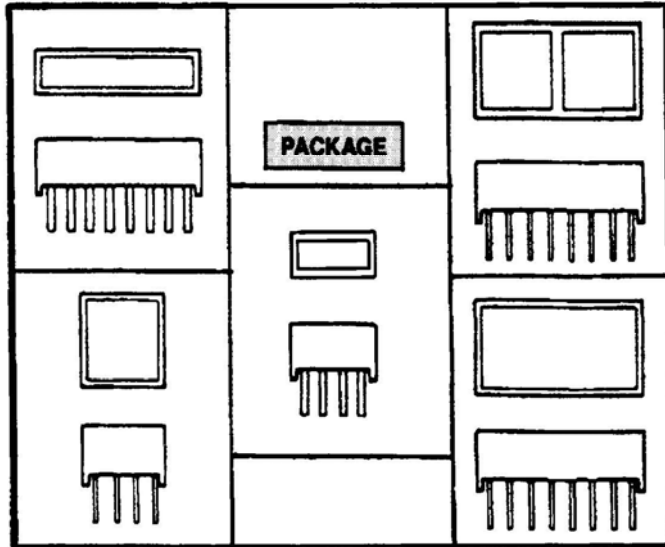


HIGH EFFICIENCY RED HLMP-2300/2600 SERIES YELLOW HLMP-2400/2700 SERIES HIGH EFFICIENCY GREEN HLMP-2500/2800 SERIES



DESCRIPTION

These LED Light Bar series are bright, large emitting area, rectangular devices that are designed for backlighting legend/message annunciators.

These devices are offered in single-in-line and dual-in-line packages that contain single or segmented light-emitting area. Each package style is offered in High Efficiency Red, Yellow, or Green emission color.

FEATURES

- Large area, uniform, bright light-emitting surfaces
- Select from six package styles
- Choice of three colors
- Categorized for intensity and color
- X-Y stackable
- Easily driven with I.C.s
- Alternate source for popular backlighting components

MODEL NUMBERS

| PART NO. | COLOR | DESCRIPTION | | PACKAGE | PIN OUT |
|-------------------------------------|--|--|--|---------|---------|
| HLMP-2300 HLMP-2400 HLMP-2500 | High Efficiency Red Yellow High Efficiency Green | 2 LED Single-in-line 0.35 in. x 0.15 in. Area | | A | A |
| HLMP-2350 HLMP-2450 HLMP-2550 | High Efficiency Red Yellow High Efficiency Green | 4 LED Single-in-line 0.75 in. x 0.15 in. Area | | B | B |
| HLMP-2655 HLMP-2755 HLMP-2855 | High Efficiency Red Yellow High Efficiency Green | 4 LED Dual-in-line 0.35 in. x 0.35 in. Area | | C | C |
| HLMP-2670 HLMP-2770 HLMP-2870 | High Efficiency Red Yellow High Efficiency Green | Dual 0.35 in. x 0.35 in. Area Dual-in-line package | | D | D |
| HLMP-2685 HLMP-2785 HLMP-2885 | High Efficiency Red Yellow High Efficiency Green | 8 LED 0.35 in. x 0.75 in. Area Dual-in-line package | | E | D |

| ELECTRO-OPTICAL CHARACTERISTICS (T_A=25°C) | | | | | | | | | |
|---|--------|-----------------|-------|-------|-------|-------|------|-------------------|------------------------------------|
| HIGH EFFICIENCY RED | | | | | | | | | |
| PARAMETER | SYMBOL | HLMP | | | | | UNIT | TEST CONDITIONS | |
| | | -2300 | -2350 | -2655 | -2670 | -2685 | | | |
| Luminous Intensity | min. | | 6.0 | 13 | 13 | 13 | 22 | mcd | I _F =20 mA |
| | typ. | I _V | 23 | 45 | 43 | 45 | 80 | mcd | I _F =20 mA |
| | typ. | | 30 | 50 | 50 | 50 | 100 | mcd | I _F =60 mA pK, 1:3 D.F. |
| Forward voltage | max. | V _F | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | V | I _F =20 mA |
| | typ. | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | |
| Peak wavelength | typ. | λ _p | 630 | 630 | 630 | 630 | 630 | nm | |
| Dominant wavelength | typ. | λ _d | 626 | 626 | 626 | 626 | 626 | nm | |
| Capacitance | typ. | C | 45 | 45 | 45 | 45 | 45 | pF | V _F =0, f=1 MHz |
| Reverse voltage | min. | V _R | 6 | 6 | 6 | 6 | 6 | V | I _R =100 μA |
| Thermal resistance | typ. | θ _{JL} | 150 | 150 | 150 | 150 | 150 | °C/W/ LED chip | |

| ELECTRO-OPTICAL CHARACTERISTICS (T_A=25°C) | | | | | | | | | |
|---|--------|-----------------|-------|-------|-------|-------|------|-------------------|------------------------------------|
| YELLOW | | | | | | | | | |
| PARAMETER | SYMBOL | HLMP | | | | | UNIT | TEST CONDITIONS | |
| | | -2400 | -2450 | -2755 | -2770 | -2785 | | | |
| Luminous Intensity | min. | | 6 | 13 | 13 | 13 | 26 | mcd | I _F =20 mA |
| | typ. | I _V | 20 | 38 | 35 | 35 | 70 | mcd | I _F =20 mA |
| | typ. | | 33 | 60 | 60 | 60 | 115 | mcd | I _F =60 mA pK, 1:3 D.F. |
| Forward voltage | max. | V _F | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | V | I _F =20 mA |
| | typ. | | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | | |
| Peak wavelength | typ. | λ _p | 585 | 585 | 585 | 585 | 585 | nm | |
| Dominant wavelength | typ. | λ _d | 588 | 588 | 588 | 588 | 588 | nm | |
| Capacitance | typ. | C | 35 | 35 | 35 | 35 | 35 | pF | V _F =0, f=1 MHz |
| Reverse voltage | min. | V _R | 6 | 6 | 6 | 6 | 6 | V | I _R =100 μA |
| Thermal resistance | typ. | θ _{JL} | 150 | 150 | 150 | 150 | 150 | °C/W/ LED chip | |

| ELECTRO-OPTICAL CHARACTERISTICS (T_A=25°C) | | | | | | | | | |
|---|--------|-----------------|-------|-------|-------|-------|------|-------------------|------------------------------------|
| HIGH EFFICIENCY GREEN | | | | | | | | | |
| PARAMETER | SYMBOL | HLMP | | | | | UNIT | TEST CONDITIONS | |
| | | -2500 | -2550 | -2855 | -2870 | -2885 | | | |
| Luminous Intensity | min. | | 5 | 11 | 11 | 11 | 22 | mcd | I _F =20 mA |
| | typ. | I _V | 25 | 50 | 50 | 50 | 100 | mcd | I _F =20 mA |
| | typ. | | 38 | 75 | 75 | 75 | 150 | mcd | I _F =60 mA pK, 1:3 D.F. |
| Forward voltage | max. | V _F | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | V | I _F =20 mA |
| | typ. | | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | | |
| Peak wavelength | typ. | λ _p | 565 | 565 | 565 | 565 | 565 | nm | |
| Dominant wavelength | typ. | λ _d | 567 | 567 | 567 | 567 | 567 | nm | |
| Capacitance | typ. | C | 40 | 40 | 40 | 40 | 40 | pF | V _F =0, f=1 MHz |
| Reverse voltage | min. | V _R | 6 | 6 | 6 | 6 | 6 | V | I _R =100 μA |
| Thermal resistance | typ. | θ _{JL} | 150 | 150 | 150 | 150 | 150 | °C/W/ LED chip | |

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES

(25°C Free Air Temperature Unless Otherwise Specified)

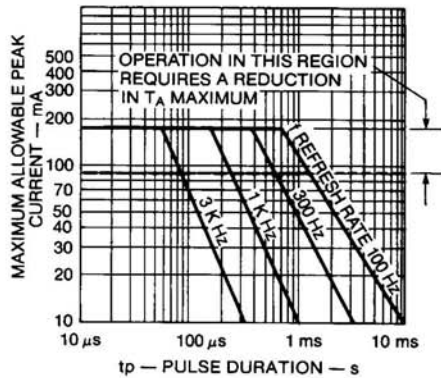


Fig. 1. Maximum Tolerable Peak Current per LED Chip vs. Pulse Duration for HLMP-23X0/-26XX/-25X0/-28XX

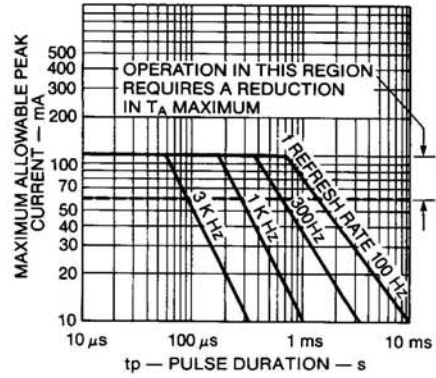


Fig. 2. Maximum Tolerable Peak Current per LED Chip vs. Pulse Duration for HLMP-24X0/-27XX Devices

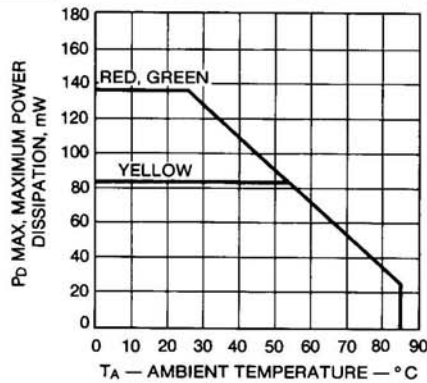


Fig. 3. Maximum Power Dissipation per LED vs. Ambient Temperature

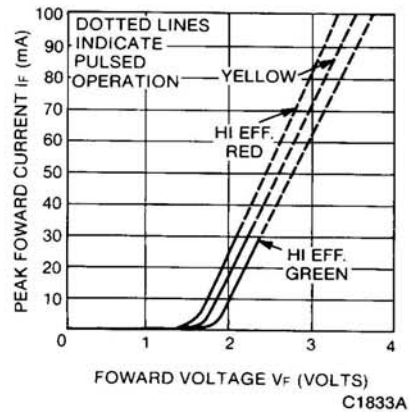


Fig. 4. Forward Current vs. Forward Voltage

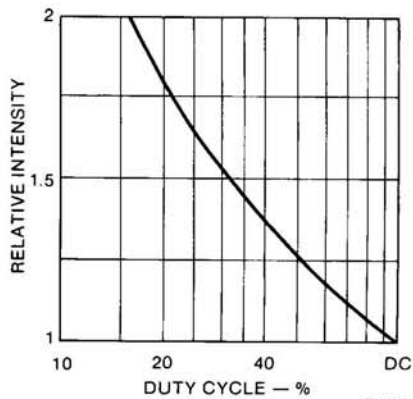


Fig. 5. Luminous Intensity vs. Duty Cycle

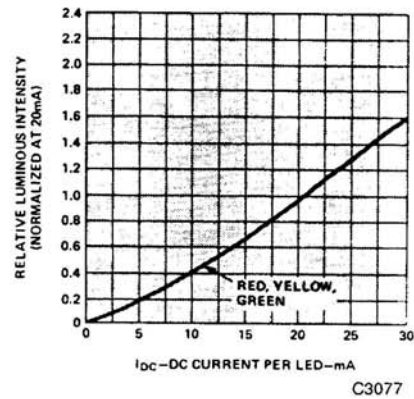


Fig. 6. Luminous Intensity vs. Forward Current



LED LIGHT BARS

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES
(25°C Free Air Temperature Unless Otherwise Specified) (Cont'd)

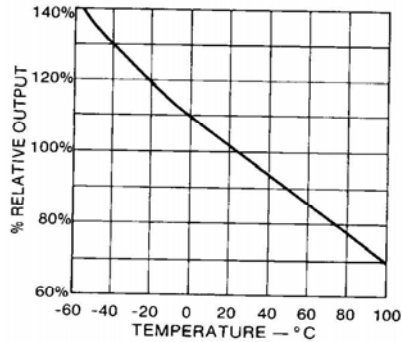
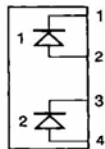


Fig. 7. Output vs. Temperature C654B

PIN CONNECTIONS TO ELECTRICAL SCHEMATIC

| PIN | ELECTRICAL CONNECTION | | | |
|-----|-----------------------|-----------|-----------|-----------------|
| | HLMP-2X00 | HLMP-2X50 | HLMP-2X55 | HLMP-2X70/-2X85 |
| 1 | 1 Cathode | 1 Cathode | 1 Cathode | 1 Cathode |
| 2 | 1 Anode | 1 Anode | 1 Anode | 1 Anode |
| 3 | 2 Cathode | 2 Cathode | 2 Cathode | 2 Cathode |
| 4 | 2 Anode | 2 Anode | 2 Anode | 2 Anode |
| 5 | | 3 Cathode | 3 Cathode | 3 Cathode |
| 6 | | 3 Anode | 3 Anode | 3 Anode |
| 7 | | 4 Cathode | 4 Anode | 4 Anode |
| 8 | | 4 Anode | 4 Cathode | 4 Cathode |
| 9 | | | | 5 Cathode |
| 10 | | | | 5 Anode |
| 11 | | | | 6 Anode |
| 12 | | | | 6 Cathode |
| 13 | | | | 7 Cathode |
| 14 | | | | 7 Anode |
| 15 | | | | 8 Anode |
| 16 | | | | 8 Cathode |

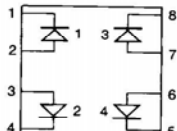
ELECTRICAL SCHEMATIC



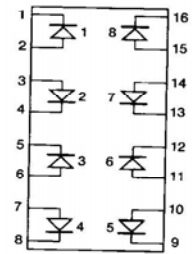
A
HLMP-2X00



B
HLMP-2X50



C
HLMP-2X55



D
HLMP-2X70

C2016



LED LIGHT BARS

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