

FEATURE

Absolute Maximum Ratings at Ta = 25°C

- BUILT-IN LED DRIVER'S IC CHIP. OPERATING TEMPERATURE RANGE..... -25°C TO + 60°C
- EXCELLENT CHARACTER APPEARANCE. STORAGE TEMPERATURE RANGE..... -25°C TO + 60°C
- HIGH LIGHT OUTPUT. LEAD SOLDERING TEMPERATURE (1.6mm FROM SEATING PLANE)
- RELIABLE AND RUGGED. 260°C FOR 5 SEC.

Electrical/Optical Characteristics at TA=25°C & IF=20mA

CHIP COLOR	0.3" FOUR DIGIT	0.56" THREE DIGIT	0.54" ALPHANUMERIC DUAL DIGIT	λ_p (nm) @IB=0.4mA	IV (mcd) @IB=0.4mA	
				TYP.	MIN.	TYP.
GREEN	LI3024-11TEWRN	LI5623-11EWRN	LI5422-11EWRN	572	1.2	2.9
YELLOW	LI3034-11TEWRN	LI5633-11EWRN	LI5432-11EWRN	589	0.9	2.3
ORANGE	LI3044-11TEWRN	LI5643-11EWRN	LI5442-11EWRN	630	1.3	3.3
ORANGE	LI3044R-11TRRRN	LI5643R-11RRRN	LI5442R-11RRRN	630	1.3	3.3
RED	LI3074-11T-M1EWRN	LI5673-11-M1EWRN	LI5472-11-M1EWRN	660	7.7	12.9
RED	LI3054-11TEWRN	LI5653-11EWRN	LI5452-11EWRN	700	0.3	0.8

Electrical/Optical Characteristics at TA=25°C & IF=20mA

PARAMETER	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
SUPPLY VOLTAGE (VDD)		4.75		5.25	V
SUPPLY CURRENT	EXCLUDING OUTPUT LOADS			5.25	mA
INPUT CLOCK FREQUENCY				500	KHz
INPUT VOLTAGE LOGICAL "0" LEVEL LOGICAL "1" LEVEL	$\pm 10\mu A$ INPUT BIAS $4.75V \leq VDD \leq 5.25V$ $VDD > 5.25V$	-0.3 2.2 VDD-2		0.8 VDD VDD	V V V
OUTPUT SINK CURRENT SEGMENT OFF SEGMENT ON	BRIGHTNESS INPUT (IB) = 0 μA BRIGHTNESS INPUT (IB) = 180 μA BRIGHTNESS INPUT (IB) = 240 μA	0	6.0 10.0	10.0	μA mA mA

FUNCTIONAL DESCRIPTION

- THE BLOCK DIAGRAM IS SHOW IN FIGURE 1. BRIGHTNESS OF DISPLAYS ARE DETERMINED BY THE OUTPUT SINK CURRENT. TO PREVENT OSCILLATIONS, A 1nF CAPACITOR SHOULD BE CONNECTED TO THE PIN OF BRIGHTNESS CONTROL.
- FIGURE 2 SHOWS THE INPUT DATA FORMAT.
- FIGURE 3 SHOWS THE TIMING RELATIONSHIPS BETWEEN DATA, CLOCK AND DATA ENABLE.

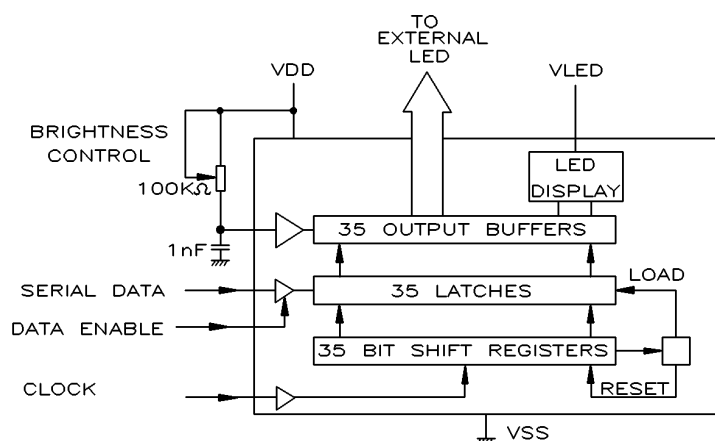


FIGURE 1. Internal Block Diagram

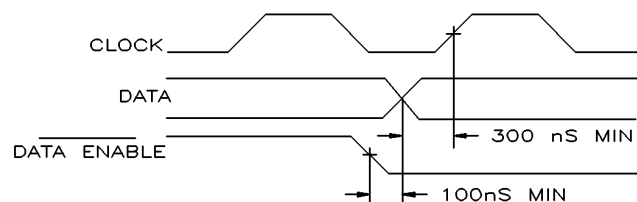


FIGURE 2. Input Data Format

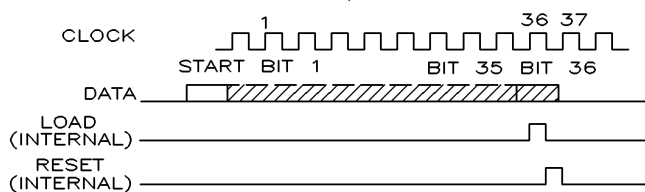


FIGURE 3. Timing Relationship

SERIAL DATA INPUT SEQUENCE

LI30X4-11T			
BIT NO.	DIGIT/ SEGMENT	BIT NO.	DIGIT/ SEGMENT
1	1/A	18	3/B
2	1/B	19	3/C
3	1/C	20	3/D
4	1/D	21	3/E
5	1/E	22	3/F
6	1/F	23	3/G
7	1/G	24	3/DP
8	1/DP	25	4/A
9	2/A	26	4/B
10	2/B	27	4/C
11	2/C	28	4/D
12	2/D	29	4/E
13	2/E	30	4/F
14	2/F	31	4/G
15	2/G	32	4/DP
16	2/DP	33	PIN 1
17	3/A	34	PIN 2

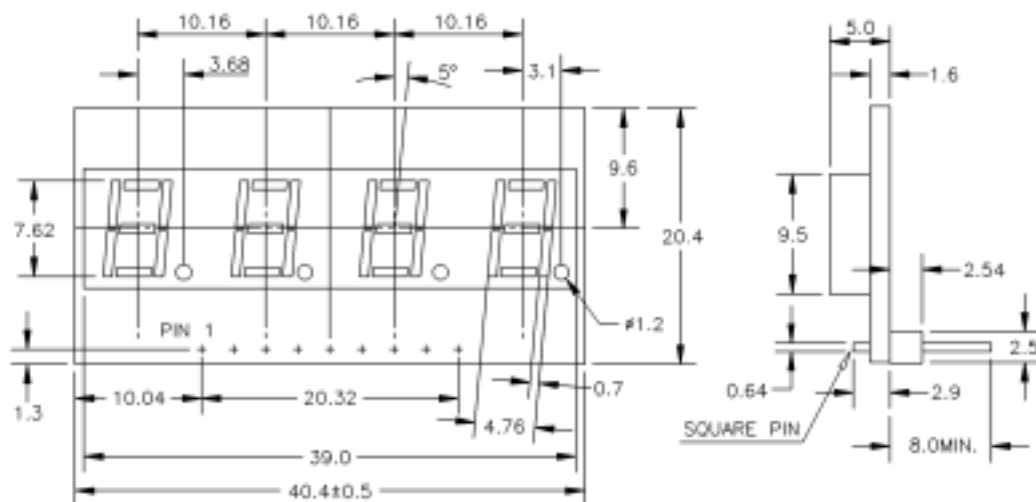
LI56X3-11			
BIT NO.	DIGIT/ SEGMENT	BIT NO.	DIGIT/ SEGMENT
1	1/A	18	3/B
2	1/B	19	3/C
3	1/C	20	3/D
4	1/D	21	3/E
5	1/E	22	3/F
6	1/F	23	3/G
7	1/G	24	3/DP
8	1/DP	25	PIN 4
9	2/A	26	PIN 5
10	2/B	27	PIN 6
11	2/C	28	PIN 7
12	2/D	29	PIN 8
13	2/E	30	PIN 9
14	2/F	31	PIN 10
15	2/G	32	PIN 11
16	2/DP	33	PIN 12
17	3/A	34	PIN 13

LI54X2-11			
BIT NO.	DIGIT/ SEGMENT	BIT NO.	DIGIT/ SEGMENT
1	2/A	18	1/D
2	2/B	19	1/E
3	2/C	20	1/F
4	2/D	21	1/G1
5	2/E	22	1/G2
6	2/F	23	1/H
7	2/G1	24	1/I
8	2/G2	25	1/J
9	2/H	26	1/K
10	2/I	27	1/L
11	2/J	28	1/M
12	2/K	29	1/DP
13	2/L	30	2/DP
14	2/M	31	PIN 17
15	1/A	32	PIN 1
16	1/B	33	PIN 2
17	1/C	34	PIN 3

INTELLIGENT DISPLAY

PACKAGE DIMENSIONS

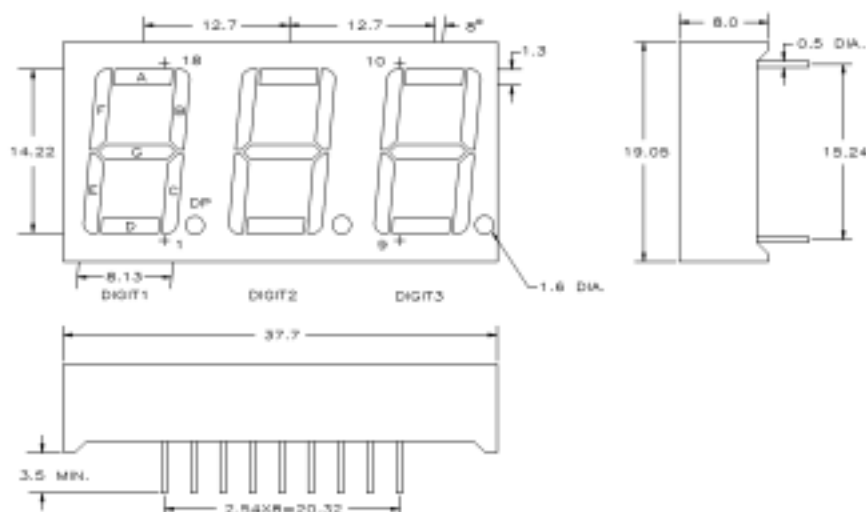
LI30X4-11T



LI3074-11T
PIN NO. FUNCTION

1. EXT LED 1
2. EXT LED 2
3. DATA ENABLE
4. DATA INPUT
5. CLOCK INPUT
6. VDD
7. BRT. CONTROL
8. VSS
9. VLED

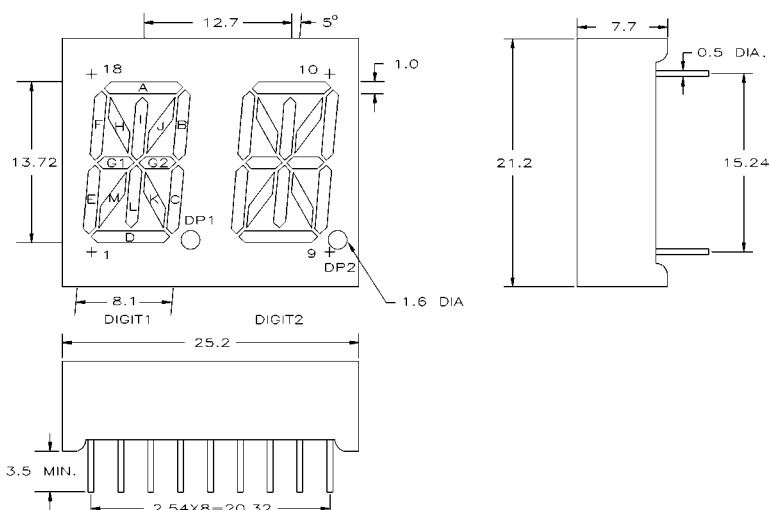
LI56X3-11



LI56X3-11
PIN NO. FUNCTION

1. VSS
2. VLED
3. VLED
4. BIT 25 OUTPUT
5. BIT 26 OUTPUT
6. BIT 27 OUTPUT
7. BIT 28 OUTPUT
8. BIT 29 OUTPUT
9. BIT 30 OUTPUT
10. BIT 31 OUTPUT
11. BIT 32 OUTPUT
12. BIT 33 OUTPUT
13. BIT 34 OUTPUT
14. DATA ENABLE
15. DATA INPUT
16. CLOCK INPUT
17. VDD
18. BRT. CONTROL

LI54X2-11



LI54X2-11
PIN NO. FUNCTION

1. BIT 32 OUTPUT
2. BIT 33 OUTPUT
3. BIT 34 OUTPUT
4. DATA INPUT
5. CLOCK INPUT
6. DATA ENABLE
7. VDD
8. VLED
9. BRT. CONTROL
10. NO PIN
11. NO PIN
12. NO PIN
13. VSS
14. VSS
15. NO PIN
16. NO PIN
17. BIT 31 OUTPUT
18. NO PIN

NOTES : 1.ALL DIMENSIONS ARE IN mm, TOLERANCE IS $\pm 0.25\text{mm}$ UNLESS OTHERWISE NOTED.
2.THE SLOPE ANGLE OF ANY PIN MAY BE $\pm 5.0^\circ$ MAX.