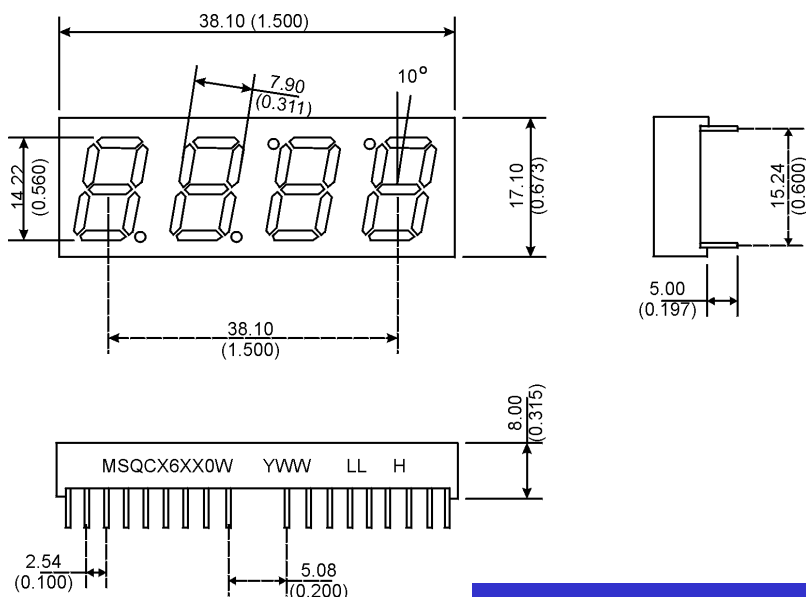


Bright Red MSQC6110C, MSQC6140C
 High Efficiency Red MSQC6910C, MSQC6940C
 Green MSQC6410C, MSQC6440C

TR/QTS/030100-001

PACKAGE DIMENSIONS



NOTES:

- Dimensions are in mm (inches)
- Tolerances are +/- 0.25 (0.010) unless otherwise stated.

FEATURES

- Bright Bold Segments
- Common Anode/Cathode
- Low Power Consumption
- Low Current Capability
- Neutral Segments
- Grey Face
- Epoxy Encapsulated PCB
- High Performance
- High Reliability

APPLICATIONS

- Appliances
- Automotive
- Instrumentation
- Process Control

MODELS AVAILABLE

Part Number	Colour	Description
MSQC6110C	Bright Red	Four Digit, Clock Display, Common Anode
MSQC6140C	Bright Red	Four Digit, Clock Display, Common Cathode
MSQC6410C	Green	Four Digit, Clock Display, Common Anode
MSQC6440C	Green	Four Digit, Clock Display, Common Cathode
MSQC6910C	High Efficiency Red	Four Digit, Clock Display, Common Anode
MSQC6940C	High Efficiency Red	Four Digit, Clock Display, Common Cathode

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



14mm (0.56 inch) Four Digit CLOCK STICK DISPLAY

ABSOLUTE MAXIMUM RATINGS⁽¹⁾ ($T_A = 25^\circ\text{C}$, unless otherwise specified)

Part Number	MSQC6110C	MSQC6410C	MSQC6910C	
Parameter	MSQC6140C	MSQC6440C	MSQC6940C	Units
Continuous Forward Current (each segment)	15	25	25	mA
Peak Forward Current ($F = 10\text{KHz}$, $D/F = 1/10$)	60	100	90	mA
Power Dissipation (P_D)	40	75	70	mW
*Derate Linearly from 25°C	0.24	0.68	0.63	mW
Reverse Voltage per Die	5 Volts			
Operating and Storage Temperature Range	-25°C to $+105^\circ\text{C}$			
Lead soldering time (1/16 inch from standoffs)	5 seconds @ 230°C			

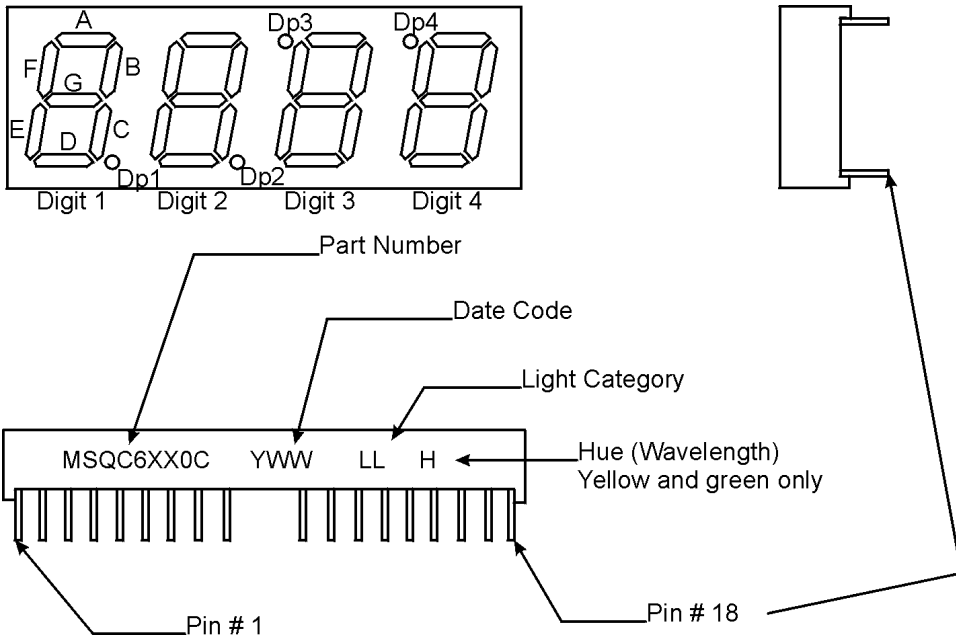
ELECTRO-OPTICAL CHARACTERISTICS⁽¹⁾ ($T_A = 25^\circ\text{C}$, unless otherwise specified)

Part Number	MSQC6110C	MSQC6410C	MSQC6910C		
Parameter	MSQC6140C	MSQC6440C	MSQC6910C	Units	Test Condition
Luminous intensity⁽²⁾ (I_V)					
Minimum (Standard Current)	300	800	900	ucd	$I_F = 20\text{mA}$
Typical (Standard Current)	700	2000	2200	ucd	$I_F = 20\text{mA}$
Minimum (Low Current)	Not Available				
Typical (Low Current)	Not Available				
Forward Voltage (V_F)					
Typical (Standard Current)	2.10	2.10	2.00	Volts	$I_F = 20\text{mA}$
Maximum (Standard Current)	2.60	2.80	2.80	Volts	$I_F = 20\text{mA}$
Typical (Low Current)	Not Available				
Maximum (Low Current)	Not Available				
Peak Wavelength	697	565	635	nm	$I_F = 20\text{mA}$
Dominant Wavelength	700	569	627	nm	$I_F = 20\text{mA}$
Spectral Line 1/2 Width	90	30	45	nm	$I_F = 10\text{mA}$
Reverse B⁽³⁾.Voltage (V_R)	5	5	5	Volts	$I_R = 100\mu\text{A}$

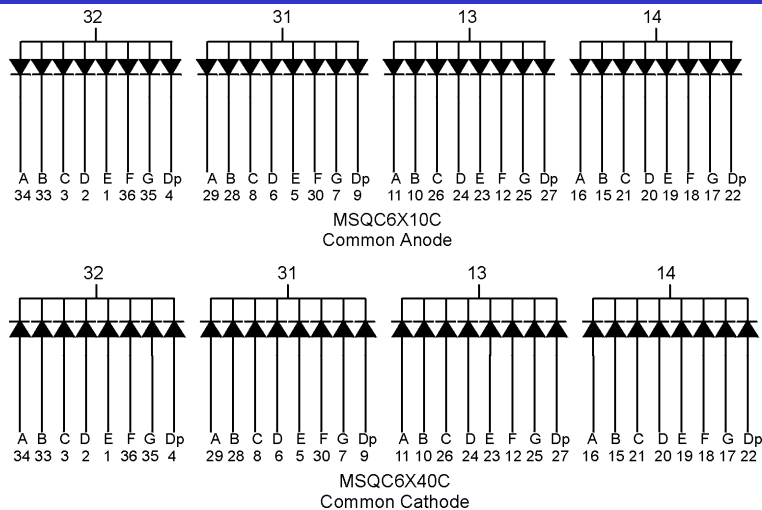
NOTES:

- (1) Data per individual LED element
- (2) Luminous intensity (ucd) = 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)

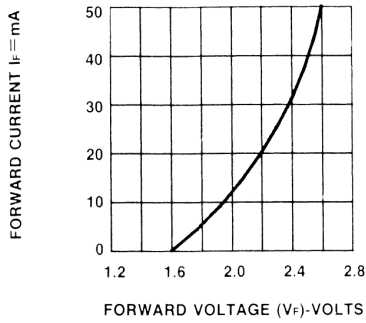


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

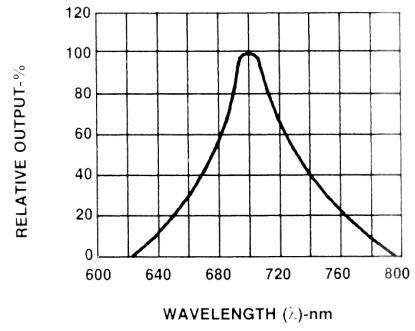


Fig.2 SPECTRAL RESPONSE

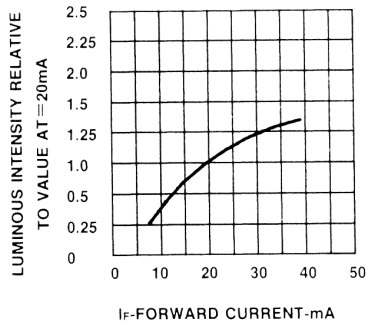


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

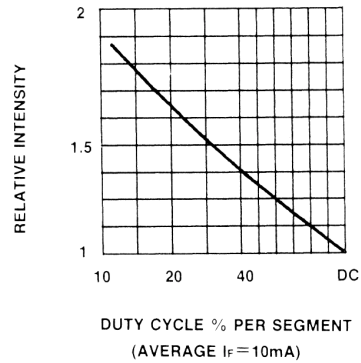


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

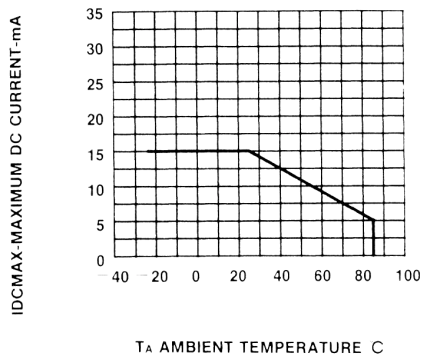


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

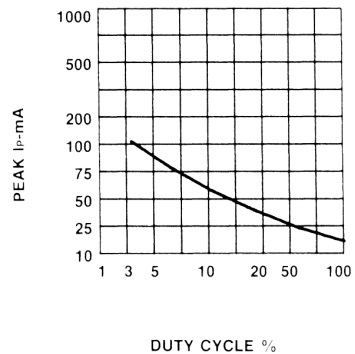


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE $f = 1\text{ KHz}$)

GRAPHICAL DATA Green ($T_A = 25^\circ\text{C}$, unless otherwise specified)

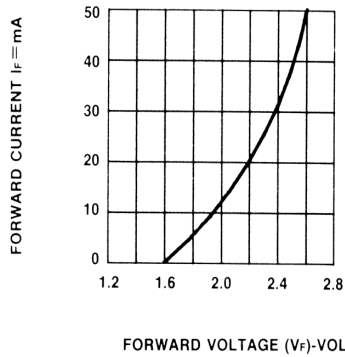


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

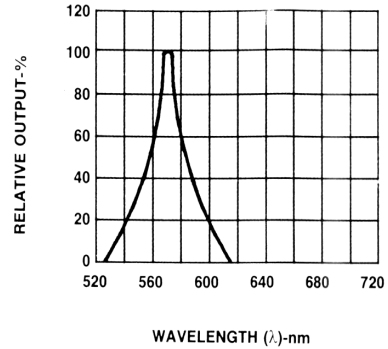


Fig.2 SPECTRAL RESPONSE

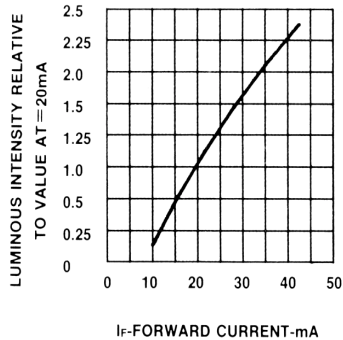


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

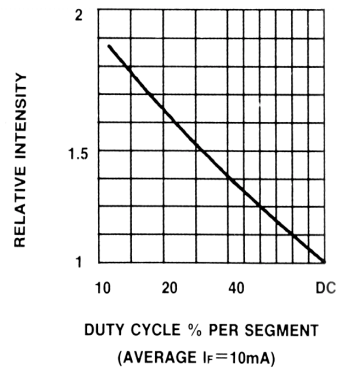


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

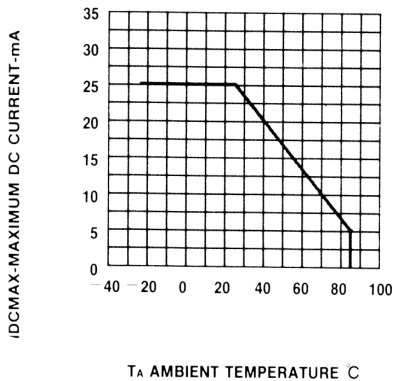


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT CS. A FUNCTION OF AMBIENT TEMPERATURE.

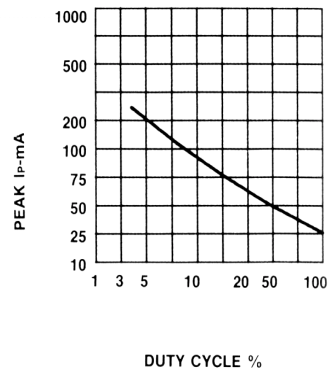


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE $f = 1\text{ KHz}$)

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

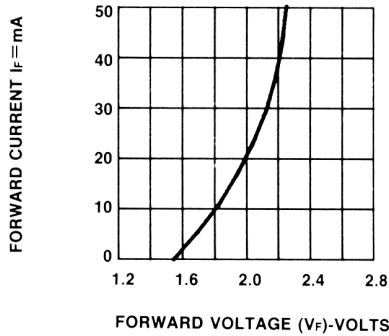


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

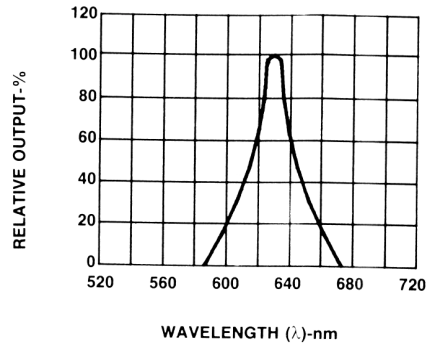


Fig.2 SPECTRAL RESPONSE

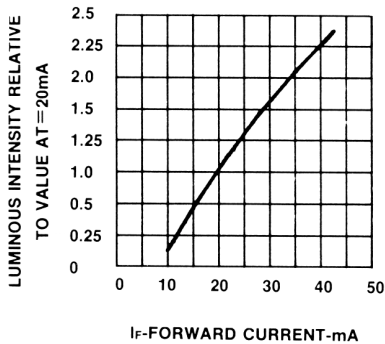


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

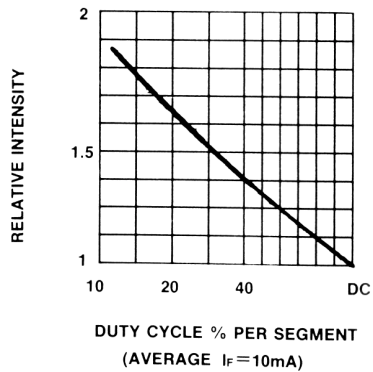


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

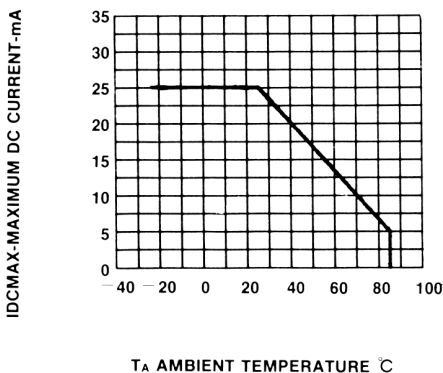


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

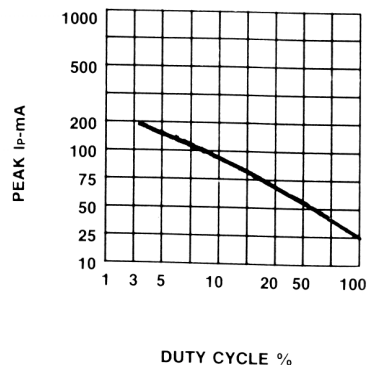


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE $f = 1 \text{ KHz}$)