		±0.3	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6	AT TOP OF BODY
COMPONENT ALIGNMENT	Δh		0	1	-0.2	
TAPE WIDTH	W		18		±0.5	
HOLD-DOWN TAPE WIDTH	W0		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	t1 0.3 - 0.6
TOTAL TAPE THICKNESS	t			1.2		
LEAD - TO - LEAD DISTANCE F1,	F2		2.54		+0.4	
					-0.1	
CLINCH HEIGHT	H2			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.

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

1. EMITTER
2. BASE
3. COLLECTOR

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

Notes

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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 in the Data Sheet and on the CDIL Web Site/CD is 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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