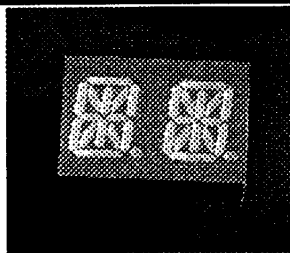
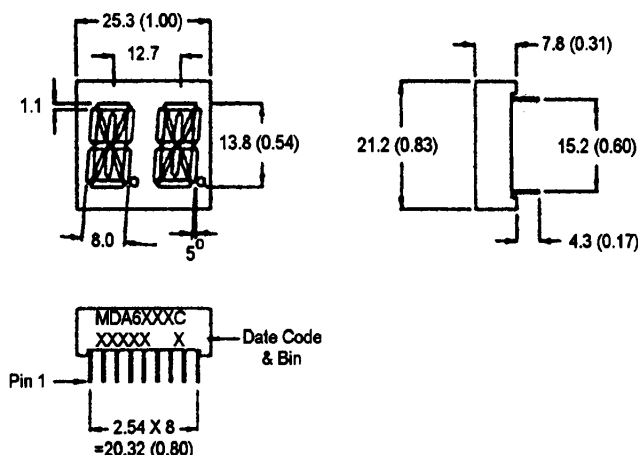

FAIRCHILD

SEMICONDUCTOR™

**0.54 INCH (13.7MM)
14 SEGMENT, DUAL DIGIT
ALPHA - NUMERIC STICK DISPLAY**

BRIGHT RED MDA6110C, MDA6140C
YELLOW MDA6310C, MDA6340C
GREEN MDA6410C, MDA6440C
HIGH EFF. RED MDA6910C, MDA6940C

PACKAGE DIMENSIONS

NOTES: Dimensions are in mm (inch).
All pins are 0.5 (0.02) diameter
Tolerances are ± 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> |
|--------------------|---------------|---|
| MDA6110C | Bright Red | 2 Digit; Common Anode; Rt. Hand Decimal |
| MDA6140C | Bright Red | 2 Digit; Common Cathode; Rt. Hand Decimal |
| MDA6310C | Yellow | 2 Digit; Common Anode; Rt. Hand Decimal |
| MDA6340C | Yellow | 2 Digit; Common Cathode; Rt. Hand Decimal |
| MDA6410C | Green | 2 Digit; Common Anode; Rt. Hand Decimal |
| MDA6440C | Green | 2 Digit; Common Cathode; Rt. Hand Decimal |
| MDA6910C | High Eff. Red | 2 Digit; Common Anode; Rt. Hand Decimal |
| MDA6940C | High Eff. Red | 2 Digit; Common Cathode; Rt. Hand Decimal |

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

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

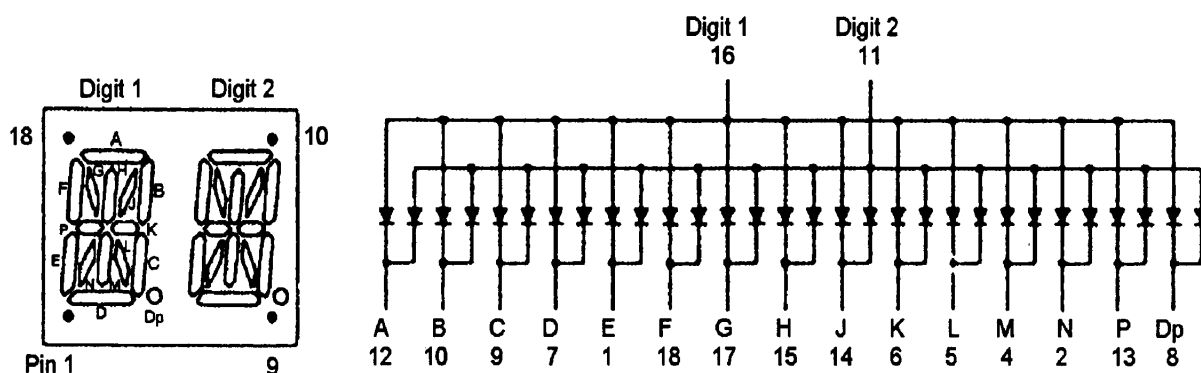
| Part number | B.Red MDA 6110C 6140C | Yellow MDA 6310C 6340C | Green MDA 6410C 6440C | High Eff. Red MDA 6910C 6940C | Unit |
|---|--------------------------------|---------------------------------|--------------------------------|--|-------|
| Continuous forward current (I _F) | | | | | |
| Per Segment..... | 15 | 20 | 30 | 30 | mA |
| Peak forward current per die (I _P). (at f = 1.0 KHz, Duty factor = 1/10) | 50 | 80 | 90 | 160 | mA |
| Power dissipation (P _D)..... | 40* | 70* | 70* | 90* | mW |
| *Derate Linearly From 25°C..... | 0.17 | 0.25 | 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_A = 25°C unless otherwise specified)

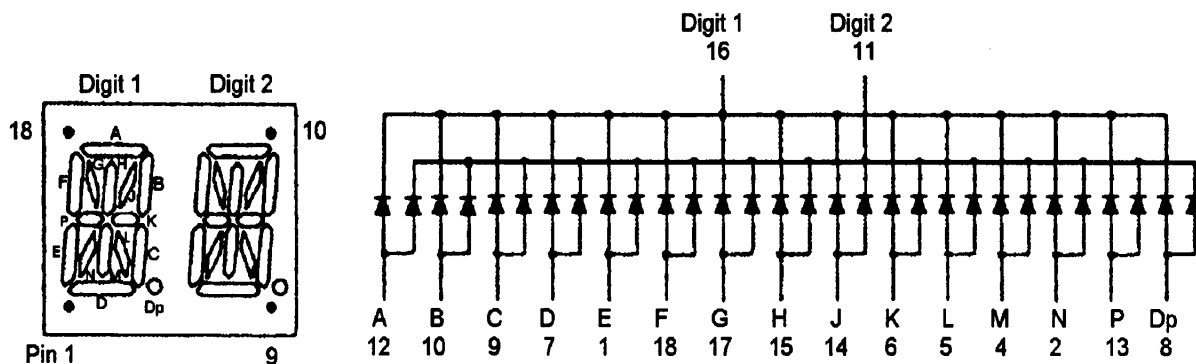
| Part number | B. Red MDA 6110C 6140C | Yellow MDA 6310C 6340C | Green MDA 6410C 6440C | High Eff. Red MDA 6910C 6940C | Test Condition |
|---|---------------------------------|---------------------------------|--------------------------------|--|-------------------------|
| Luminous intensity (ucd) | | | | | I _F = 20 mA |
| minimum | 500 | 1000 | 750 | 1000 | |
| typical | 1400 | 4000 | 5000 | 4000 | |
| Forward voltage (V _F) | | | | | I _F = 20 mA |
| typical | 2.1 | 2.1 | 2.1 | 2.0 | |
| maximum | 2.6 | 2.8 | 2.8 | 2.8 | |
| Peak wavelength (nm) | 697 | 590 | 570 | 635 | I _F = 20 mA |
| Spectral line half width (nm) | 90 | 35 | 30 | 45 | I _F = 20 mA |
| Reverse breakdown voltage (V _R) | 5 | 5 | 5 | 5 | I _R = 100 uA |

PINOUT

MDA6X10C - Common Anode; Pin 3 - no connection



MDA6X40C - Common Cathode; Pin 3 - no connection



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

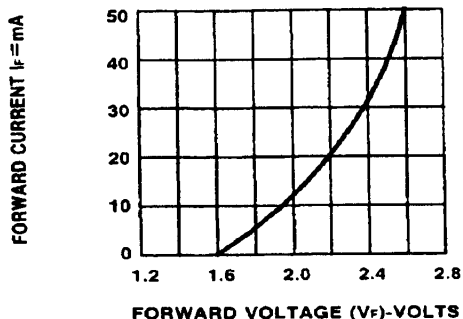


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

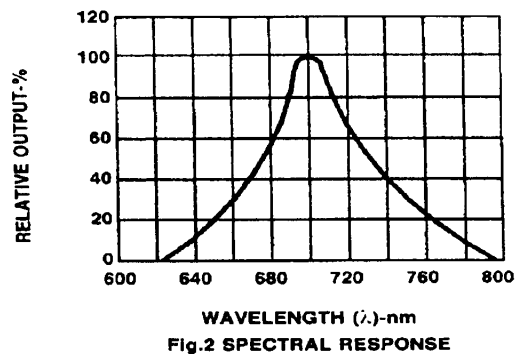


Fig.2 SPECTRAL RESPONSE

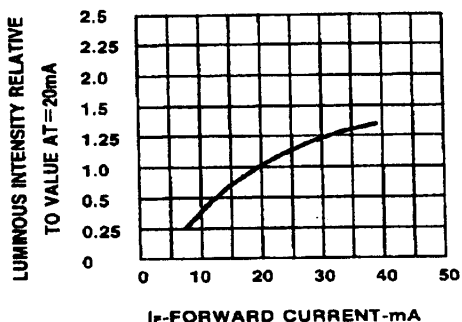


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

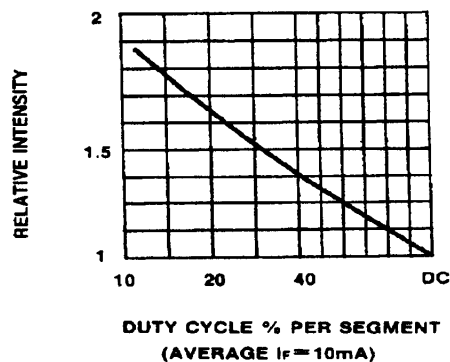


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

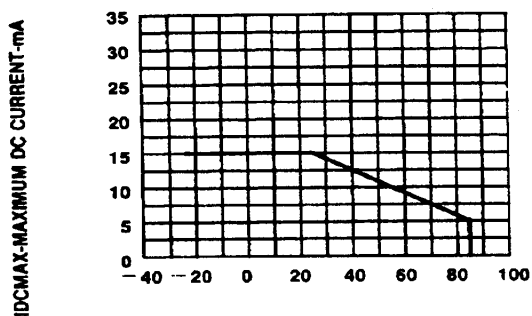


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

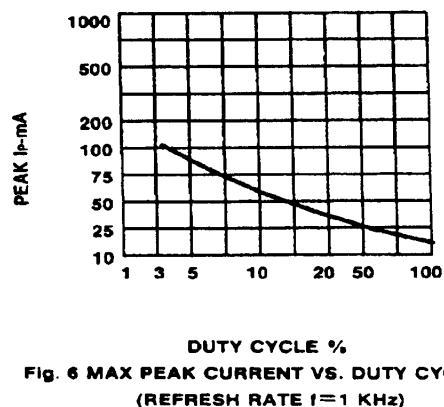


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE %
(REFRESH RATE $f = 1 \text{ KHz}$)

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

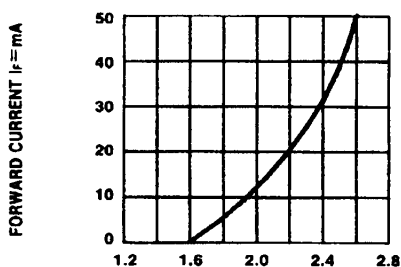


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

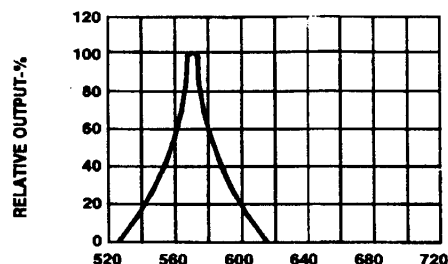


Fig.2 SPECTRAL RESPONSE

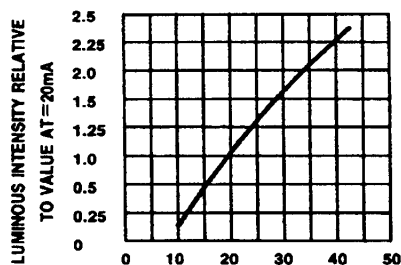


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

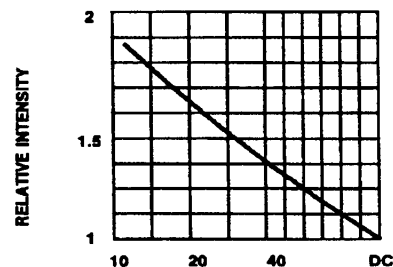


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

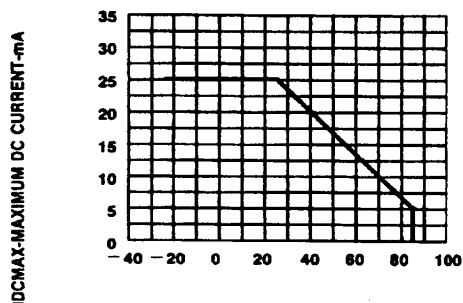


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT CS. A FUNCTION OF AMBIENT TEMPERATURE.

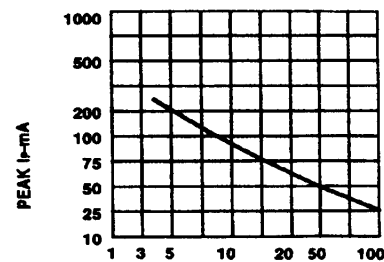


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE %
(REFRESH RATE $f = 1 \text{ KHz}$)

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

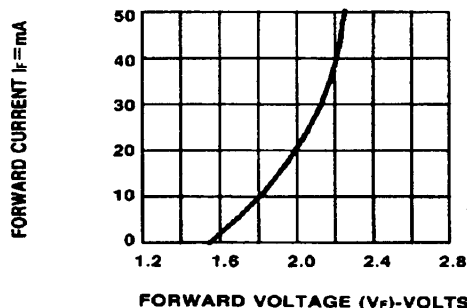


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

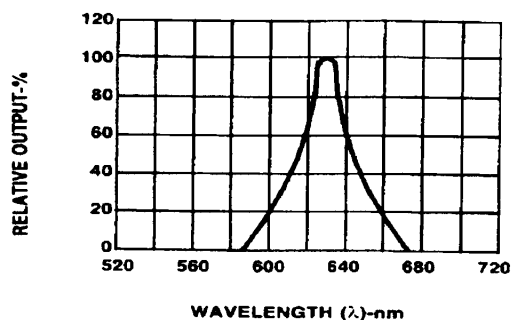


Fig.2 SPECTRAL RESPONSE

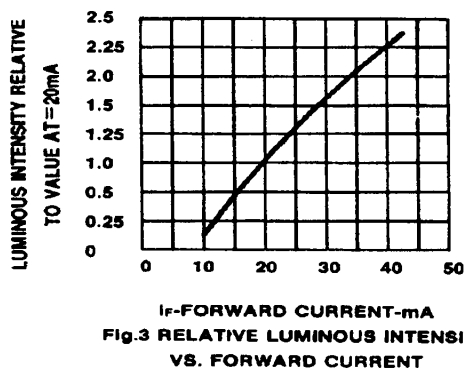


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

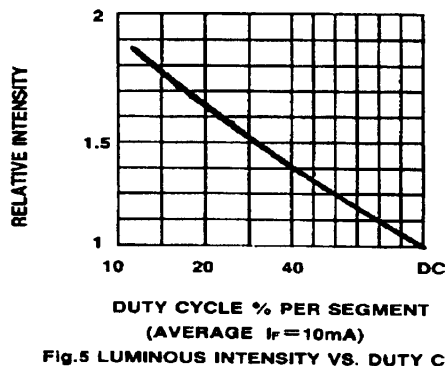


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

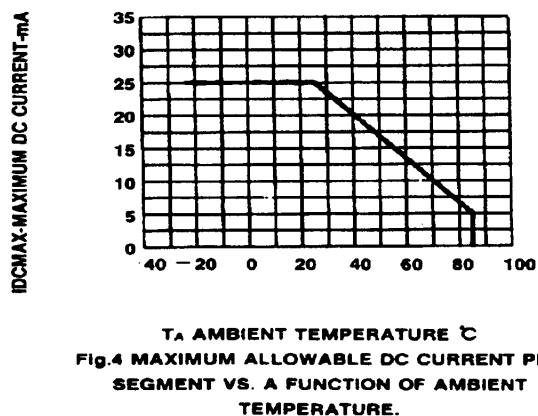


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

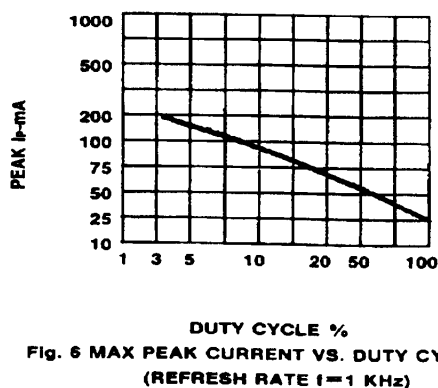


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE %
(REFRESH RATE $f = 1 \text{ KHz}$)

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

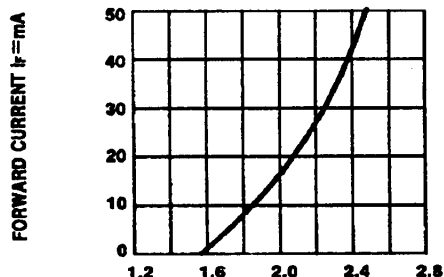


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

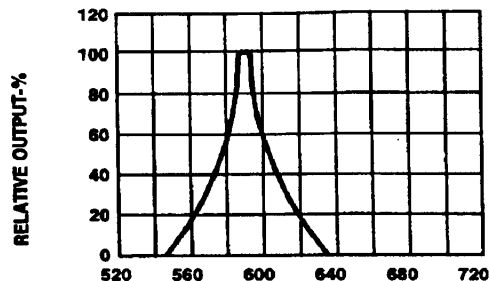
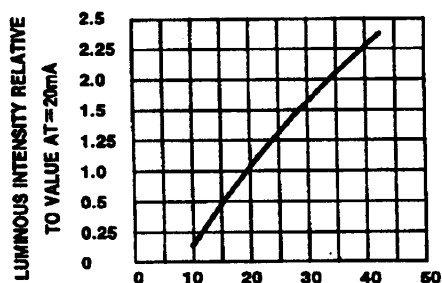


Fig.2 SPECTRAL RESPONSE



**Fig.3 RELATIVE LUMINOUS INTENSITY
VS. FORWARD CURRENT**

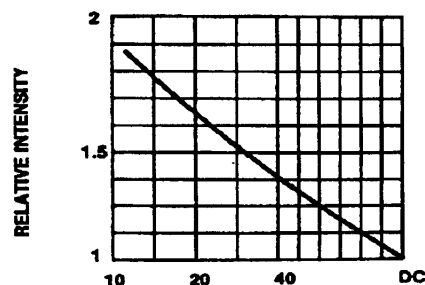
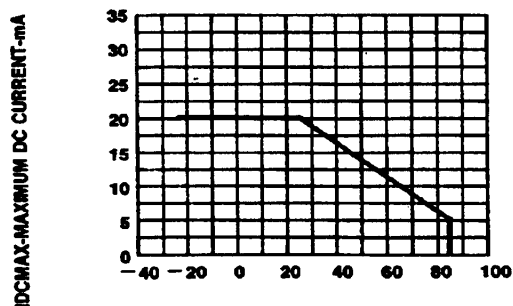
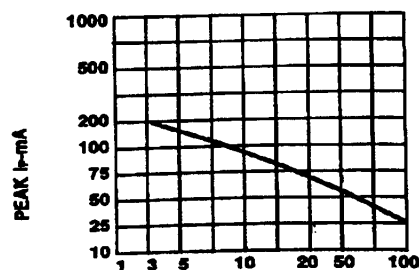


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



**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)**



0.54 INCH (13.7MM) 14 SEGMENT, DUAL DIGIT ALPHA - NUMERIC STICK DISPLAY

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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.