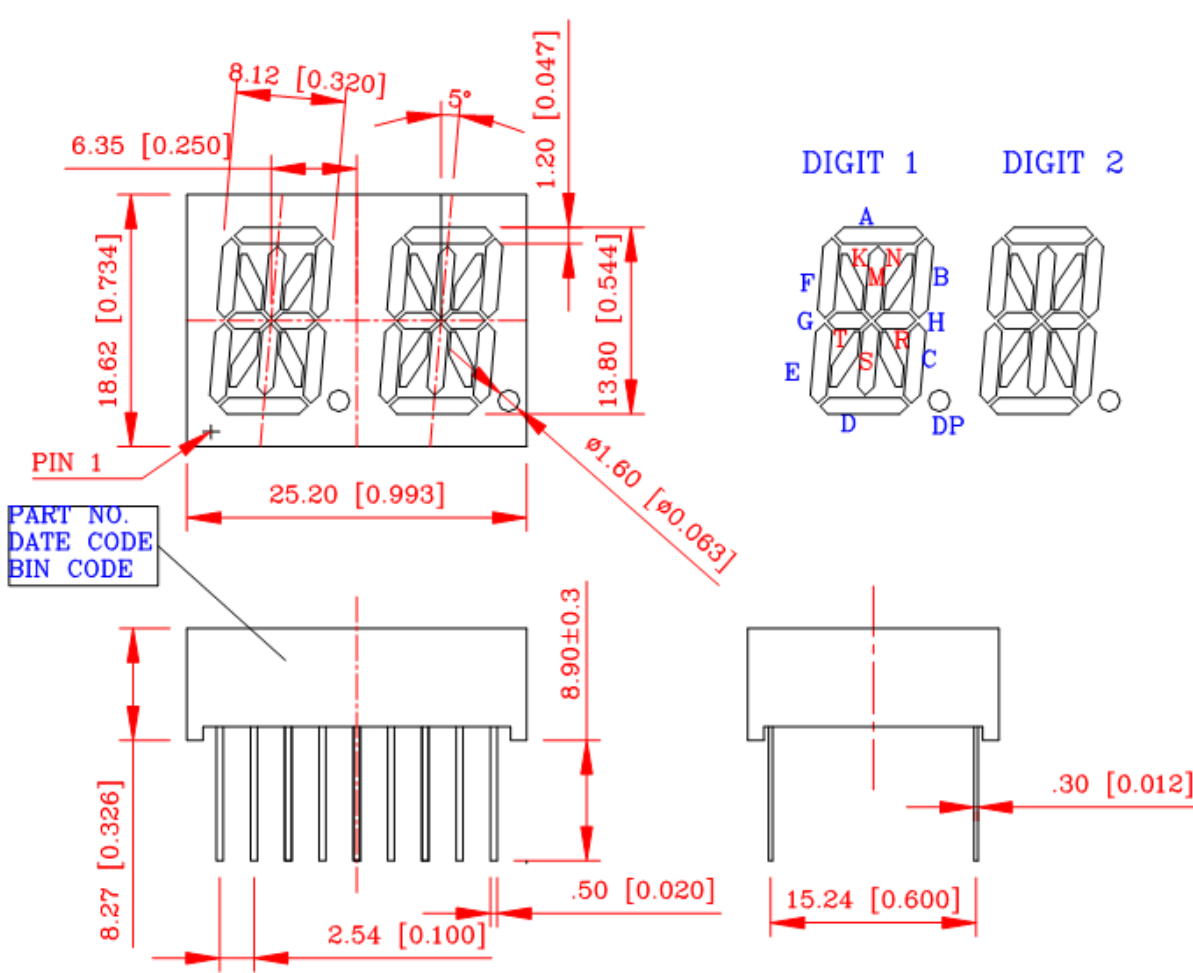


**SPECIFICATIONS** **CDDAN54GT2W-CEE**

### OUTLINES DIMENSIONS



The drawing shows the following dimensions:

- Top view: Total width 25.20 [0.993], total height 18.62 [0.734]. Individual segment width 8.12 [0.320], segment height 6.35 [0.250]. A 5° angle is shown at the top edge. A 1.20 [0.047] offset is shown from the top edge to the start of the segments. A 13.80 [0.544] height is shown from the bottom of the segments to the top of the package. A diameter of  $\phi 1.60$  [0.063] is shown for the mounting holes.
- Side view: Total height 8.90 ± 0.3, total width 15.24 [0.600]. A .50 [0.020] thickness is shown for the base. A .30 [0.012] offset is shown from the centerline to the edge of the base.
- Detail view: Shows the internal structure with labels A, B, C, D, E, F, G, H, K, M, N, R, S, T, and DP.

**PIN 1** is indicated at the bottom left corner.

A box labeled **PART NO.**, **DATE CODE**, and **BIN CODE** is shown pointing to the bottom left corner of the package.

**Notes:**

1. All Dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm}$  (0.01") unless otherwise noted.
3. Specifications are subject to change without notice.

Part Number	Chip Material	Color of Emission	Lens Type	Description
CDDAN54GT2W-CEE	InGaN	Green	White Segment	Common Anode



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**ABSOLUTE MAXIMUM RATINGS**
**(TA=25°C)**

Parameter	Symbol	Max Rating	Unit
Power Dissipation	P <sub>D</sub>	355	mW
Input Voltage	V <sub>I</sub>	12	V
Supply Voltage	V <sub>DD</sub>	12	V
Supply Current	I <sub>DD</sub>	8.5	mA
Operating Temperature Range	T <sub>OPR</sub>	-20~+60	°C
Storage Temperature Range	T <sub>STG</sub>	-20~+60	°C
Soldering Condition: 260 °C/ 3sec			

**OPTICAL-ELECTRICAL CHARACTERISTICS**
**(TA=25°C)**

Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
Luminous Intensity	I <sub>V</sub>	I <sub>B</sub> = 0.4mA	3.4	8.5	-	mcd
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> = 5V	-	-	10	μA
Dominant Wavelength	λ <sub>D</sub>	I <sub>F</sub> = 20mA	-	525	-	nm
Spectral Radiation Bandwidth	Δλ	I <sub>B</sub> = 0.4mA	-	30	-	nm



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**ELECTRICAL CONNECTION**

PIN CONNECTION			
PIN	CONNECTION	PIN	CONNECTION
1	BIT 32 OUTPUT	10	NO PIN
2	BIT 33 OUTPUT	11	NO PIN
3	BIT 34 OUTPUT	12	NO PIN
4	DATA INPUT	13	V <sub>SS</sub> *1
5	CLOCK INPUT	14	V <sub>SS</sub> *1
6	DATA ENABLE	15	NO PIN
7	V <sub>DD</sub>	16	NO PIN
8	V <sub>LED</sub>	17	BIT 31 OUTPUT
9	BrT CONTROL	18	NO PIN

**TABLE 1 SERIAL DATA INPUT SEQUENCE**

BIT	DIGIT	SEGMENT	BIT	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	G
5	2	E	22	1	H
6	2	F	23	1	K
7	2	G	24	1	M
8	2	H	25	1	N
9	2	K	26	1	R
10	2	M	27	1	S
11	2	N	28	1	T
12	2	R	29	1	DP
13	2	S	30	2	DP
14	2	T	31		PIN 17
15	1	A	32		PIN 1
16	1	B	33		PIN 2
17	1	C	34		PIN 3



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**RECOMMENDED OPERATION CONDITIONS**
**(TA=25°C)**

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITION
Supply Voltage	$V_{DD}$	4.75		11	V	V
Input Voltage	$V_I$					
Logical "0" Level		-0.3		0.8	V	A10 $\mu$ A Input Bias
Logical "1" Level		2.2		$V_{DD}$	V	4.75< $V_{DD}$ <5.25V
Logical "2" Level		$\frac{V_{DD}-2}{2}$		$V_{DD}$	V	$V_{DD}$ >5.25V
Brightness Input Current	$I_B$	0		0.75	mA	
Brightness Input Voltage	$V_B$	3		4.3	V	Input Current=750 $\mu$ A
Off State Voltage	$V_{o(off)}$			11	V	
Output Sink Current						
Segment Off				10	$\mu$ A	$I_B=0\mu$ A
Segment On			3		mA	$I_B=100\mu$ A
			6		mA	$I_B=200\mu$ A
Input Clock Frequency	$F_{CLOCK}$	0		0.5	MHZ	
Output Matching	$I_o$			A20	%	



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## ELECTRICAL DIAGRAM

### Internal Block Diagram

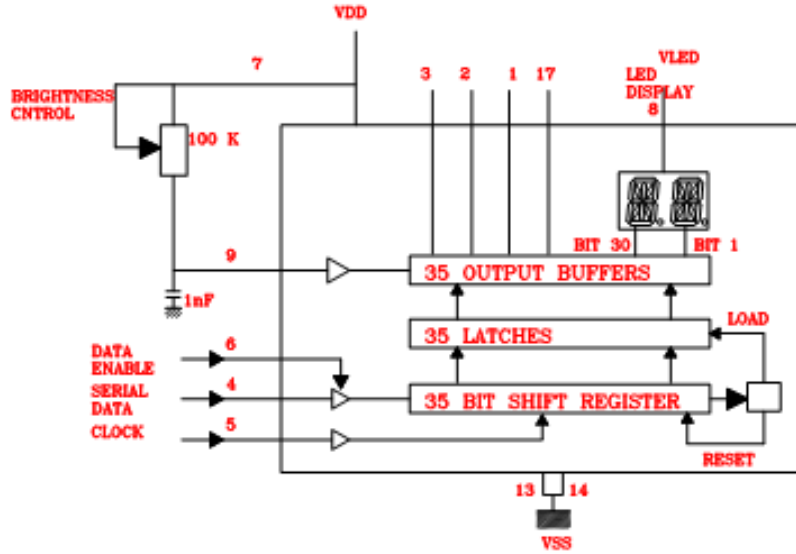


Figure 2

### Input Data Format

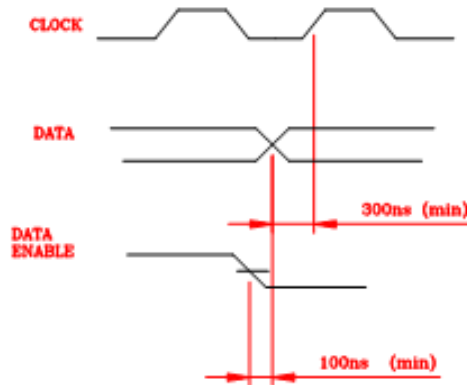


Figure 3

### Timing Relationship

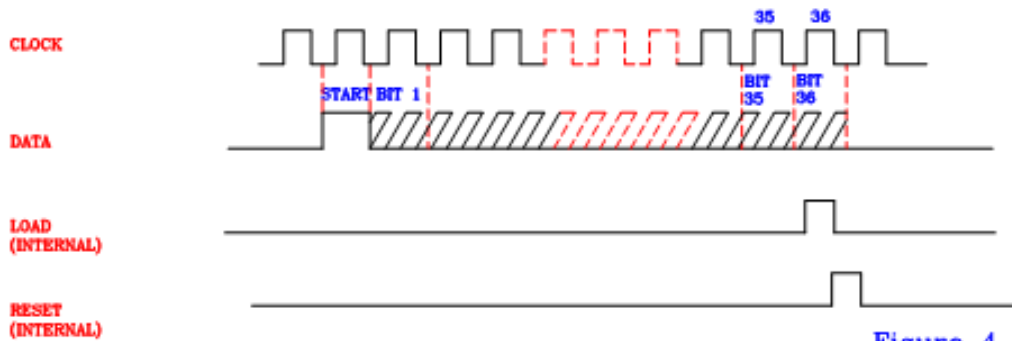


Figure 4

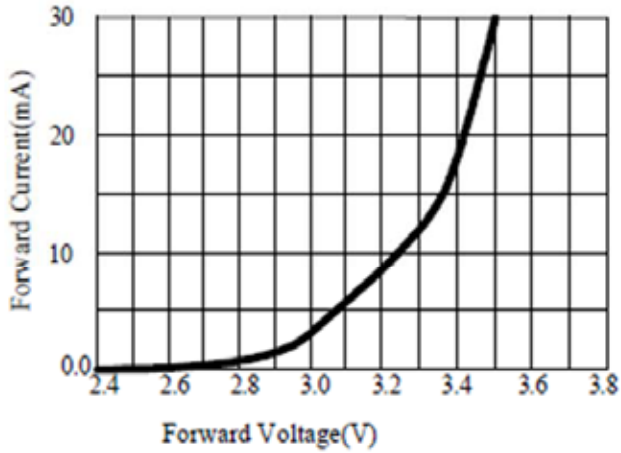


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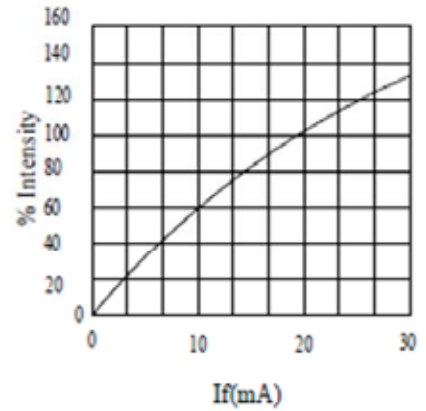


## OPTICAL CHARACTERISTICS CURVES

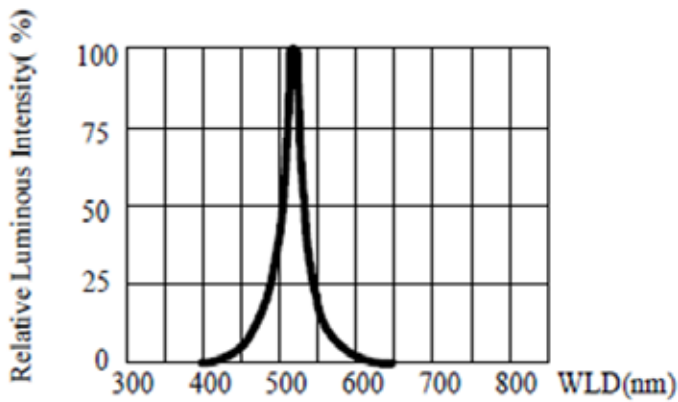
(TA=25°C)



Forward Current Vs. Forward Voltage



Relative Intensity vs. Forward Current



Relative Luminous Intensity Vs. Wavelength



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