

HDSP-G01x, HDSP-G03x

10.16 mm (0.4 inch) Dual Digit General Purpose
Seven-Segment Display



Data Sheet



Description

This 10.16 mm (0.4 inch) LED dual digit seven-segment display uses industry standard size package and pinout. The device is available in either common anode or common cathode. The choice of colors includes High Efficiency Red (HER), Green, AlGaAs Red, and Yellow. The gray face displays are suitable for indoor use.

Applications

- Suitable for indoor use
- Not recommended for industrial application, i.e., operating temperature requirements exceeding +85°C or below -25°C^[1]
- Extreme temperature cycling not recommended

Note:

1. For additional details, please contact your local Avago sales office or an authorized distributor.

Features

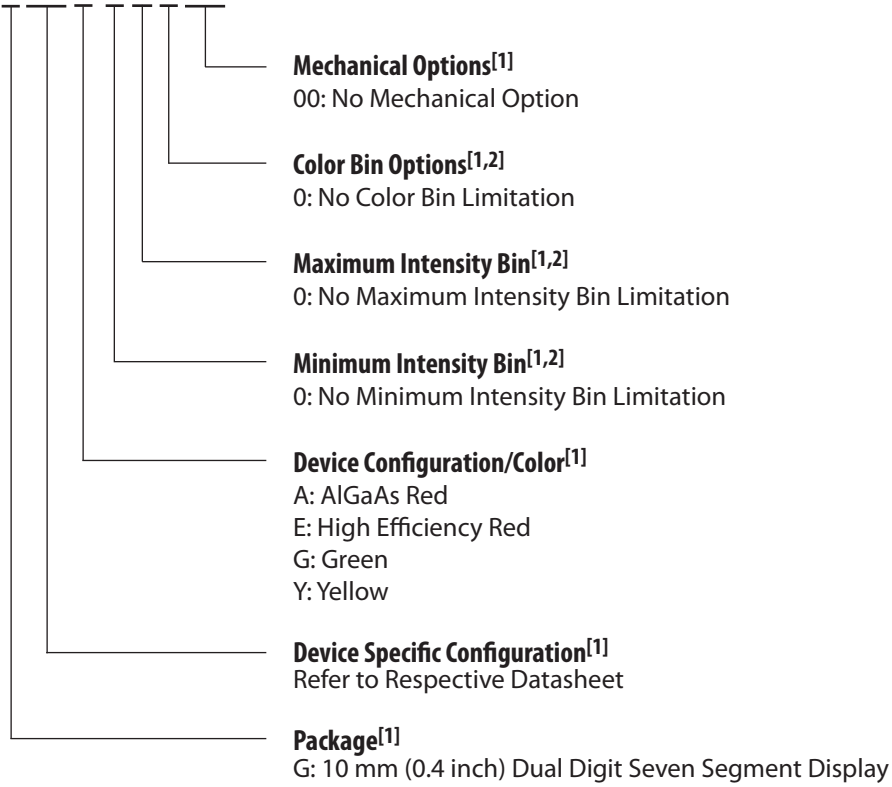
- Industry standard size
- Industry standard pinout
10.16 mm (0.4 inch)
DIP lead on 2.54 mm
- Choice of colors
High Efficiency Red (HER), Green, AlGaAs Red and Yellow
- Excellent appearance
Evenly lighted segments gray package gives optimum contrast
± 50° viewing angle
- Design flexibility
Common anode or common cathode
- Categorized for luminous intensity
Green and yellow categorized for color

Devices

| HER | Green | AlGaAs Red | Yellow | Description |
|-----------|-----------|------------|-----------|----------------|
| HDSP-G01E | HDSP-G01G | HDSP-G01A | HDSP-G01Y | Common Anode |
| HDSP-G03E | HDSP-G03G | HDSP-G03A | HDSP-G03Y | Common Cathode |

Part Numbering System

5082 - X X X X-X X X X X
HDSP-X X X X-X X X X X

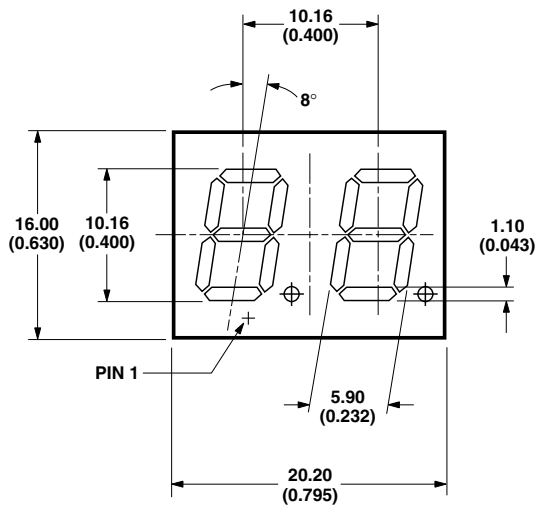


Notes:

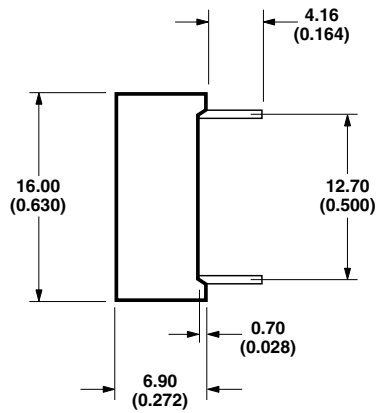
1. For codes not listed in the figure above, please refer to the respective datasheet or contact your nearest Avago representative for details.
2. Bin options refer to shippable bins for a part number. Color and Intensity Bins are typically restricted to 1 bin per tube (exceptions may apply). Please refer to respective datasheet for specific bin limit information.

Package Dimensions

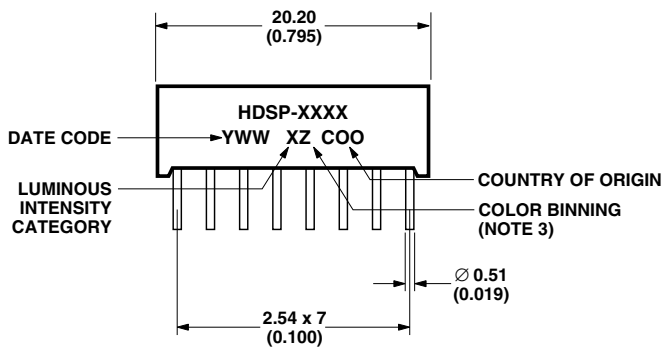
FRONT VIEW



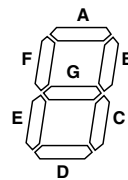
SIDE VIEW



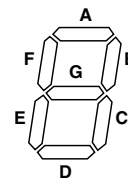
TOP END VIEW



DIG.1



DIG.2

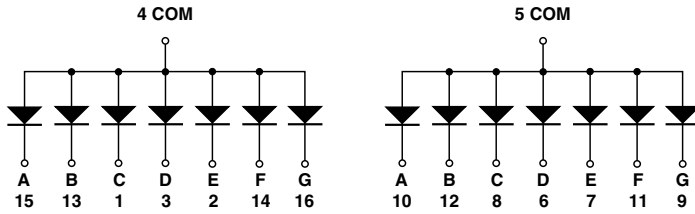


NOTE: DECIMAL POINTS WILL NOT BE LIGHTED UP

DIMENSIONS ARE IN MILLIMETERS (INCHES).

Internal Circuit Diagram

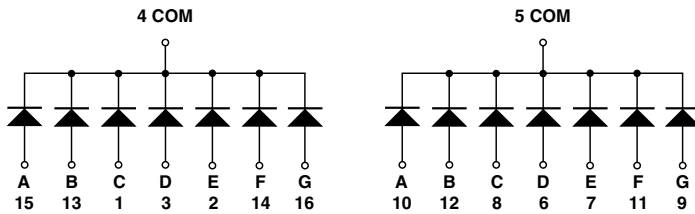
COMMON ANODE



HDSP-G01E/G01G/G01Y/G01A

| PIN No. | CONNECTION |
|---------|------------------------|
| 1 | CATHODE C (DIGIT 1) |
| 2 | CATHODE E (DIGIT 1) |
| 3 | CATHODE D (DIGIT 1) |
| 4 | COMMON ANODE (DIGIT 1) |
| 5 | COMMON ANODE (DIGIT 2) |
| 6 | CATHODE D (DIGIT 2) |
| 7 | CATHODE E (DIGIT 2) |
| 8 | CATHODE C (DIGIT 2) |
| 9 | CATHODE G (DIGIT 2) |
| 10 | CATHODE A (DIGIT 2) |
| 11 | CATHODE F (DIGIT 2) |
| 12 | CATHODE B (DIGIT 2) |
| 13 | CATHODE B (DIGIT 1) |
| 14 | CATHODE F (DIGIT 1) |
| 15 | CATHODE A (DIGIT 1) |
| 16 | CATHODE G (DIGIT 1) |

COMMON CATHODE



HDSP-G03E/G03G/G03Y/G03A

| PIN No. | CONNECTION |
|---------|--------------------------|
| 1 | ANODE C (DIGIT 1) |
| 2 | ANODE E (DIGIT 1) |
| 3 | ANODE D (DIGIT 1) |
| 4 | COMMON CATHODE (DIGIT 1) |
| 5 | COMMON CATHODE (DIGIT 2) |
| 6 | ANODE D (DIGIT 2) |
| 7 | ANODE E (DIGIT 2) |
| 8 | ANODE C (DIGIT 2) |
| 9 | ANODE G (DIGIT 2) |
| 10 | ANODE A (DIGIT 2) |
| 11 | ANODE F (DIGIT 2) |
| 12 | ANODE B (DIGIT 2) |
| 13 | ANODE B (DIGIT 1) |
| 14 | ANODE F (DIGIT 1) |
| 15 | ANODE A (DIGIT 1) |
| 16 | ANODE G (DIGIT 1) |

Absolute Maximum Ratings at $T_A = 25^\circ\text{C}$

| Description | HER HDSP-G0xE | Green HDSP-G0xG | AlGaAs Red HDSP-G0xA | Yellow HDSP-G0xY | Units |
|--|-------------------|--------------------|-------------------------|---------------------|------------------|
| Power Dissipation Segment | 65 | 65 | 30 | 52 | mW |
| Forward Current Segment | 25 ^[1] | 25 ^[2] | 15 ^[3] | 20 ^[4] | mA |
| Peak Forward Current per Segment (1/10 Duty Factor at 10 KHz) | 100 | 100 | 80 | 80 | mA |
| Operating Temperature Range | -35 to +85 | -35 to +85 | -35 to +85 | -35 to +85 | $^\circ\text{C}$ |
| Storage Temperature Range | -35 to +85 | -35 to +85 | -35 to +85 | -35 to +85 | $^\circ\text{C}$ |
| Reverse Voltage per Segment or DP | 5 | 5 | 5 | 5 | V |
| Wave Soldering Temperature for 3 seconds (at 2 mm Distance from the Body) | 250 | 250 | 250 | 250 | $^\circ\text{C}$ |

Notes:

1. Derate above 25°C at $0.33\text{ mA}/^\circ\text{C}$.
2. Derate above 25°C at $0.33\text{ mA}/^\circ\text{C}$.
3. Derate above 25°C at $0.2\text{ mA}/^\circ\text{C}$.
4. Derate above 25°C at $0.27\text{ mA}/^\circ\text{C}$.

Electrical/Optical Characteristics at $T_A = 25^\circ\text{C}$

High Efficiency Red (HER)

| Device HDSP- | Parameter | Symbol | Min. | Typ. | Max. | Units | Test Conditions |
|-----------------|----------------------------|-------------------------|------|------|------|-------|--------------------------|
| G01E G03E | Luminous Intensity/Segment | I_V | | 1.19 | | mcd | $I_F = 5\text{ mA}$ |
| | | | 1.25 | 2.60 | | mcd | $I_F = 10\text{ mA}$ |
| | Forward Voltage | V_F | | 2.05 | 2.40 | V | $I_F = 20\text{ mA}$ |
| | Peak Wavelength | λ_{PEAK} | | 635 | | nm | |
| | Dominant Wavelength | λ_d | | 620 | | nm | |
| | Reverse Voltage | V_R | 5 | | | V | $I_R = 100\ \mu\text{A}$ |

Green

| Device HDSP- | Parameter | Symbol | Min. | Typ. | Max. | Units | Test Conditions |
|-----------------|----------------------------|-------------------------|------|------|------|-------|--------------------------|
| G01G G03G | Luminous Intensity/Segment | I_V | | 3.20 | | mcd | $I_F = 10\text{ mA}$ |
| | | | 1.25 | 2.25 | 2.60 | V | $I_F = 20\text{ mA}$ |
| | Forward Voltage | V_F | | 2.05 | | V | $I_F = 10\text{ mA}$ |
| | Peak Wavelength | λ_{PEAK} | | 568 | | nm | |
| | Dominant Wavelength | λ_d | | 573 | | nm | |
| | Reverse Voltage | V_R | 5 | | | V | $I_R = 100\ \mu\text{A}$ |

AlGaAs Red

| Device HDSP- | Parameter | Symbol | Min. | Typ. | Max. | Units | Test Conditions |
|--------------|----------------------------|-------------------|------|------|------|-------|-------------------------|
| G01A G03A | Luminous Intensity/Segment | I _V | | 3.66 | | mcd | I _F = 5 mA |
| | | | 3.20 | 6.50 | | mcd | I _F = 10 mA |
| | Forward Voltage | V _F | | 1.85 | 2.00 | V | I _F = 20 mA |
| | Peak Wavelength | λ _{PEAK} | | 660 | | nm | |
| | Dominant Wavelength | λ _d | | 643 | | nm | |
| | Reverse Voltage | V _R | 5 | | | V | I _R = 100 μA |

Yellow

| Device HDSP- | Parameter | Symbol | Min. | Typ. | Max. | Units | Test Conditions |
|--------------|----------------------------|-------------------|------|------|------|-------|-------------------------|
| G01Y G03Y | Luminous Intensity/Segment | I _V | | 0.77 | | mcd | I _F = 5 mA |
| | | | 0.80 | 1.50 | | mcd | I _F = 10 mA |
| | Forward Voltage | V _F | | 2.15 | 2.60 | V | I _F = 20 mA |
| | Peak Wavelength | λ _{PEAK} | | 595 | | nm | |
| | Dominant Wavelength | λ _d | | 590 | | nm | |
| | Reverse Voltage | V _R | 5 | | | V | I _R = 100 μA |

Intensity Bin Limits (mcd at 10 mA)

| Bin Name | HER/Green | | Yellow | | AlGaAs Red | |
|----------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | Min. ^[1] | Max. ^[1] | Min. ^[1] | Max. ^[1] | Min. ^[1] | Max. ^[1] |
| G | NA | NA | 0.801 | 1.250 | NA | NA |
| H | 1.251 | 2.000 | 1.251 | 2.000 | NA | NA |
| I | 2.001 | 3.200 | 2.001 | 3.200 | NA | NA |
| J | 3.201 | 5.050 | NA | NA | 3.201 | 5.050 |
| K | NA | NA | NA | NA | 5.051 | 8.000 |
| L | NA | NA | NA | NA | 8.001 | 12.650 |

Note:

1. Tolerance for each bin limit is ± 10%.

Color Bin Limits (nm at 10 mA)

| Color | Bin | Dominant Wavelength (nm) | |
|--------|-----|--------------------------|---------------------|
| | | Min. ^[1] | Max. ^[1] |
| Green | 3 | 569.1 | 571.0 |
| | 4 | 571.1 | 573.0 |
| | 5 | 573.1 | 575.0 |
| Yellow | 1 | 585.5 | 588.5 |
| | 2 | 588.5 | 591.5 |
| | 3 | 591.5 | 594.5 |

Note:

1. Tolerance for each bin limit is 1 nm.

High Efficiency Red (HER)

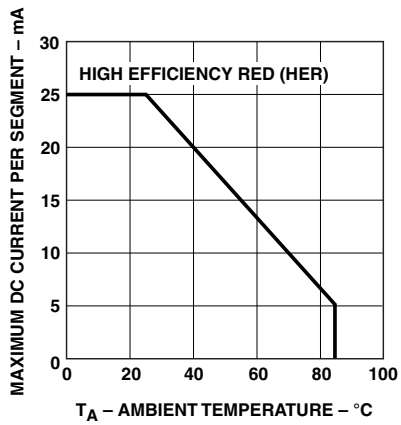


Figure 1. Maximum allowable average or DC current vs. ambient temperature.

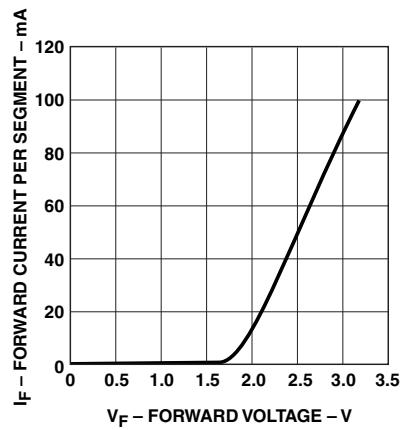


Figure 2. Forward current vs. forward voltage.

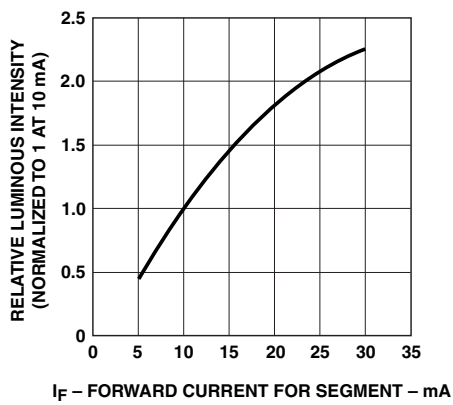


Figure 3. Relative luminous intensity vs. DC forward current.

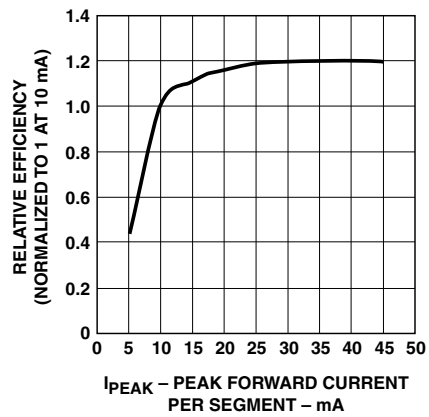


Figure 4. Relative efficiency (luminous intensity per unit current) vs. peak current.

Green

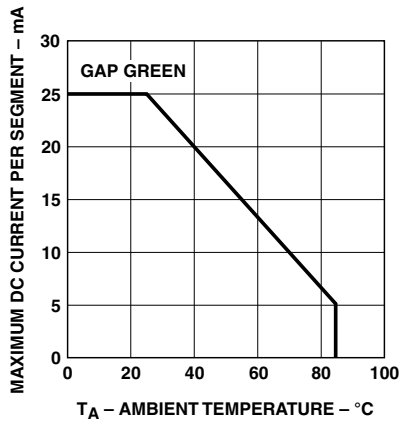


Figure 5. Maximum allowable average or DC current vs. ambient temperature.

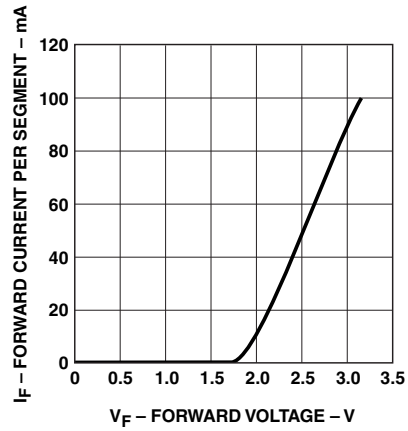


Figure 6. Forward current vs. forward voltage.

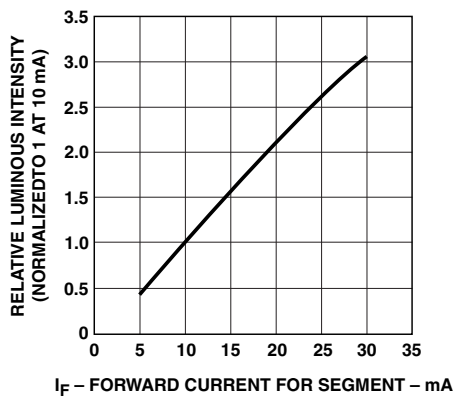


Figure 7. Relative luminous intensity vs. DC forward current.

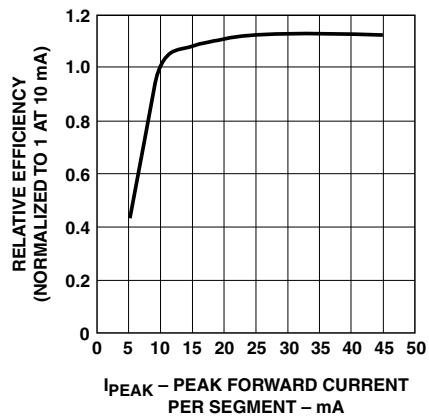


Figure 8. Relative efficiency (luminous intensity per unit current) vs. peak current.

AlGaAs Red

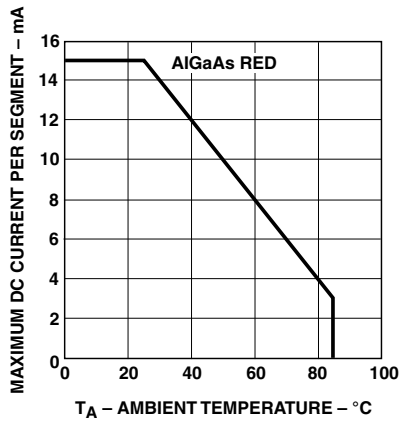


Figure 9. Maximum allowable average or DC current vs. ambient temperature.

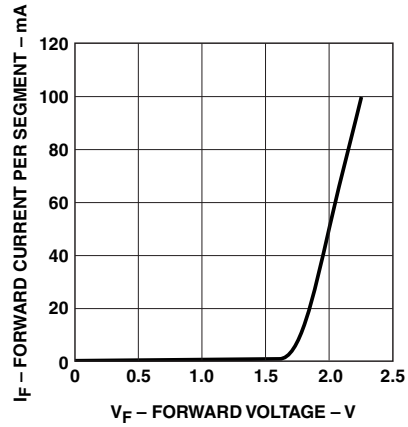


Figure 10. Forward current vs. forward voltage.

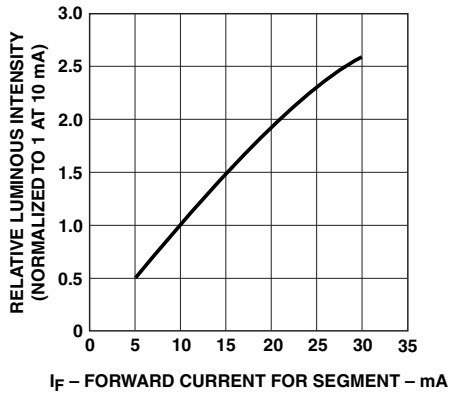


Figure 11. Relative luminous intensity vs. DC forward current.

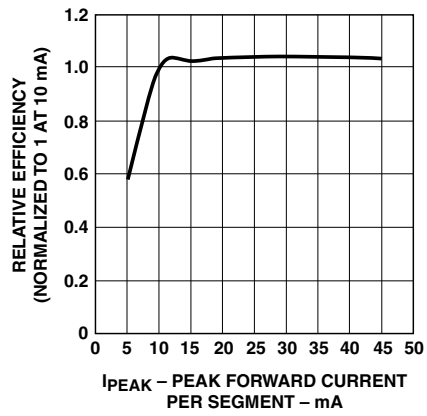


Figure 12. Relative efficiency (luminous intensity per unit current) vs. peak current.

Yellow

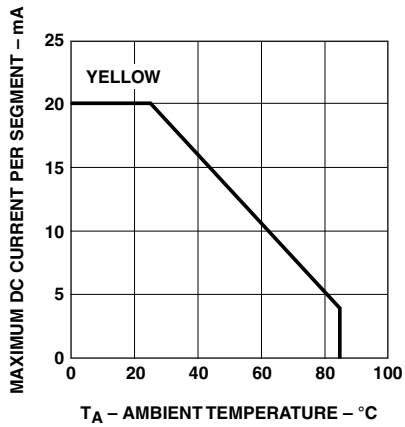


Figure 13. Maximum allowable average or DC current vs. ambient temperature.

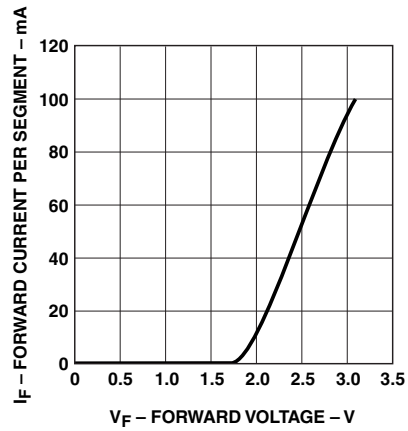


Figure 14. Forward current vs. forward voltage.

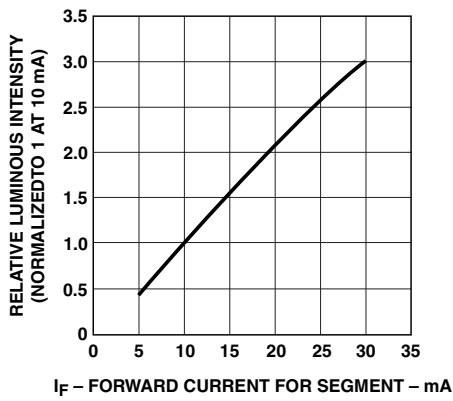


Figure 15. Relative luminous intensity vs. DC forward current.

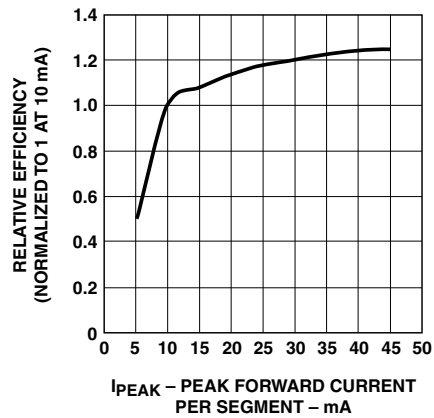


Figure 16. Relative efficiency (luminous intensity per unit current) vs. peak current.

For product information and a complete list of distributors, please go to our web site: www.avagotech.com

Avago, Avago Technologies, and the A logo are trademarks of Avago Technologies in the United States and other countries. Data subject to change. Copyright © 2005-2012 Avago Technologies. All rights reserved. Obsoletes 5989-3314EN AV02-3641EN - June 20, 2012

AVAGO
TECHNOLOGIES



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.