

DSM Series Ultra Thin Surface Mount Single Digit 7-Segment LED Display

DSM7UA56101 - 0.56" (14.22mm) Digit Height

Emitting Color: Red (AlGaInP/GaAs)

Applications

- People Movers
- Home Appliances
- Medical Devices
- Industrial Devices
- Automation and Controls
- Light Control

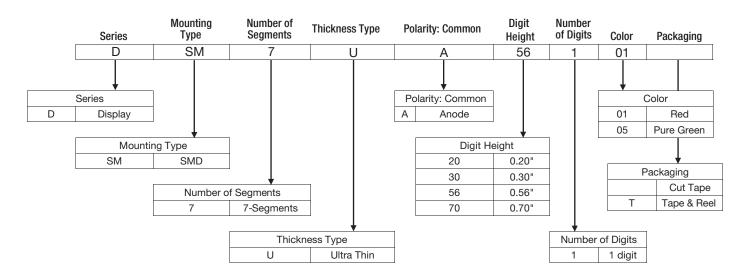
- IoT
- Transportation
- Food Service Appliances

Key Features

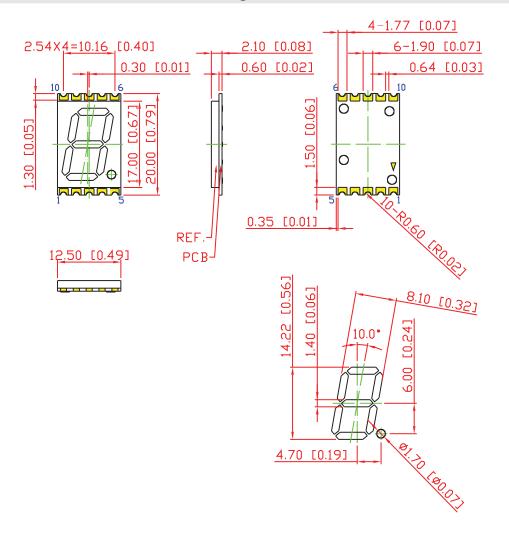
- 1-digit seven segment led numeric display
- Outer dimensions: 20.0 x 12.50 x 2.1mm
- Reduce overall thickness of PCB, with major cost savings
- · Available in 4 different digit heights and widths
- Excellent character appearance, with high light output
- Super bright red chip
- Made from AlGaInP on transparent GaAs substrate
- Made of white segments and gray surface
- Also available in pure green
- Available in cut tape or automation-friendly tape and reel

- Exclusive patented technology
- Low current operation and lower power consumption
- Polarity: common anode
- Available for reverse mounting configuration
- Side by side mounting allows space saving
- Easy mounting on PC boards or sockets
- Moisture Sensitive Level (MSL): 2a
- Life expectancy: 100,000 hours
- Technically and mechanically rugged
- Quality tested with the highest industry standard

Ordering Data

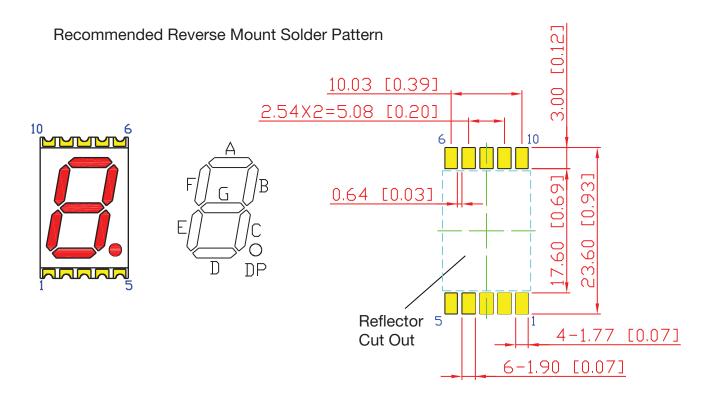


Dimensions and Internal Circuit Diagram



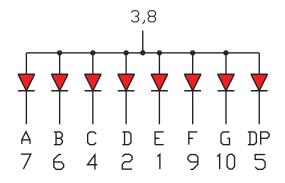
 $\label{eq:Dimensions} \mbox{Dimensions in millimeters [inches]} \\ \mbox{Tolerance is $\pm 0.25 mm [.01"] unless othewise noted}$

Dimensions and Internal Circuit Diagram



 $\label{eq:Dimensions} \mbox{Dimensions in millimeters [inches]} \\ \mbox{Tolerance is $\pm 0.25 mm [.01"] unless otherwise noted}$

Pin Connections (Common Anode)



| Connection |
|--------------|
| CATHODE E |
| CATHODE D |
| COMMON ANODE |
| CATHODE C |
| CATHODE DP |
| CATHODE B |
| CATHODE A |
| COMMON ANODE |
| CATHODE F |
| CATHODE G |
| |

Product Specifications

Absolute Maximum Rating at Ta=25°C / 77°F (Ta= Ambient Temperature)

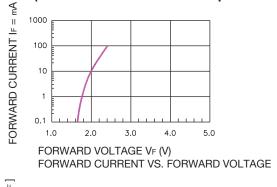
| Parameter | Symbol | Symbol Maximum Rating | |
|--------------------------------------|--------------------|----------------------------|------------|
| Power dissipation | P _{AD} 70 | | mW |
| Derating liner from 25°C/77°F | - | 0.28/9.46 | mA °C / °F |
| Continuous forward current | I _{AF} | 25 | mA |
| Peak current (duty cycle 1/10, 1kHz) | I _{PF} | 90 | mA |
| Reverse voltage | V_R | 5 | V |
| Operating temperature | T _{OPR} | -40 TO +105 -40 TO +221 | °C °F |
| Storage temperature | T _{STG} | -40 TO +105 -40 TO +221 | °C °F |

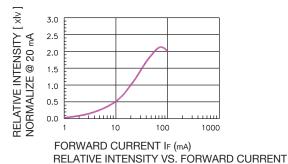
Electrical - Optical Characteristics at Ta=25°C / 77°F (Ta= Ambient Temperature)

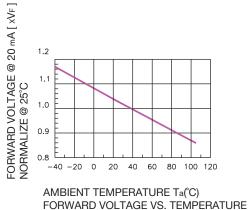
| Charateristic | Symbol | Condition | Min. | Тур. | Max. | Unit |
|------------------------------|----------------|----------------------|------|------|------|------|
| Forward Voltage, (Per Dice) | V _F | I _F =20mA | - | 2.0 | 2.6 | V |
| Reverse Current, (Per Dice) | I _R | V _R =5V | - | - | 10 | μΑ |
| Peak Wavelength | λρ | I _F =20mA | - | 632 | - | nm |
| Dominant Wavelength | λ_{D} | I _F =20mA | 619 | - | 629 | nm |
| Luminous Intensity | I _V | I _F =20mA | 10 | - | 40 | mcd |
| Spectral radiation bandwidth | Δλ | I _F =20mA | - | 20 | - | nm |

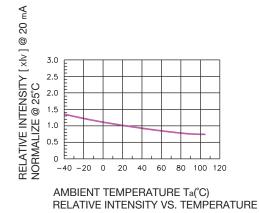
Product Specifications

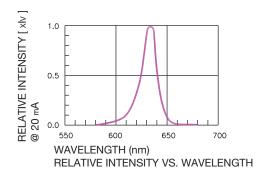
Typical Electro-optical Characteristic Curves (25°C / 77°F Free Air Temperature Unless Otherwise Specified)

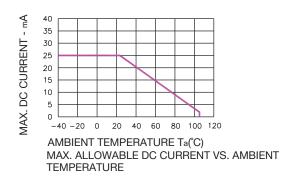






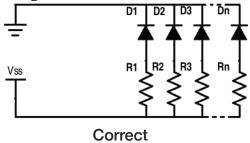


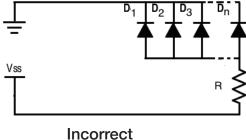




Circuit Design Notes

- Always use current limit resistors when necessary
- LEDs could be electrically connected in parallel, with each LED having its own current limiting resistor





engineered to light up your design

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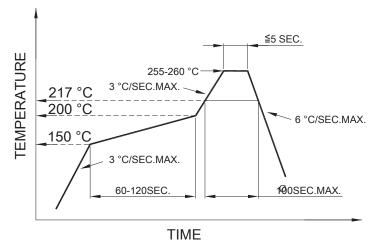
1.800.522.5546

Recommended Reflow Soldering Profile

SMT Reflow Soldering Instructions

SMT Soldering Profile

Pb free reflow soldering Profile



- We recommend the reflow temperature 245°C / 473°F (+/- 5°C / 41°F.)
 The maximum soldering temperature should be limited to 260°C / 500°F.
- · Number of reflow process shall be 2 time or less.

Soldering Iron

Basic spec is \leq 4 sec when 260°C / 500°F. If temperature is higher, time should be shorter (+10°C / 50°F \rightarrow 1 sec). Power dissipation of Iron should be smaller than 15W, and temperature should be controllable. Surface temperature of the device should be under 230°C /446°F.

Rework

- Customer must finish rework within 3 sec. under 350°C / 662°F.
- The head of soldering iron cannot touch copper foil.

Storage Condition

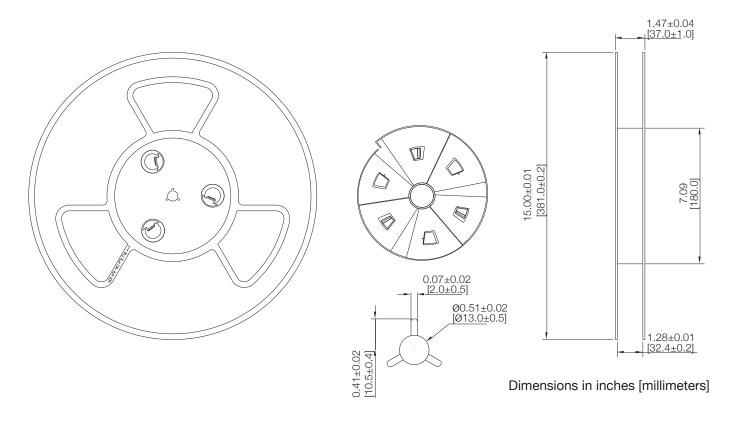
In factory original sealed bag package

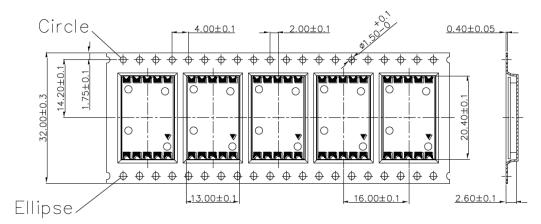
| TEMPERATURE CONDITION | HUMIDITY CONDITION |
|-----------------------|--------------------|
| 5°C ~ 30°C | Below 60%RH |

After opened and not in factory original sealed bag package

| TEMPERATURE CONDITION | HUMIDITY CONDITION | STORAGE TIME |
|-----------------------|--------------------|----------------------------------|
| 5°C ~ 30°C | Below 60%RH | Within 4 weeks (MSL as level 2a) |

Tape & Reel Dimensions





1300PCS / 1 REEL

Dimensions in millimeters

Compliance and Approvals







