

PACKAGE DIMENSIONS

# 0.4 INCH (10.2MM) THREE DIGIT STICK DISPLAY

BRIGHT RED MST4111C, MST4141C GREEN MST4411C, MST4441C HIGH EFF. RED MST4911C, MST4941C

# $\begin{array}{c} 7.00 \ (0.28) \\ \hline \\ \hline \\ 1.30 \ (0.051) \end{array}$

### FEATURES

Easy to read digits. 3 digit common anode or cathode. Low power consumption. Bold segments that are highly visible. High brightness with high contrast White segments on a grey face. Directly compatible with integrated circuits.

Rugged plastic/epoxy construction.

#### **APPLICATIONS**

Digital readout displays. Instrument panels.

NOTES: Dimensions are in mm (inch). All pins are 0.5 (0.02) diameter Tolerances are ± 0.25 (0.1) unless otherwise noted.

## MODEL NUMBERS

=12.7 (0.50)

**Description** Part number Color 3 Digit, Common Anode, RHDP. **Bright Red MST4111C Bright Red** 3 Digit, Common Cathode, RHDP. **MST4141C** 3 Digit, Common Anode, RHDP. Green **MST4411C** 3 Digit, Common Cathode, RHDP. Green **MST4441C** High Eff. Red 3 Digit, Common Anode, RHDP. **MST4911C** 3 Digit, Common Cathode, RHDP. **MST4941C** High Eff. Red (For other color options, contact your local area Sales Office).



**ABSOLUTE MAXIMUM RATING** (TA=25°C unless otherwise specified)

	B.Red Green		High Eff. Red	
	MST	MST	MST	
	4111C	4411C	4911C	
Part number	4141C	4441C	4941C	Unit
Continuous forward current (I <sub>r</sub> )				
Per Segment	15	25	25	mA
Peak forward current per die (I <sub>f</sub> ) (at f = 10 KHz, Duty factor = 1/10)	60	90	90	mA
Power dissipation (P <sub>D</sub> )	40*	70*	70*	mW
*Derate Linearly from 25°C	0.17	0.33	0.33	mW/°C
Reverse voltage per dice				5V
Operating and Storage temperature ra	nge		25°C to ·	+85°C
Lead soldering time (at 1/16 inch from the	bottom of lamp)		5 seconds @ 2	230°C

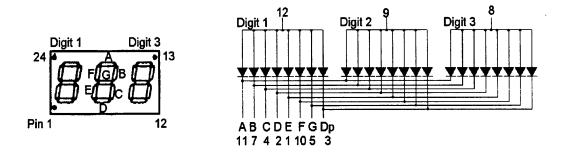
ELECTRO - OPTICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise specified)

	B. Red	Green	High Eff. Red	
	MST 4111C	MST 4411C	MST 4911C	Test
Part number	4141C	4441C	4941C	Condition
Luminous intensity (ucd)				
minimum	320	850	800	l, = 20 mA
typical	800	2200	2200	l. = 20 mA
Forward voltage (V,)				r
typical	2.1	2.1	2.0	l, = 20 mA
maximum	2.6	2.8	2.8	<b>i</b> , = 20 mA
Peak wavelength (nm)	697	570	635	l, = 20 mA
Spectral line half width (nm)	90	30	45	l, = 20 mA
Reverse breakdown voltage (V <sub>R</sub> )	5	5	5	l <sub>e</sub> = 100 uA

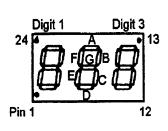


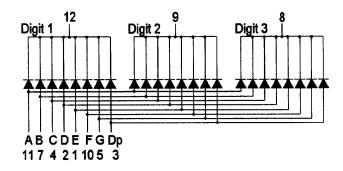
#### PINOUT

#### MST4X11C - Common Anode



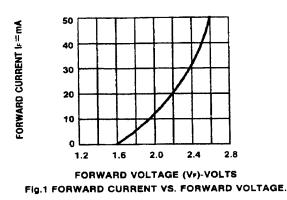
MST4X41C - Common Cathode

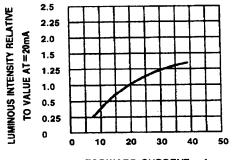






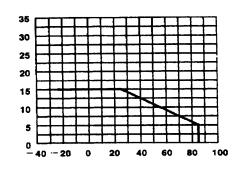
## GRAPHICAL DETAIL: Bright Red (T<sub>A</sub> = 25°C unless otherwise specified)



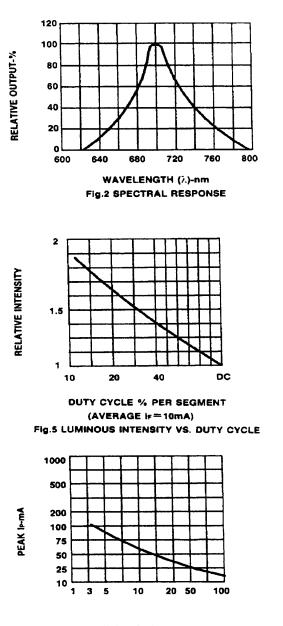




IDCMAX-MAXIMUM DC CURRENT-MA



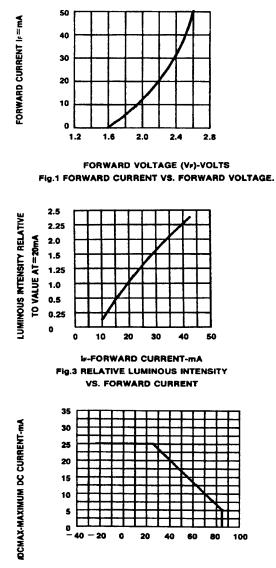
TA AMBIENT TEMPERATURE C Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.



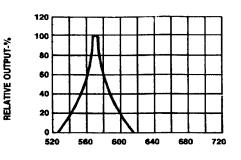
DUTY CYCLE % Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE !=1 KHz)



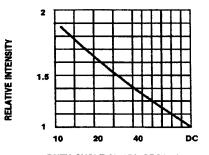
#### **GRAPHICAL DETAIL: Green** (T<sub>A</sub> = 25°C unless otherwise specified)



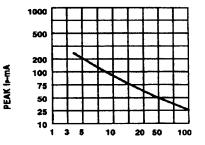




WAVELENGTH (λ)-nm Fig.2 SPECTRAL RESPONSE



DUTY CYCLE % PER SEGMENT (AVERAGE IF=10mA) Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

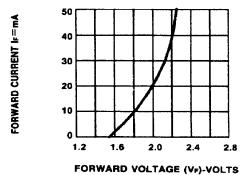


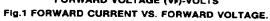
DUTY CYCLE % Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE !=1 KHz)

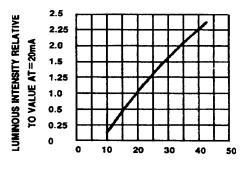


#### **GRAPHICAL DETAIL: High Efficiency Red** (T<sub>A</sub> = 25°C unless otherwise specified)

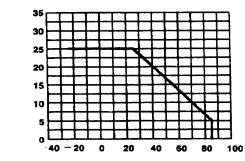
RELATIVE OUTPUT-%







IF-FORWARD CURRENT-MA Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



IDCMAX-MAXIMUM DC CURRENT-mA

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

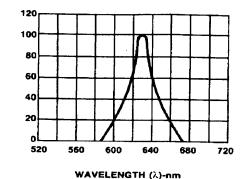
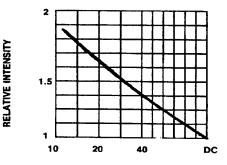
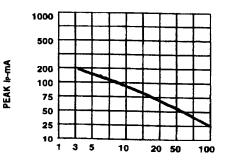


Fig.2 SPECTRAL RESPONSE



DUTY CYCLE % PER SEGMENT (AVERAGE I=10mA) Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE







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