



## Technical Data Sheet

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### Features

- High reliability
- Low power consumption
- Excellent characters appearance
- Evenly lighted segments
- Wide viewing angle
- Easy mounting on PCB or sockets
- I.C. compatible
- RoHS compliant

### Descriptions

- The YDQ-C39RBWK is a 9.90mm (0.39inch) digit height seven-segment LED display.
- The display provides excellent reliability in bright ambient light.
- The device is as either common anode or common cathode.
- The device is made with white diffused segments and black surface.

### Applications

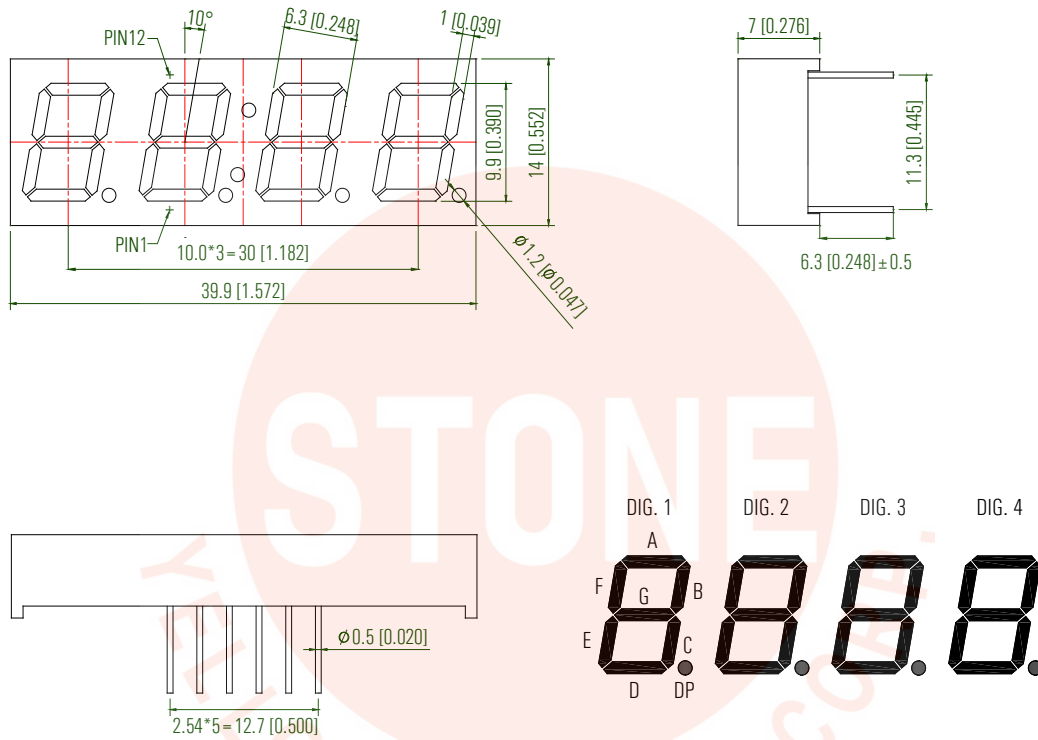
- Home and smart appliances
- Instrument panels
- Display time and digital combination
- Test and measurement equipment
- Control units

### Device Selection Guide

Part No.	Emitting Color	Circuit Common
YDQ-C39RBWK	Red	Common Cathode

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## Package Dimension



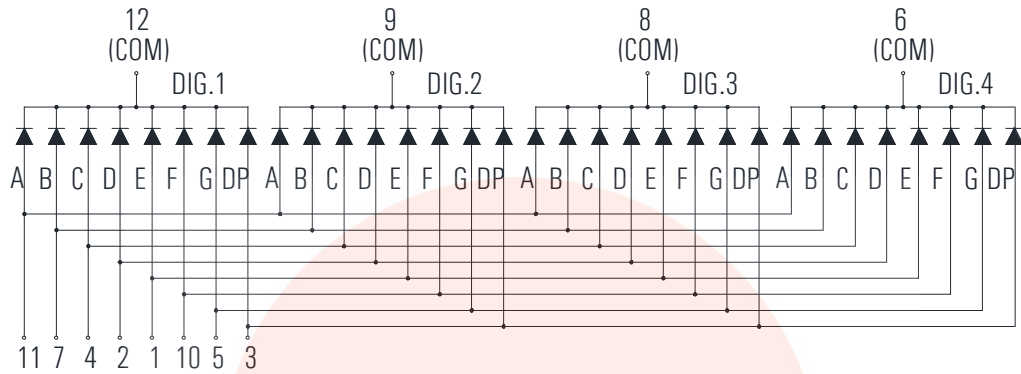
### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25$  mm (.010") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

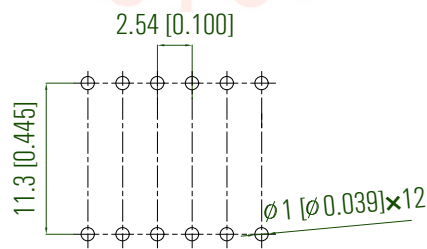


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### Internal Circuit Diagram:



### Recommended PCB Layout:



## Absolute Maximum Ratings at Ta=25°C

Parameters	Symbol	Max	Unit
Power Dissipation Per chip	$P_d$	48	mW
Peak Forward Current Per segment (1/10 Duty Cycle, 0.1ms pulse width)	$I_{FP}$	40	mA
Forward Current Per segment	$I_F$	20	mA
Reverse Voltage Per chip	$V_R$	5	V
Operating Temperature Range	$T_{opr}$	-40°C to +80°C	
Storage Temperature Range	$T_{stg}$	-40°C to +85°C	
Soldering Temperature	$T_{sld}$	260°C for 5 Seconds	

## Electrical Optical Characteristics at Ta=25°C

Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	$I_v$	1.0	2.0	---	mcd	IF=5mA (Note a)
		2.0	4.0	---	mcd	IF=10mA (Note a)
Luminous Intensity Matching Ratio	$I_{v-m}$	---	---	2:1		IF=20mA
Peak Emission Wavelength	$\lambda_p$	---	660	---	nm	IF=20mA
Dominant Wavelength	$\lambda_d$	---	640	---	nm	IF=20mA (Note b)
Spectral Line Half-Width	$\Delta\lambda$	---	20	---	nm	IF=20mA
Forward Voltage Per segment	$V_F$	---	2.0	2.4	V	IF=20mA (Note c)
Reverse Current Per segment	$I_R$	---	---	50	$\mu A$	VR=5V

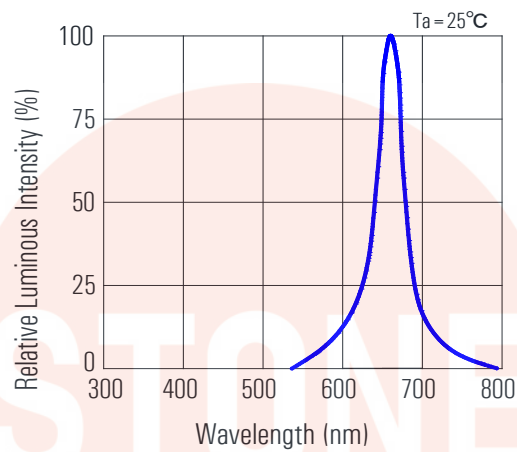
### Notes:

- Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.  
Tolerance of Luminous Intensity:  $\pm 10\%$
- The dominant wavelength ( $\lambda_d$ ) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.
- Tolerance of Forward Voltage:  $\pm 0.1V$

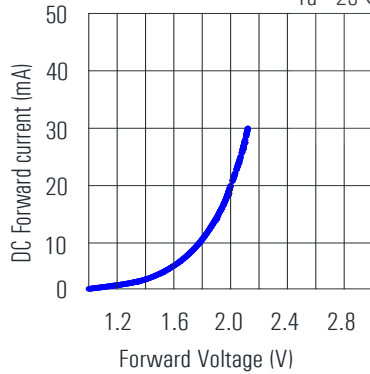


## Typical Electrical/Optical Characteristics Curves

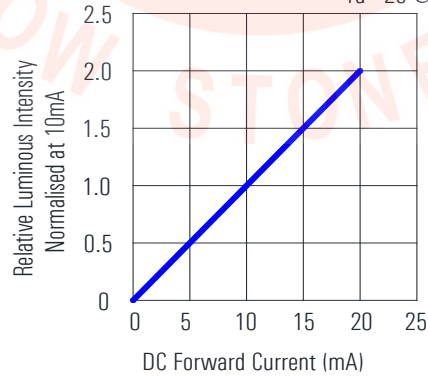
Relative Luminous Intensity Vs Wavelength



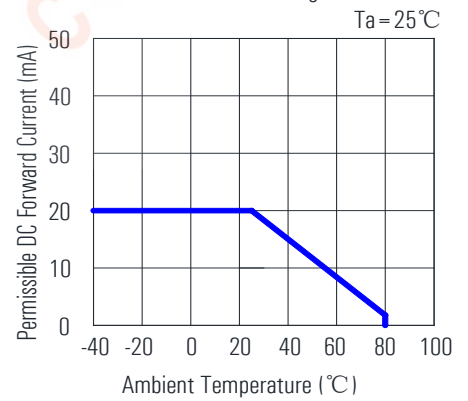
Forward Current & Forward Voltage  
 $T_a = 25^\circ\text{C}$



Relative Luminous Intensity & Forward Current  
 $T_a = 25^\circ\text{C}$



Forward Current Derating Curve



## Packing & Label Specifications

