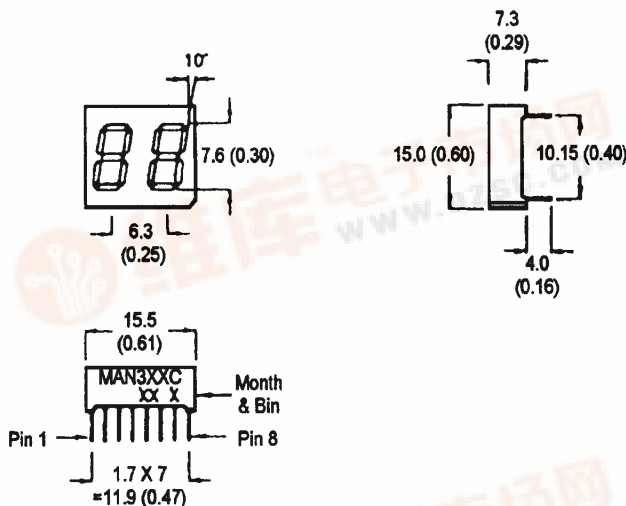


**FAIRCHILD**  
SEMICONDUCTOR™

## 0.30 INCH (7.6MM) TWO DIGIT STICK DISPLAY

**BRIGHT RED MSD314C, MSD315C**  
**GREEN MSD344C, MSD345C**  
**HIGH EFF. RED MSD394C, MSD395C**

### PACKAGE DIMENSIONS



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

### FEATURES

Easy to read digits.  
2 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.

### MODEL NUMBERS

<u>Part number</u>	<u>Color</u>	<u>Description</u>
MSD314C	Bright Red	2 Digit, Common Anode.
MSD315C	Bright Red	2 Digit, Common Cathode.
MSD344C	Green	2 Digit, Common Anode.
MSD345C	Green	2 Digit, Common Cathode.
MSD394C	High Eff. Red	2 Digit, Common Anode.
MSD395C	High Eff. Red	2 Digit, Common Cathode.

(For other color options, contact your local area Sales Office)

**ABSOLUTE MAXIMUM RATING** (T<sub>A</sub>=25°C unless otherwise specified)

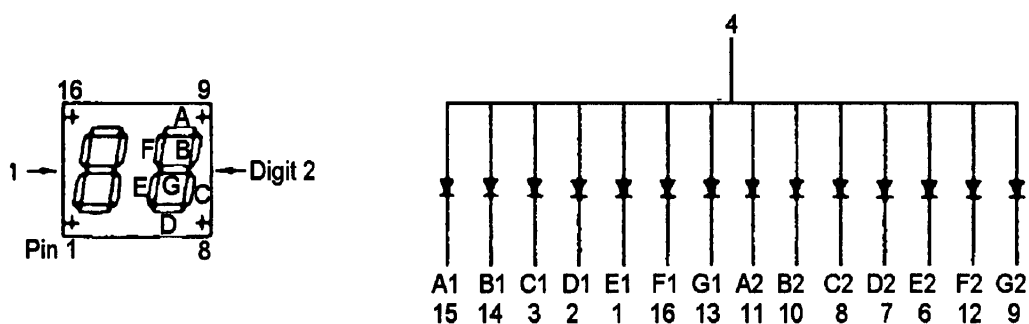
Part number	B.Red MSD 314C 315C	Green MSD 344C 345C	High Eff. Red MSD 394C 395C	Unit
Continuous forward current (I <sub>F</sub> ) Per Segment.....	15	25	25	mA
Peak forward current per die (I <sub>P</sub> )..... (at f = 10.0 KHz, Duty factor = 1/10)	60	90	90	mA
Power dissipation (P <sub>D</sub> ).....	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 range.....	- 40°C to +85°C			
Lead soldering time (at 1/16 inch from the bottom of lamp).....	5 seconds @ 230°C			

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

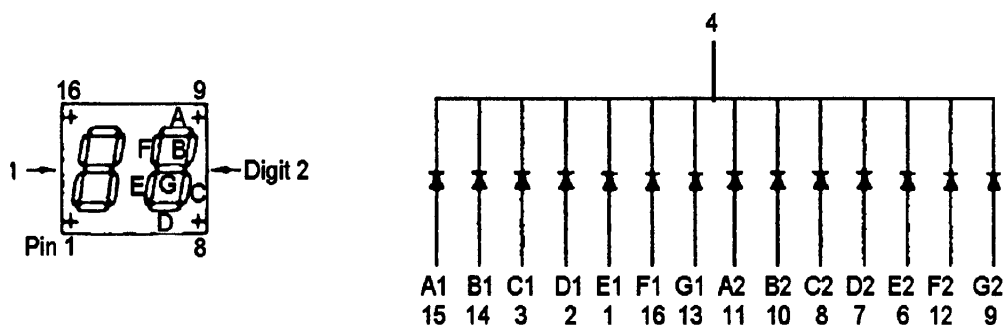
Part number	B. Red MSD 314C 315C	Green MSD 344C 345C	High Eff. Red MSD 394C 395C	Test Condition
Luminous intensity (ucd)				
minimum	210	540	800	I <sub>F</sub> = 20 mA
typical	650	1600	2200	I <sub>F</sub> = 20 mA
Forward voltage (V <sub>F</sub> )				
typical	2.1	2.1	2.0	I <sub>F</sub> = 20 mA
maximum	2.6	2.8	2.8	I <sub>F</sub> = 20 mA
Peak wavelength (nm)	697	570	635	I <sub>F</sub> = 20 mA
Spectral line half width (nm)	90	30	45	I <sub>F</sub> = 20 mA
Reverse breakdown voltage (V <sub>R</sub> )	5	5	5	I <sub>R</sub> = 100 uA

## PINOUT

**MSD3X4C - Common Anode**



**MSD3X5C - Common Cathode**



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

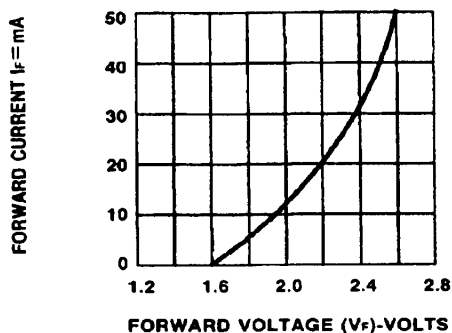


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

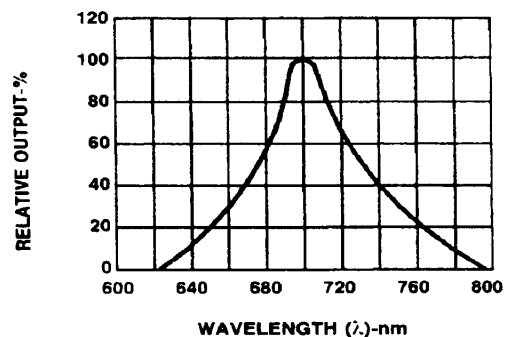


Fig.2 SPECTRAL RESPONSE

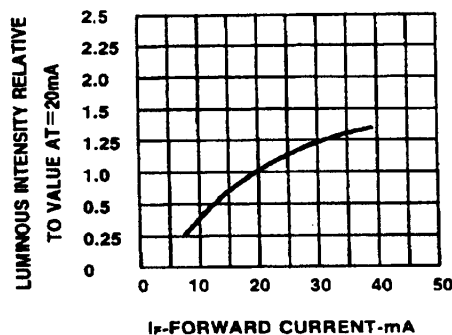


Fig.3 RELATIVE LUMINOUS INTENSITY  
VS. FORWARD CURRENT

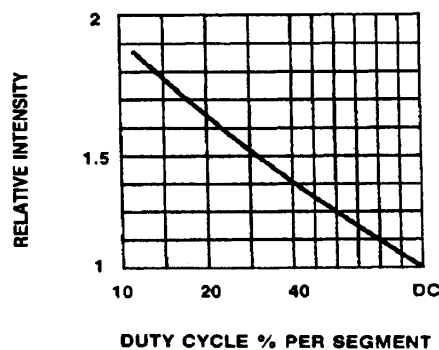


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE  
(AVERAGE  $I_F = 10\text{mA}$ )

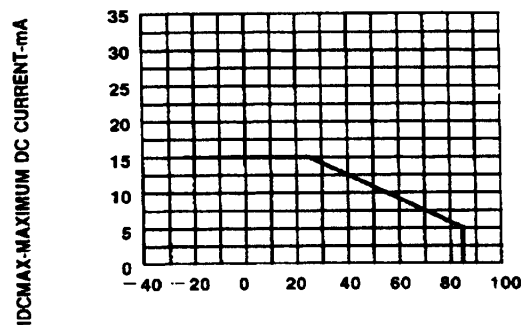


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER  
SEGMENT VS. A FUNCTION OF AMBIENT  
TEMPERATURE.

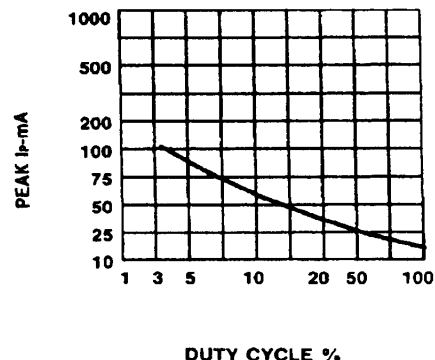


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE %  
(REFRESH RATE  $f = 1\text{ KHz}$ )

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

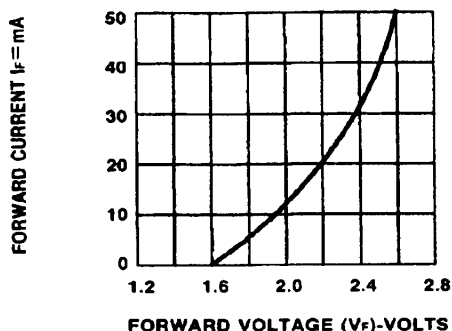


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

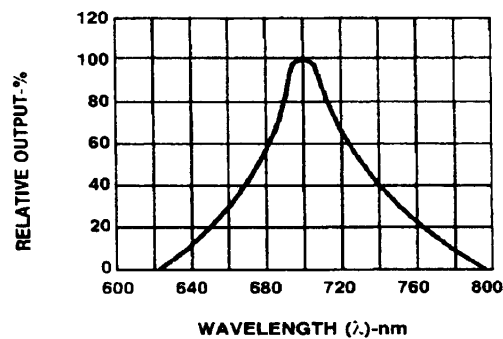


Fig.2 SPECTRAL RESPONSE

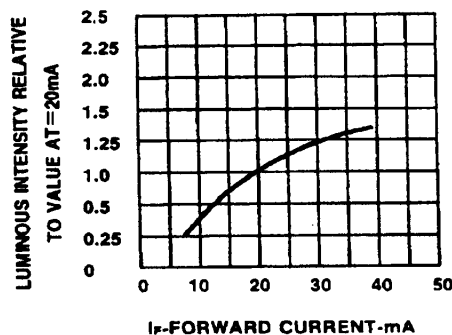


Fig.3 RELATIVE LUMINOUS INTENSITY  
VS. FORWARD CURRENT

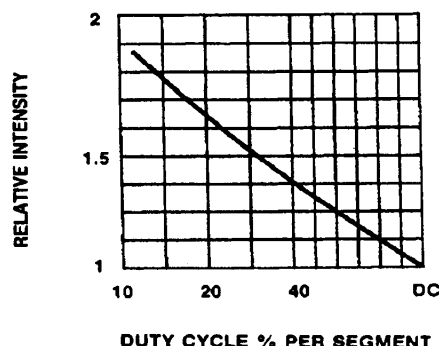


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE  
(AVERAGE  $I_F = 10\text{mA}$ )

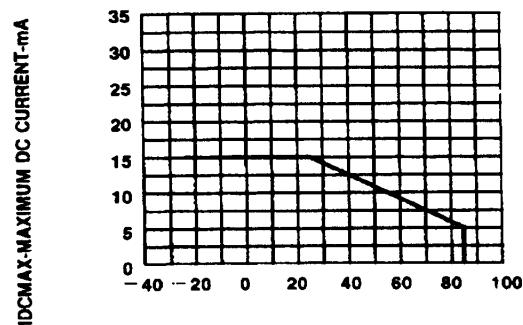


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER  
SEGMENT VS. A FUNCTION OF AMBIENT  
TEMPERATURE.

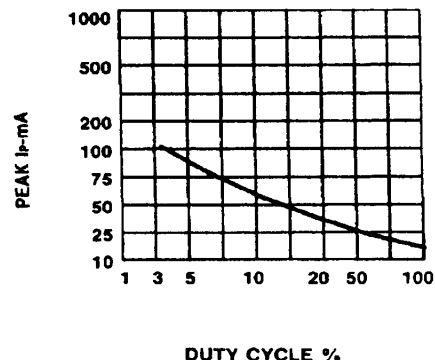


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE %  
(REFRESH RATE  $f = 1\text{ KHz}$ )

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

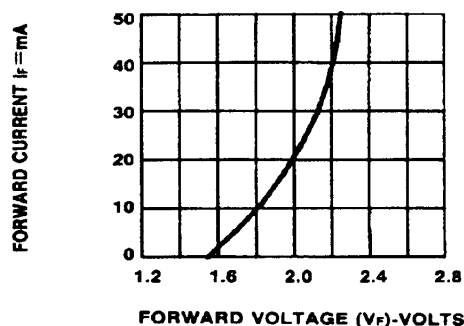


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

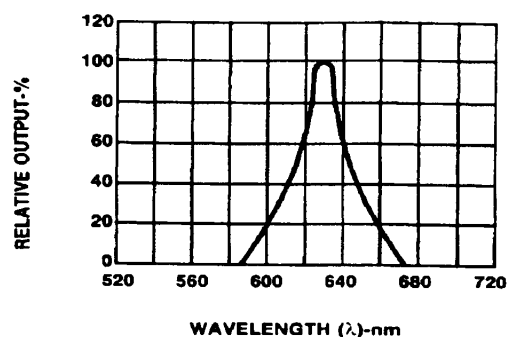


Fig.2 SPECTRAL RESPONSE

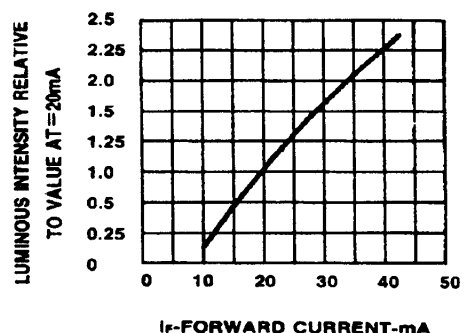


Fig.3 RELATIVE LUMINOUS INTENSITY  
VS. FORWARD CURRENT

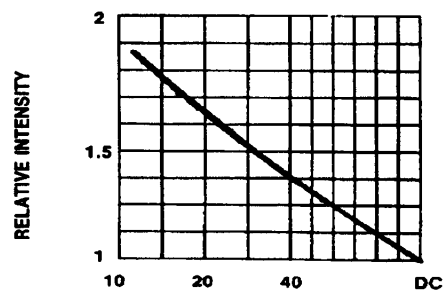


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE  
(AVERAGE  $I_F = 10\text{mA}$ )



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

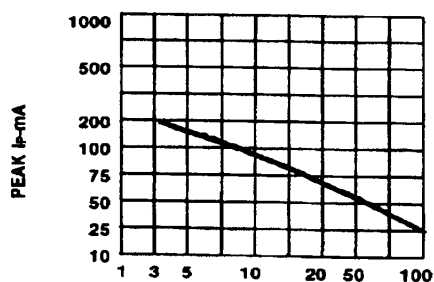


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE %  
(REFRESH RATE  $f = 1\text{ KHz}$ )

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.