



25.4mm (1.0") 7 Segment Display

- TOS-1101X Single Digit
- TOS-1102X Single Digit
- TOS-1103X Single Digit
- TOS-1106X Single Digit
- TOS-1107X Single Digit
- TOD-10201X Dual Digit

Features

- * (1.0") 25.4mm DIGIT HEIGHT
- * CONTINUOUS UNIFORM SEGMENTS
- * LOW POWER REQUIREMENT
- * EXCELLENT CHARACTER APPEARANCE
- * HIGH BRIGHTNESS & HIGH CONTRAST
- * WIDE VIEWING ANGLE
- * SOLID STATE RELIABILITY
- * RoHS COMPLIANT
- * Pb FREE
- * GRAY/BLACK FACE AVAILABLE



Absolute Maximum Rating

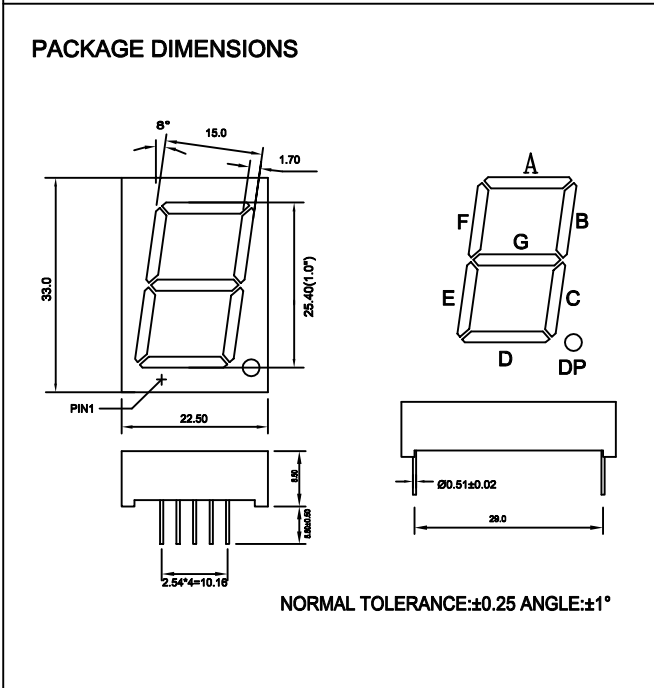
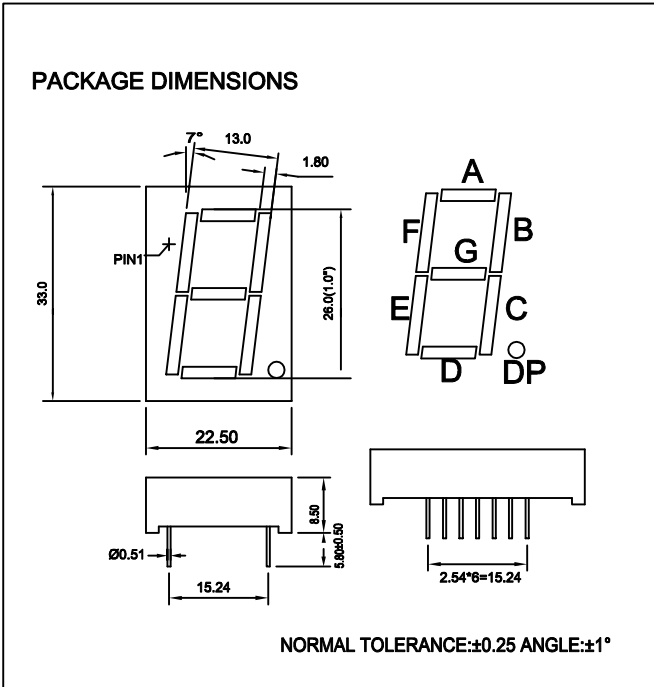
| Series | Emitting color | Pd (mW) | If (mA) | IFP (mA) | VR (V) | Top (°C) | Tst (°C) | Tsol*2 (°C) | VF | | | λ d | IV | |
|--------|----------------|---------|---------|----------|--------|-----------------|-----------------|-------------|---------|---------|---------|----------|---------|-----------|
| | | | | | | | | | IF (mA) | typ (V) | max (V) | typ (nm) | IF (mA) | typ (ucd) |
| 1.0" | MR | 60 | 25 | 80 | 5 | -25 ~ +85 | -30 ~ +85 | 260/3Sec | 20 | 2.0 | 2.3 | 630 | 10 | 32907 |
| | MG | 60 | 25 | | | | | | 20 | 2.0 | 2.3 | 572 | 10 | 32907 |
| | MY | 60 | 25 | | | | | | 20 | 2.0 | 2.3 | 592 | 10 | 32907 |
| | MA | 60 | 25 | | | | | | 20 | 2.0 | 2.3 | 605 | 10 | 32907 |

*1. Condition for IFP is pulse of 1 / 10 duty and 0.1 msec width.

*2. Pb Free Process.

*3. In the absence of confirmation by device specification sheets, OASIS takes no responsibility for any defects that may occur in equipment using any OASIS devices shown in catalogs, data books, etc. Contact OASIS in order to obtain the latest device specification sheets before using any OASIS devices.

*4. Specifications are subject to change without notice for improvement.





PACKAGE DIMENSIONS

INTERNAL CIRCUIT DIAGRAM

NORMAL TOLERANCE:±0.25 ANGLE:±1°

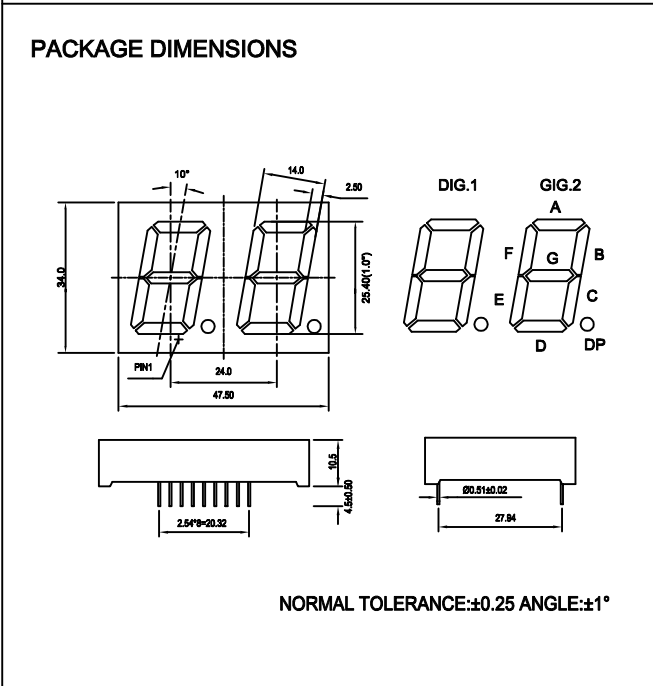
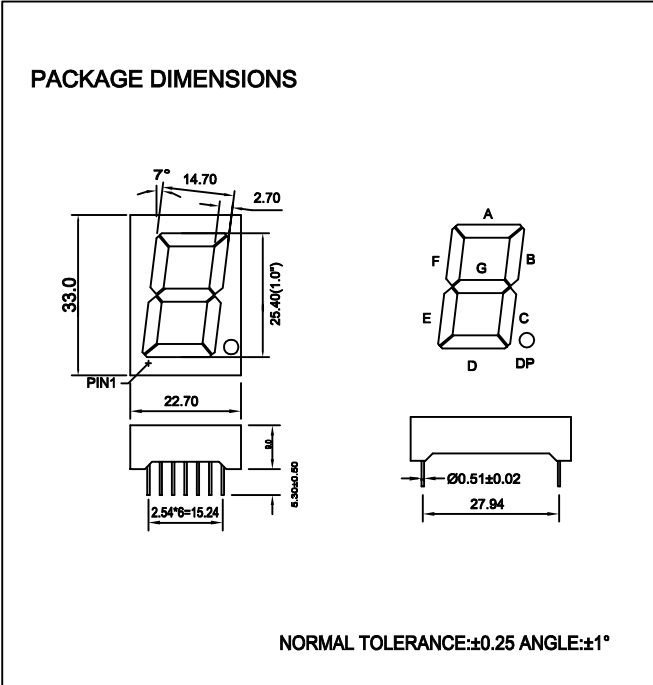
PACKAGE DIMENSIONS

INTERNAL CIRCUIT DIAGRAM

NORMAL TOLERANCE:±0.25 ANGLE:±1°

INTERNAL CIRCUIT DIAGRAM

INTERNAL CIRCUIT DIAGRAM





Chip Material

MR(Ultra-Red): AlGaInP/GaAs

MRL(Ultra-Red): AlGaInP/GaAs

MG(Ultra-Green): AlGaInP/GaAs

ABSOLUTE MAXIMUM RATING :(TA=25°C)

| SYMBOL | PARAMETER | VALUE | UNITS |
|--|--|------------------|-------|
| P _d | Power Dissipation Per Segment | 70 | mW |
| I _{FP} | Peak Forward Current Per Segment (1/10 Duty Cycle, 0.1ms Pulse Width) | 80 | mA |
| I _{FM} | Continuous Forward Current Per Segment | 25 | mA |
| T _{OP} | Reverse Voltage Per Segment | 5 | V |
| T _{ST} | Operating Temperature Range | -25 to +85 | °C |
| V _R | Storage Temperature Range | -30 to +85 | °C |
| Lead Solder Temperature(1/16 Inch Below Seating Plane) | | 260°C for 3 sec. | |

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Chip Material

MR(Ultra-Red): AlGaInP/GaAs

MRL(Ultra-Red): AlGaInP/GaAs

MG(Ultra-Green): AlGaInP/GaAs

ELECTRICAL/OPTICAL CHARACTERISTICS AT TA=25°C

| SYMBOL | PARAMETER | TEST CONDITION | MIN. | TYP. | MAX. | UNITS |
|----------------|----------------------------------|----------------------|---------------|-------|------|-------|
| Iv | Luminous Intensity Per Segment | I _F =10mA | MA | 32907 | | μcd |
| | | | ME | 32907 | | μcd |
| | | | MY | 32907 | | μcd |
| | | | MG | 32907 | | μcd |
| | | | MR | 32907 | | μcd |
| | | | MRL | 32907 | | μcd |
| λ ^d | Domiant Emission Wavelength | I _F =20mA | MA | 605 | | nm |
| | | | ME | 615 | | nm |
| | | | MY | 590 | | nm |
| | | | MG | 572 | | nm |
| | | | MR | 630 | | nm |
| | | | MRL | 640 | | nm |
| Δλ | Spectral Line Half-Width | I _F =20mA | MRL,MR, MG,MY | 15 | | nm |
| | | | MA | 17 | | nm |
| | | | ME | 18 | | nm |
| V F | Forward Voltage Per Segment | I _F =20mA | 1.8 | 2.0 | 2.3 | V |
| I R | Reverse Current Per Segment | V _R =5V | | 50 | | μA |
| Iv-m | Luminous Intensity Matching Rate | I _F =20mA | | 2.0:1 | | |

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TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

Remark:

| | | | | | | |
|----------------|-----------|-----------|-------------|-------------|--------------|--------------|
| Dice code | ①MR | ②MRL | ③MG | ④MA | ⑤MY | ⑥ME |
| Lighting color | Ultra-Red | Ultra-Red | Ultra-Green | Ultra-Amber | Ultra-Yellow | Ultra-Orange |

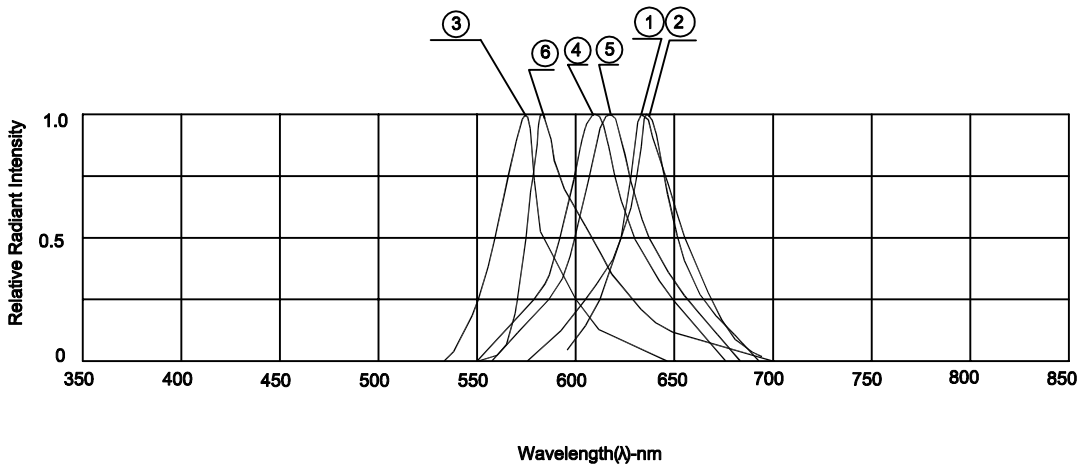


Fig1.RELATIVE INTENSITY VS. WAVELENGTH



TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

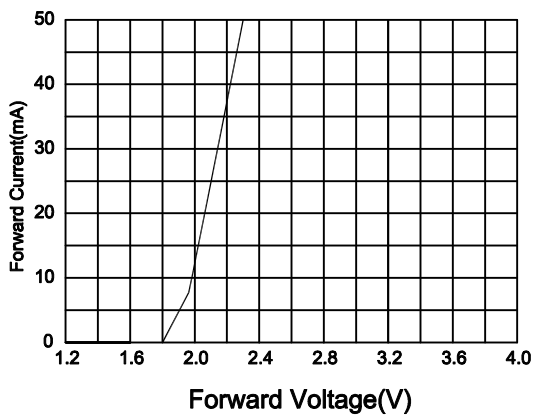


Fig2. FORWARD CURRENT VS. FORWARD VOLTAGE

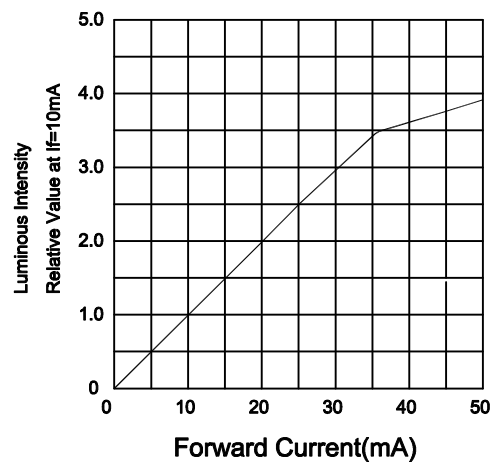


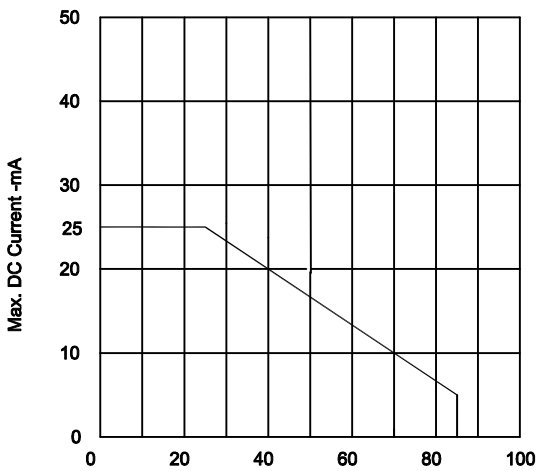
Fig3. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

Remark:

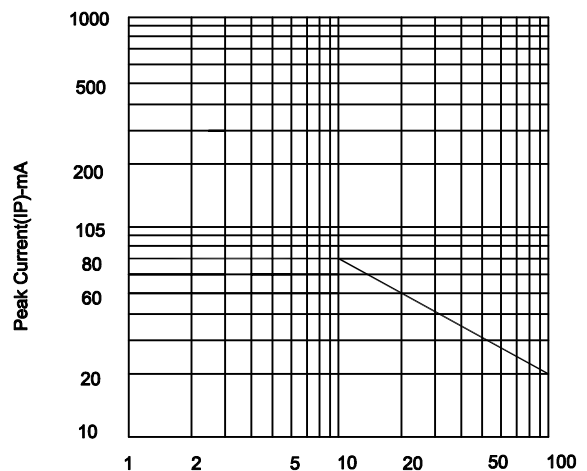
| | | | | | | |
|----------------|-----------|-----------|-------------|-------------|--------------|--------------|
| Dice code | ① MR | ② MRL | ③ MG | ④ MA | ⑤ MY | ⑥ ME |
| Lighting color | Ultra-Red | Ultra-Red | Ultra-Green | Ultra-Amber | Ultra-Yellow | Ultra-Orange |



TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES



Ambient Temperature TA (°C)
Fig4 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE.



Duty Cycle %
Fig5. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

Remark:

| | | | | | | |
|----------------|-----------|-----------|-------------|-------------|--------------|--------------|
| Dice code | ① MR | ② MRL | ③ MG | ④ MA | ⑤ MY | ⑥ ME |
| Lighting color | Ultra-Red | Ultra-Red | Ultra-Green | Ultra-Amber | Ultra-Yellow | Ultra-Orange |