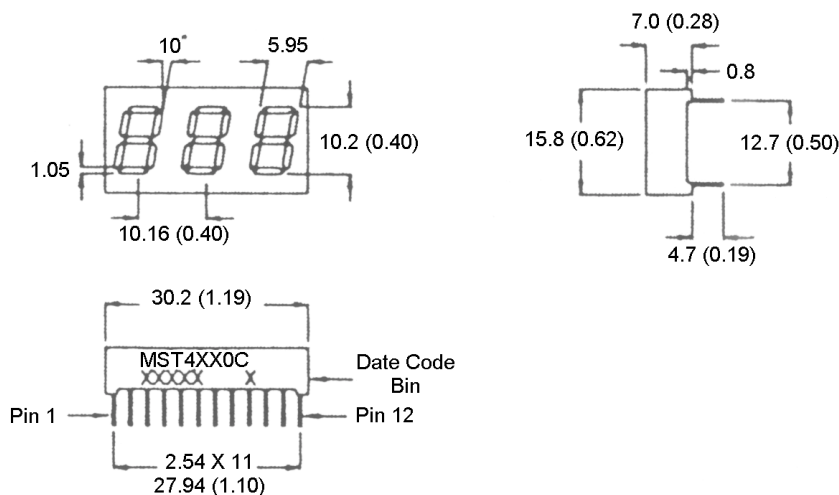


**Bright Red MST4110C, MST4140C**  
**High Efficiency Red MST4910C, MST4940C**  
**Green MST4410C, MST4440C**

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
MST4110C	Bright Red	Three Digit, RHDP, Common Anode
MST4140C	Bright Red	Three Digit, RHDP, Common Cathode
MST4410C	Green	Three Digit, RHDP, Common Anode
MST4440C	Green	Three Digit, RHDP, Common Cathode
MST4910C	High Efficiency Red	Three Digit, RHDP, Common Anode
MST4Y40C	High Efficiency Red	Three Digit, RHDP, Common Cathode

(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	MST4110C	MST4410C	MST4910C	
Parameter	MST4140C	MST4440C	MST4940C	Units
<b>Continuous Forward Current</b> (each segment)	15	25	25	mA
<b>Peak Forward Current</b> ( $F = 10\text{KHz}$ , $D/F = 1/10$ )	60	90	90	mA
<b>Power Dissipation (<math>P_D</math>)</b>	40	70	70	mW
<b>*Derate Linearly from <math>25^\circ\text{C}</math></b>	0.17	0.33	0.33	mW
<b>Reverse Voltage per Die</b>	5 Volts			
<b>Operating and Storage Temperature Range</b>	$-40^\circ\text{C}$ to $+85^\circ\text{C}$			
<b>Lead soldering time (1/16 inch from standoffs)</b>	5 seconds @ $230^\circ\text{C}$			

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

Part Number	MST4110C	MST4410C	MST4910C		
Parameter	MST4140C	MST4440C	MST4940C	Units	Test Condition
<b>Luminous intensity<sup>(2)</sup> (<math>I_V</math>)</b>					
Minimum (Standard Current)	320	850	800	ucd	$I_F = 20\text{mA}$
Typical (Standard Current)	800	2200	2200	ucd	$I_F = 20\text{mA}$
Minimum (Low Current)	Not Available				
Typical (Low Current)	Not Available				
<b>Forward Voltage (<math>V_F</math>)</b>					
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				
<b>Peak Wavelength</b>	697	570	635	nm	$I_F = 20\text{mA}$
<b>Dominant Wavelength</b>	Not Available				
<b>Spectral Line 1/2 Width</b>	90	30	45	nm	$I_F = 10\text{mA}$
<b>Reverse B<sup>(3)</sup>.Voltage (<math>V_R</math>)</b>	5	5	5	Volts	$I_R = 100\mu\text{A}$

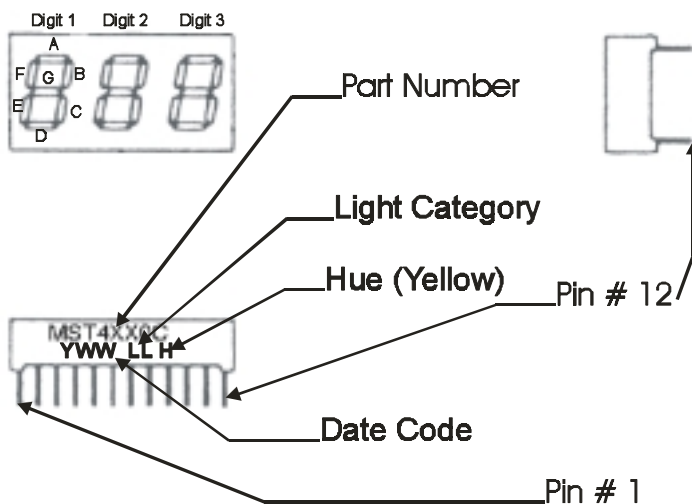
NOTES:

(1) Data per individual LED element

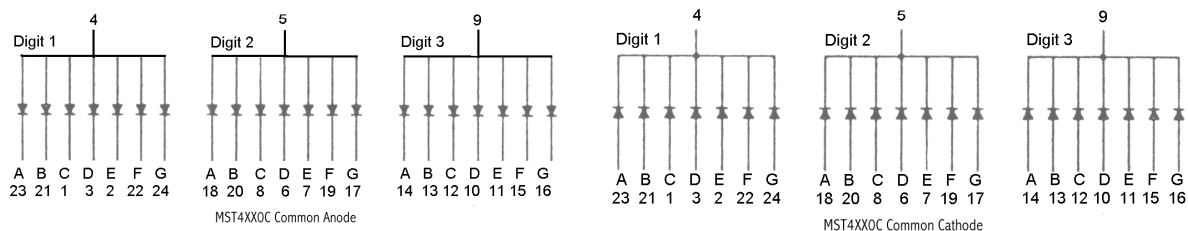
(2) Luminous intensity (ucd) = average light output per segment

(3) B = breakdown

**PIN ORIENTATION, SEGMENT IDENTIFICATION, AND PRODUCT MARKING**



**SCHEMATICS**



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

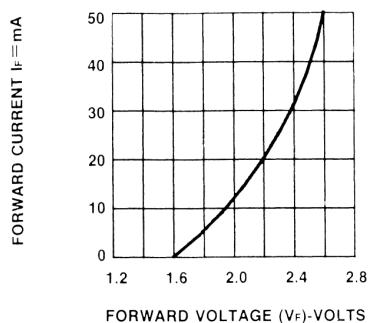


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

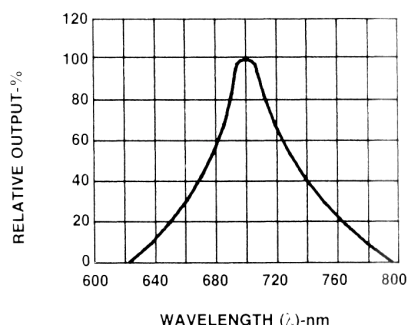


Fig.2 SPECTRAL RESPONSE

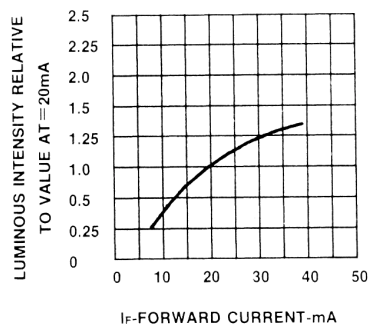


Fig.3 RELATIVE LUMINOUS INTENSITY  
VS. FORWARD CURRENT

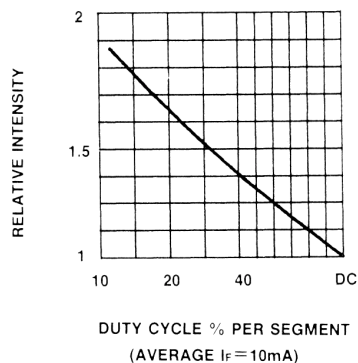


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

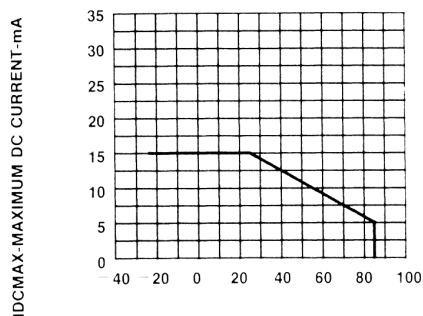


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER  
SEGMENT VS. A FUNCTION OF AMBIENT  
TEMPERATURE.

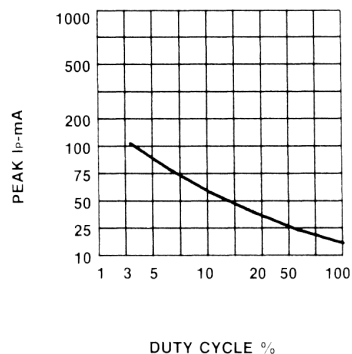


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE %  
(REFRESH  $f = 1\text{ KHz}$ )

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

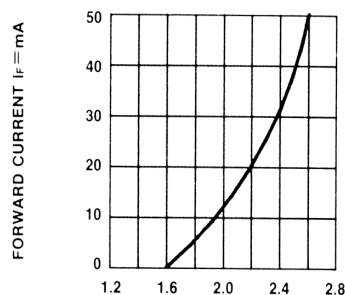


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

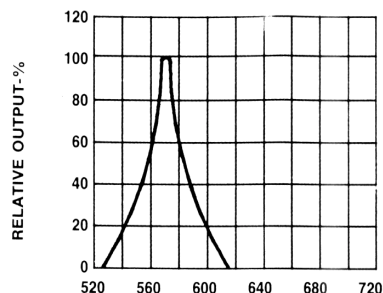


Fig.2 SPECTRAL RESPONSE

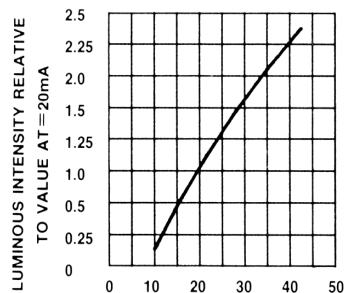


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

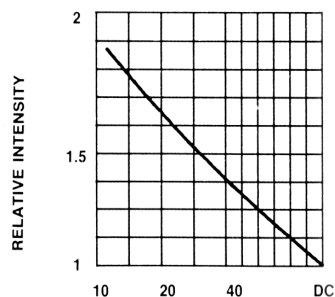


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE  
(AVERAGE  $I_F = 10\text{mA}$ )

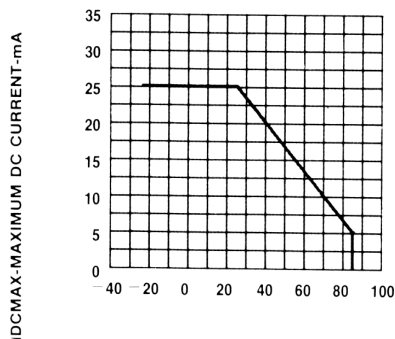


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT CS. A FUNCTION OF AMBIENT TEMPERATURE.

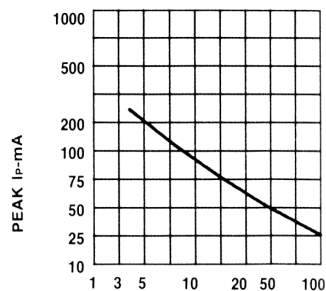


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE %  
(REFRESH RATE  $f = 1\text{ KHz}$ )

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

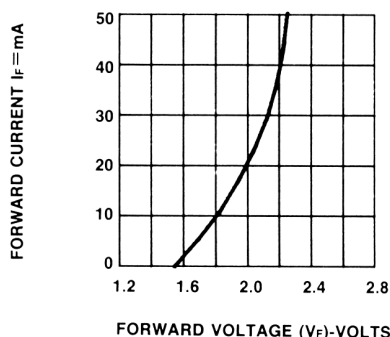


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

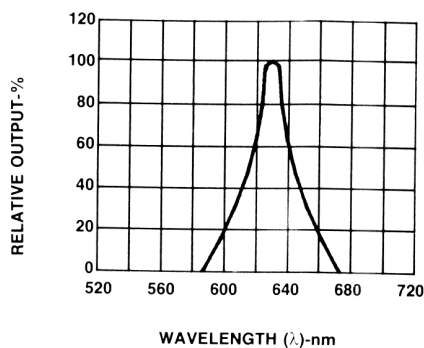


Fig.2 SPECTRAL RESPONSE

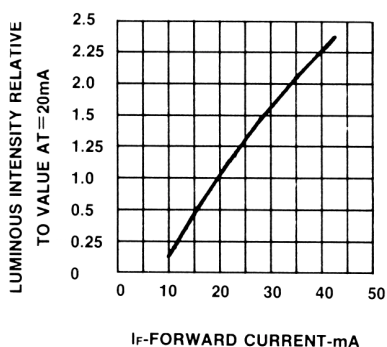


Fig.3 RELATIVE LUMINOUS INTENSITY  
VS. FORWARD CURRENT

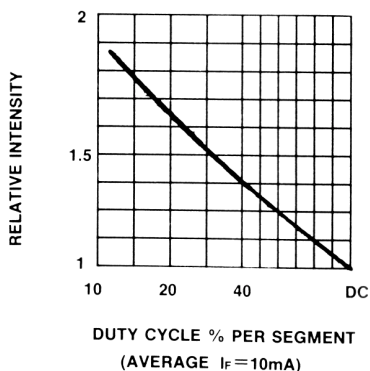


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE  
(AVERAGE  $I_F = 10\text{mA}$ )

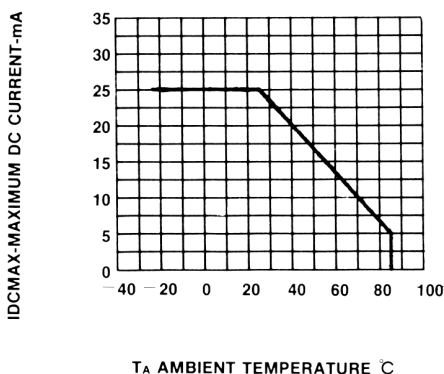


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER  
SEGMENT VS. A FUNCTION OF AMBIENT  
TEMPERATURE.

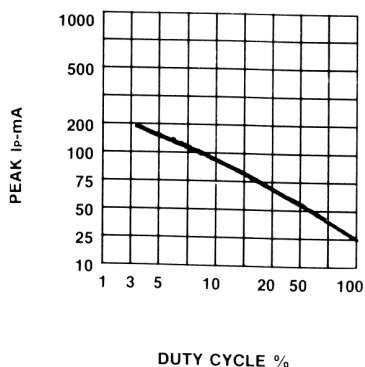


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE %  
(REFRESH RATE  $f = 1\text{ KHz}$ )



## 10mm (0.400 inch) Three Digit NUMERIC STICK DISPLAY

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