

# MSQC6112C, MSQC6142C, MSQC6912C, MSQC6942C, MSQC6412C, MSQC6442C

## 14mm (0.56 inch) Four Digit Multiplex Clock Stick Display

**Bright Red:** MSQC6112C  
MSQC6142C  
**High Efficiency Red:** MSQC6912C  
MSQC6942C  
**Green:** MSQC6412C  
MSQC6442C

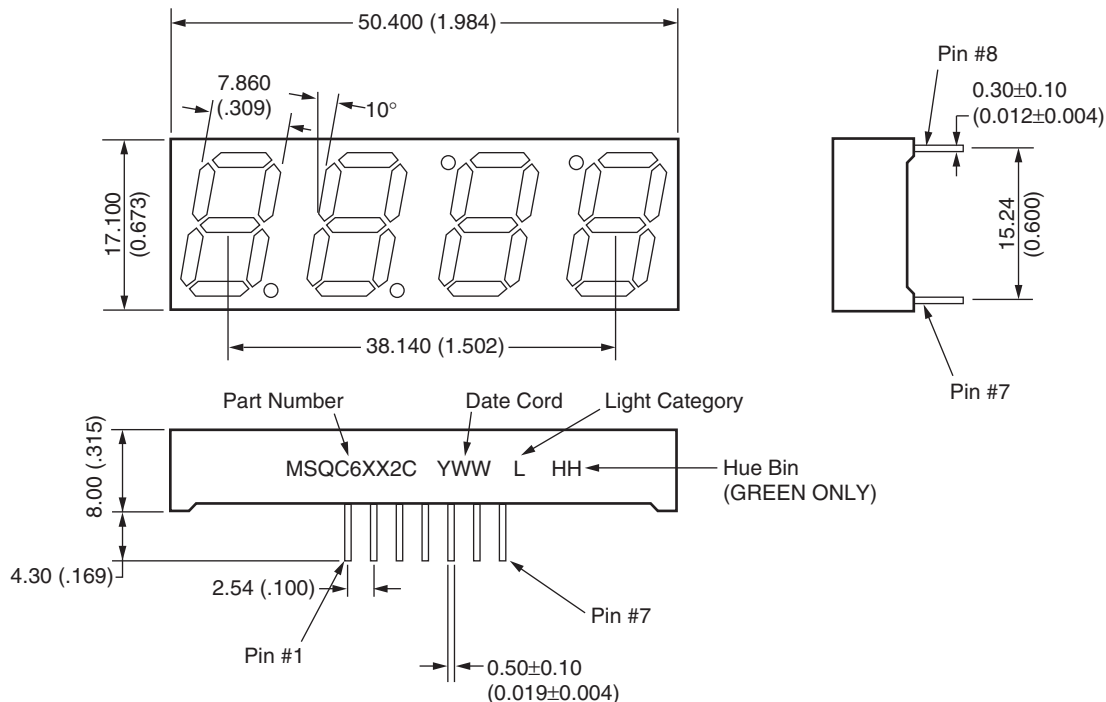
### Features

- Bright Bold Segments
- Common Anode/Cathode
- Low Power Consumption
- Low Current Capability
- High Performance
- High Reliability

### Applications

- Appliances
- Automotive
- Instrumentation
- Process Control

### Package Dimensions



#### Notes:

- Dimensions are in mm (inches)
- Tolerances are ±0.25mm (0.010") unless otherwise stated.

MSQC6112C, MSQC6142C, MSQC6912C, MSQC6942C, MSQC6412C, MSQC6442C 14mm (0.56 inch) Four Digit Multiplex Clock Stick Display

## Models Available

Part Number	Colour	Description
MSQC6112C	Bright Red	Clock Display, Common Anode, gray face, neutral segments
MSQC6142C	Bright Red	Clock Display, Common Cathode, gray face, neutral segments
MSQC6412C	Green	Clock Display, Common Anode, gray face, green segments
MSQC6442C	Green	Clock Display, Common Cathode, gray face, green segments
MSQC6912C	H.E.R	Clock Display, Common Anode, gray face, neutral segments
MSQC6942C	H.E.R.	Clock Display, Common Cathode, gray face, neutral segments

(For other colour options, contact your local area Sales Manager)

## Absolute Maximum Ratings<sup>(1)</sup> ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)

Part Number Parameter	MSQC6112C MSQC6142C	MSQC6412C MSQC6442C	MSQC6912C MSQC6942C	Units
Continuous Forward Current (each segment)	15	25	25	mA
Peak Forward Current ( $F = 10\text{KHz}$ , $D/F = 1/10$ )	60	90	90	mA
Power Dissipation ( $P_D$ )	40	70	70	mW
*Derate Linearly from $25^\circ\text{C}$	0.17	0.33	0.33	mW
Reverse Voltage per Die	5 Volts			
Operating and Storage Temperature Range	-40°C to +85°C			
Lead soldering time (1/16 inch from standoffs)	5 seconds @ 230°C			

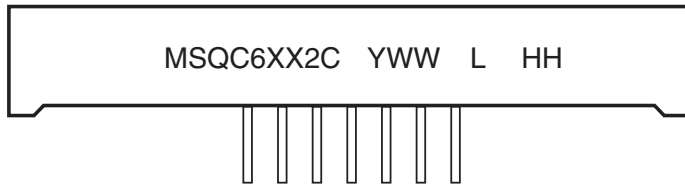
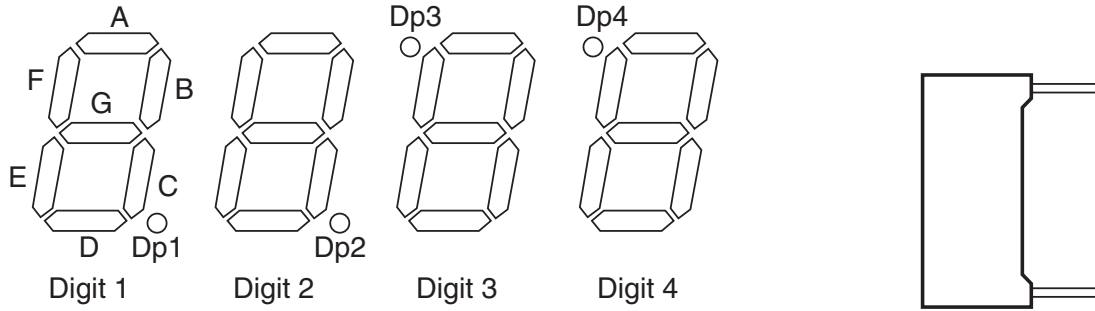
## Electro-Optical Characteristics<sup>(1)</sup> ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)

Part Number Parameter	MSQC6112C MSQC6142C	MSQC6412C MSQC6442C	MSQC6912C MSQC6912C	Units	Test Condition
Luminous intensity <sup>(2)</sup> ( $I_V$ )					
Minimum (Standard Current)	300	800	800	$\mu\text{cd}$	$I_F = 10\text{mA}$
Typical (Standard Current)	700	2400	2000	$\mu\text{cd}$	$I_F = 10\text{mA}$
Minimum (Low Current)	Not Available				
Typical (Low Current)	Not Available				
Forward Voltage ( $V_F$ )					
Typical (Standard Current)	2.10	2.10	2.00	V	$I_F = 20\text{mA}$
Maximum (Standard Current)	2.80	2.80	2.80	V	$I_F = 20\text{mA}$
Typical (Low Current)	Not Available				
Maximum (Low Current)	Not Available				
Peak Wavelength	695	570	635	nm	$I_F = 20\text{mA}$
Dominant Wavelength	Not Available				
Spectral Line 1/2 Width	90	30	45	nm	$I_F = 10\text{mA}$
Reverse B <sup>(3)</sup> . Voltage ( $V_R$ )	5	5	5	V	$I_R = 100\mu\text{A}$

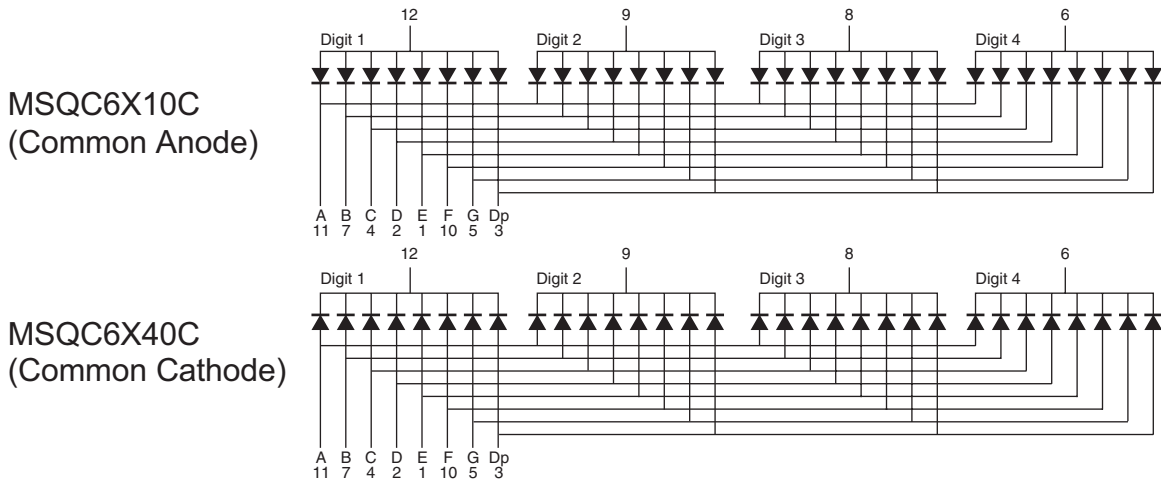
### NOTES:

- (1) Data per individual LED element
- (2) Luminous intensity ( $\mu\text{cd}$ ) = average light output per segment
- (3) B = breakdown

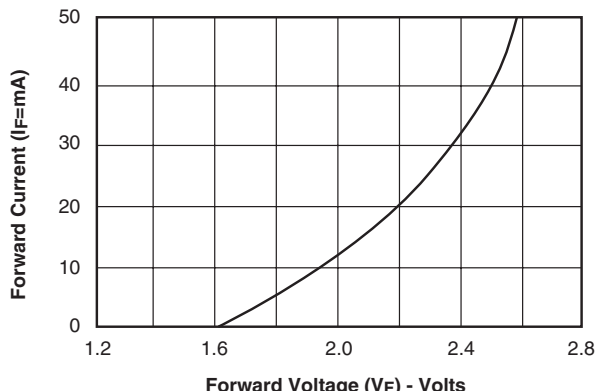
### Pin Orientation, Segment Identification, and Product Marking



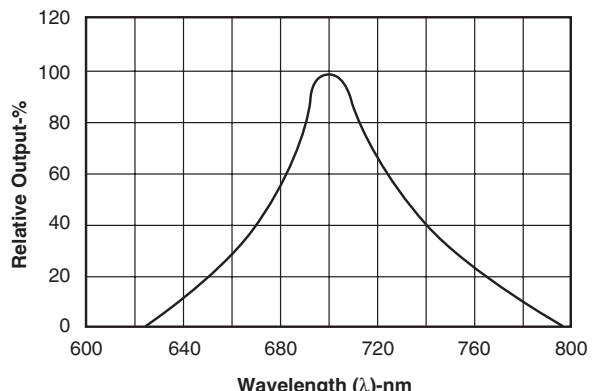
### Schematics



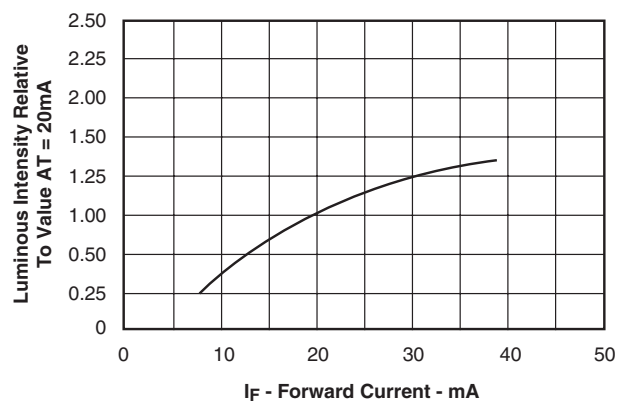
**Graphical Data Bright Red** ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)



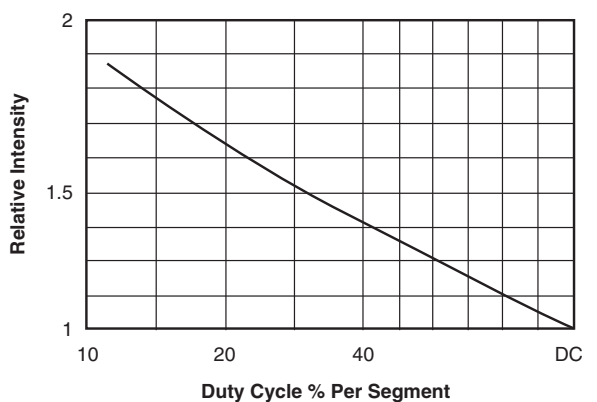
**Fig. 1 Forward Current vs. Forward Voltage**



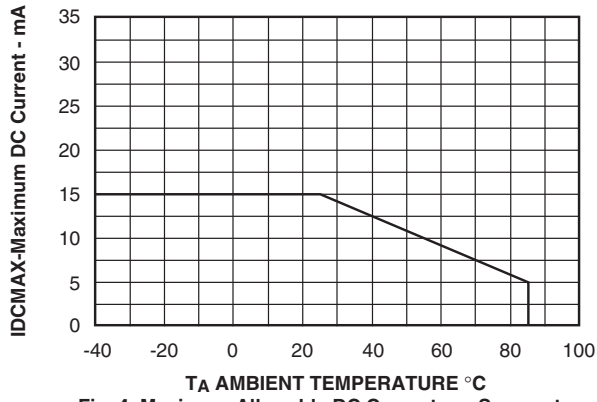
**Fig. 2 Spectral Response**



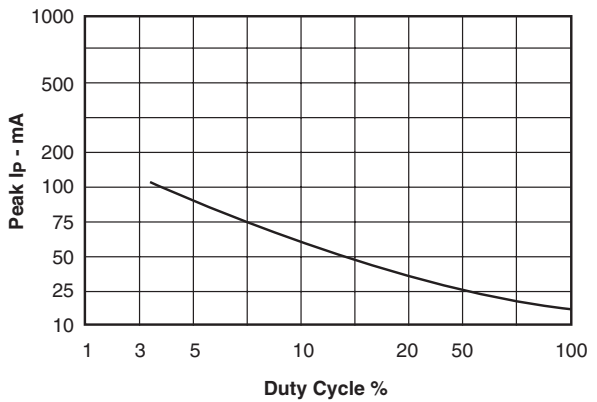
**Fig. 3 Relative Luminous Intensity vs. Forward Current**



**Fig. 5 Luminous Intensity vs. Duty Cycle**

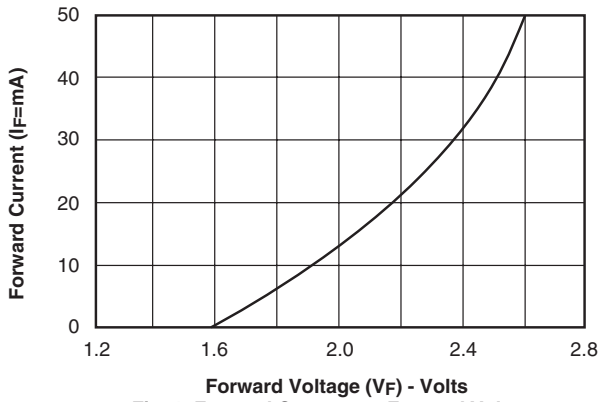


**Fig. 4 Maximum Allowable DC Current per Segment vs. a Function of Ambient Temperature**

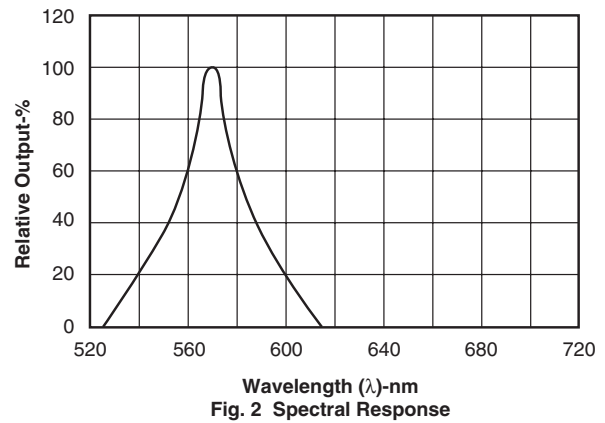


**Fig. 6 Max Peak Current vs. Duty Cycle % (Refresh Rate f=1 KHz)**

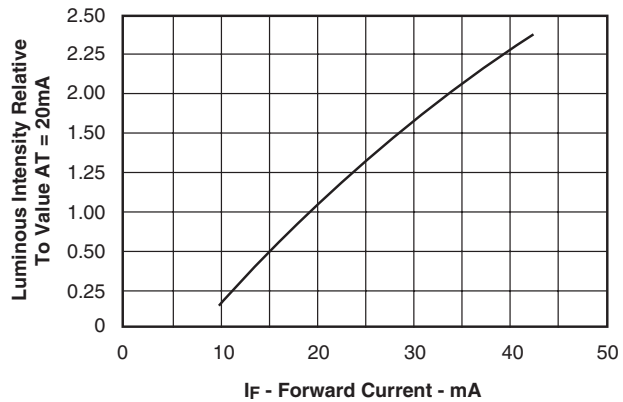
**Graphical Data Green** (TA = 25°C, unless otherwise specified)



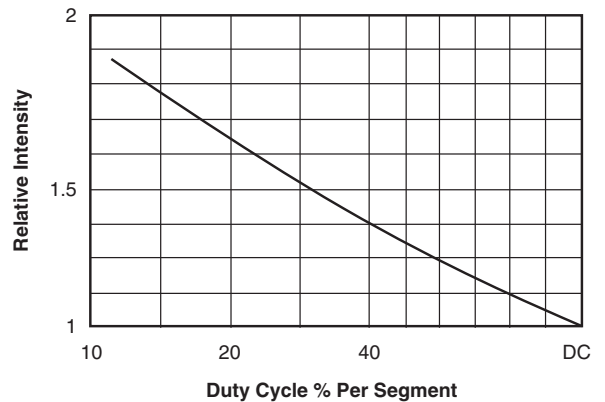
**Fig. 1 Forward Current vs. Forward Voltage**



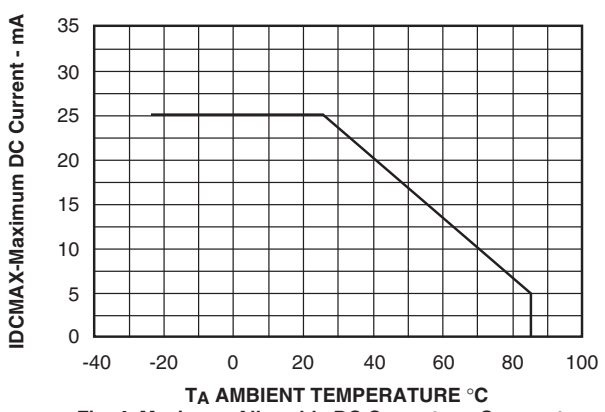
**Fig. 2 Spectral Response**



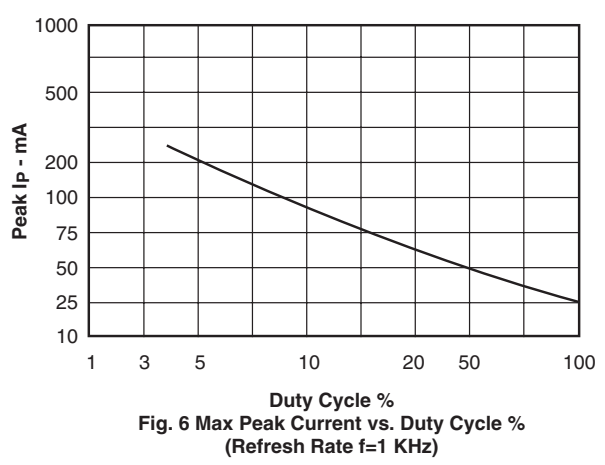
**Fig. 3 Relative Luminous Intensity vs. Forward Current**



**Fig. 5 Luminous Intensity vs. Duty Cycle**

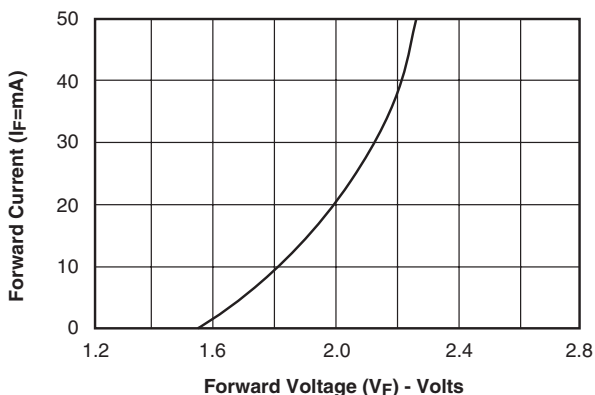


**Fig. 4 Maximum Allowable DC Current per Segment vs. a Function of Ambient Temperature**

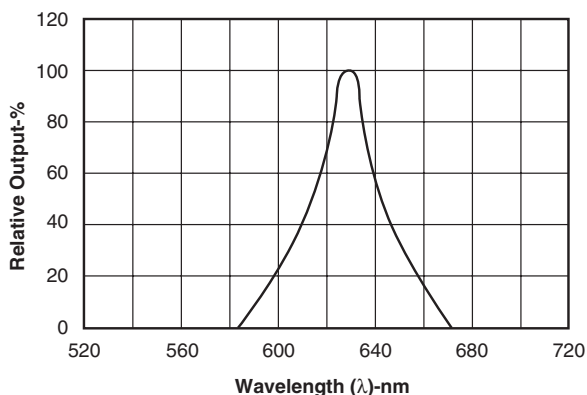


**Fig. 6 Max Peak Current vs. Duty Cycle (Refresh Rate f=1 KHz)**

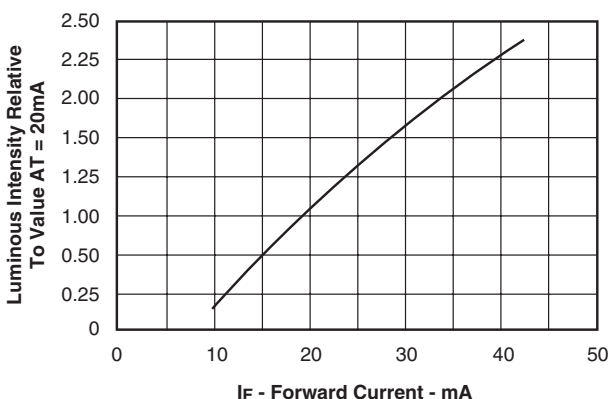
**Graphical Data High Efficiency Red ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)**



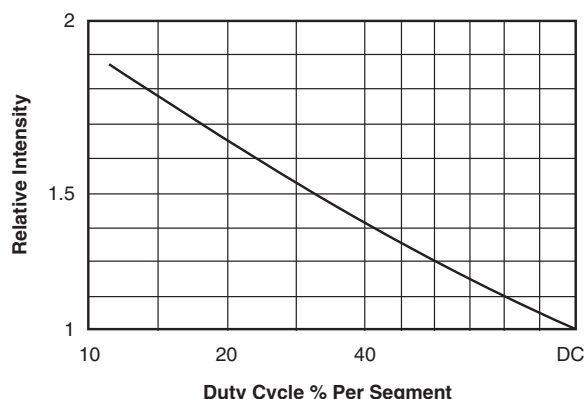
**Fig. 1 Forward Current vs. Forward Voltage**



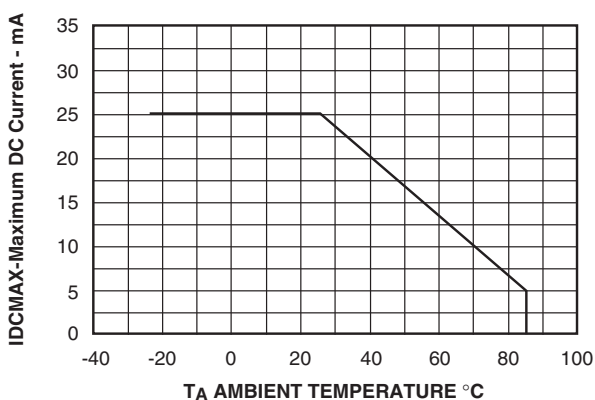
**Fig. 2 Spectral Response**



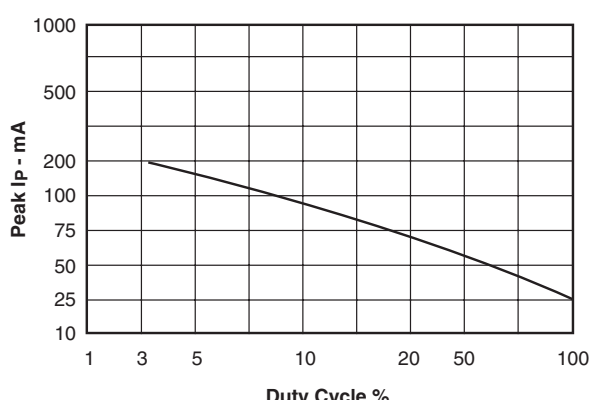
**Fig. 3 Relative Luminous Intensity vs. Forward Current**



**Fig. 5 Luminous Intensity vs. Duty Cycle**



**Fig. 4 Maximum Allowable DC Current per Segment vs. a Function of Ambient Temperature**



**Fig. 6 Max Peak Current vs. Duty Cycle % (Refresh Rate f=1 KHz)**

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