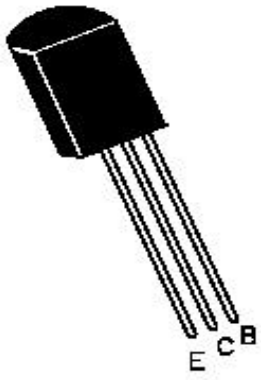
Continental Device India Limited
An ISO/TS 16949, ISO 9001 and ISO 14001 Certified Company

EPITAXIAL PLANAR SILICON TRANSISTORS

CSB764 PNP
CSD863 NPN

TO-92L
Plastic Package



Voltage Regulator, Relay Lamp Driver Electrical Equipment Applications

ABSOLUTE MAXIMUM RATINGS (T_a=25ºC)

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Base Voltage	V_{CBO}	60	V
Collector Emitter Voltage	V_{CEO}	50	V
Emitter Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	1.0	A
Peak Collector Current	I_{CP}	2.0	A
Collector Power Dissipation	P_C	0.9	W
Junction Temperature	T_j	150	ºC
Storage Temperature	T_{stg}	- 55 to +150	ºC

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Base Voltage	V_{CBO}	I_C=10µA, I_E=0	60			V
Collector Emitter Voltage	V_{CEO}	I_C=1mA, I_B=0	50			V
Emitter Base Voltage	V_{EBO}	I_E=10µA, I_C=0	5.0			V
Collector Cut Off Current	I_{CBO}	V_{CB}=50V, I_E=0			1.0	µA
Emitter Cut Off Current	I_{EBO}	V_{EB}=4V, I_C=0			1.0	µA
DC Current Gain	*h_{FE}	I_C=50mA, V_{CE}=2V	60		320	
	h_{FE}	I_C=1A, V_{CE}=2V	30			
Collector Emitter Saturation Voltage	$V_{CE\ (sat)}$	I_C=500mA, I_B=50mA **NPN** **PNP**			 0.5 0.7	 V V
Base Emitter Saturation Voltage	$V_{BE\ (sat)}$	I_C=500mA, I_B=50mA			1.2	V

DYNAMIC CHARACTERISTICS

Transition Frequency	f_T	V_{CE}=10V, I_C=50mA	TYP150	MHz
Output Capacitance	C_{ob}	V_{CB}=10V,I_E=0, f=1MHz **NPN** **PNP**	 TYP12 TYP20	 pF pF

CLASSIFICATION	D	E	F
*h_{FE}	60 - 120	100 - 200	160 - 320

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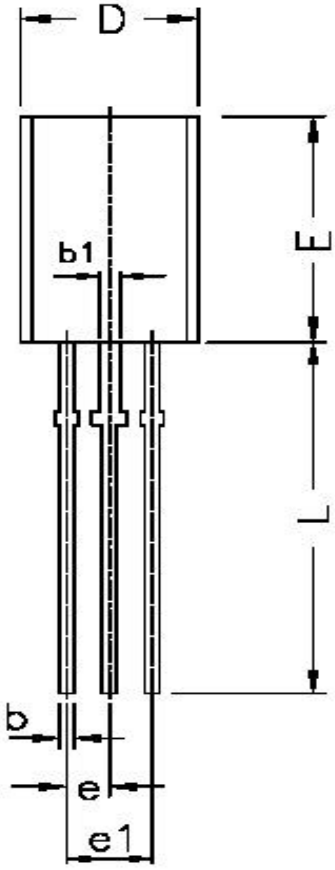
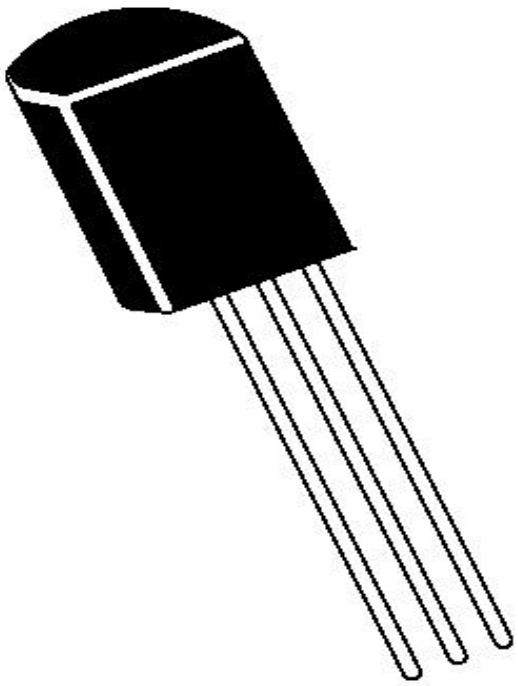
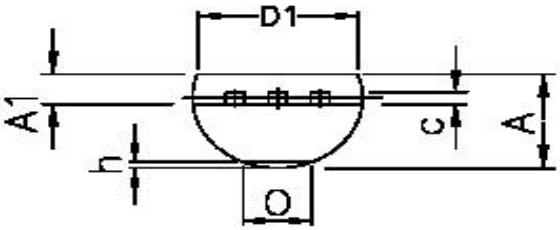
PACKAGE TO-92L







DIM	MIN	MAX
A	3.700	4.100
A1	1.280	1.580
b	0.350	0.550
b1	0.600	0.800
c	0.350	0.450
D	4.700	5.100
D1	4.000	—
E	7.800	8.200
e	1.270 TYP.	
e1	2.440	2.640
L	13.600	14.200
O	—	1.600
h	0.000	0.300

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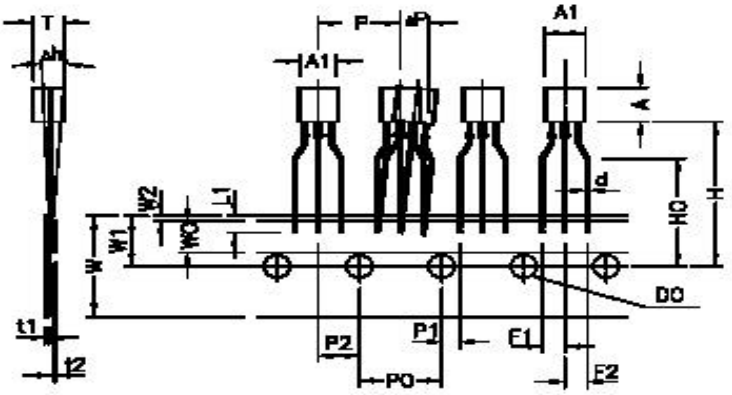
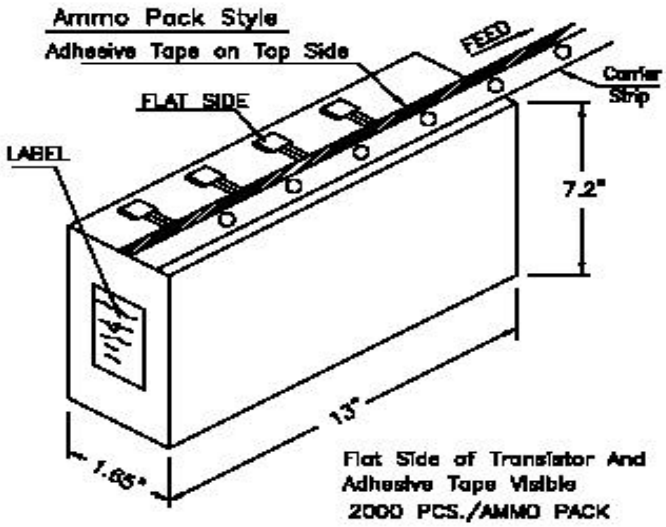
TO−92L TRANSISTOR ON TAPE AND AMMO PACK





ITEM	SYMBOL	VALUE & TOLERANCE
BODY WIDTH	A1	4.9 ±0.2
BODY HEIGHT	A	8.0 ±0.2
BODY THICKNESS	T	3.9 ±0.2
LEAD WIRE DIAMETER	d	0.45 ±0.05
PITCH OF COMPONENT	P	12.7 ±0.3
FEED HOLE PITCH	P0	12.7 ±0.2
HOLE CENTER TO COMPONENT CENTER	P2	6.35 ±0.3
LEAD TO LEAD DISTANCE	F1,F2	2.5 ±0.3
COMPONENT ALIGNMENT,F−R	Δh	0 ±1.0
TYPE WIDTH	W	18.0 +1.0,−0.5
HOLE DOWN TAPE WIDTH	W0	6.0 ±0.5
HOLE POSITION	W1	9.0 ±0.5
HOLE DOWN TAPE POSITION	W2	1.0 MAX.
HEIGHT OF COMPONENT FROM TAPE CENTER	H	19.0 +2.0,−0
LEAD WIRE CLINCH HEIGHT	H0	16.0 ±0.5
LEAD WIRE (TAPE PORTION)	L1	2.5 MIN
FEED HOLE DIAMETER	D0	4.0 ±0.2
TAPED LEAD THICKNESS	t1	0.4 ±0.05
CARRIER TAPE THICKNESS	t2	0.2 ±0.05
POSITION OF HOLE	P1	3.85 ±0.3
COMPONENT ALIGNMENT	ΔP	0 ±1.0

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 IS PERMITTED.
5. A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES IS REQUIRED AFTER THE LAST COMPONENT.
6. SPLICES SHALL NOT INTERFERE WITH THE SPROCKET FEED HOLES.

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.

2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Disclaimer

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