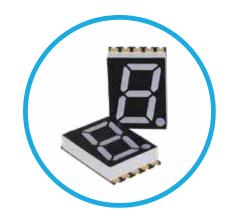


# **DSM7T Series** Thin Surface Mount Single Digit 7-Segment LED Numeric Display



DSM7TA28101T - 0.28" (7.11mm) Digit Height

Emitting Color: Red (AlGaInP)













## **Application**

- People Movers
- Home Appliances
- Medical Devices

- Industrial Devices
- Automation and Controls
- Light Control

- IoT
- Transportation
- Food Service Appliances

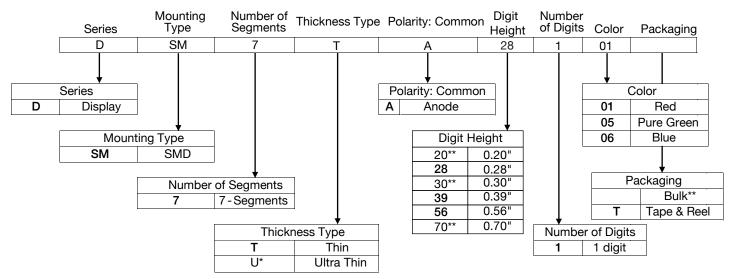
# Key features

- •1-digit seven segment led numeric display
- Includes a decimal point (DP), useful when two or more seven-segment displays are connected to each other to display decimals
- · White segments and gray surface
- Substrate: AlGaInP/GaAs
- Outer dimensions: 12.0 x 7.40 x 4.00mm
- High light output
- Excellent character appearance
- Quality tested with the highest industry standard
- Side by side mounting allows space saving
- Provides the ability to reduce overall thickness of PCB, with major cost savings

- Available in 3 different digit heights and widths
- Automation-friendly tape and reel
- Technically and mechanically rugged
- Small and light, easy assembly
- Life expectancy: up to 50,000 hours
- Lower power consumption
- Allow top mount and reverse mount design
- Mechanically rugged
- · Moisture Sensitive Level (MSL): 2a
- Available in blue, red and pure green
- Polarity: common anode
- Easy mounting on PC boards or sockets
- Low current operation
- Degree of protection IP50 (Dust-Protected)



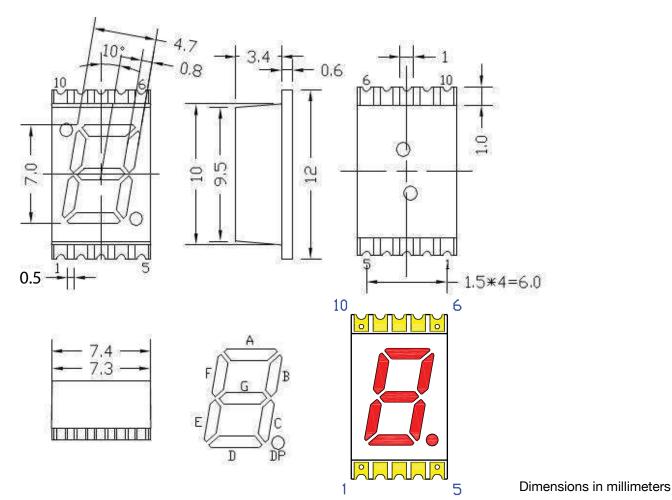
### **Ordering Data**



\*Please refer to DSM7U product datasheet for Ultra Thin Version

\*\*Only available for DSM7U Version

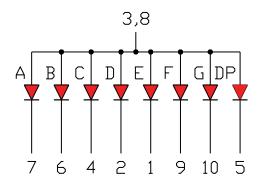
## Dimensions and Internal Circuit Diagram



Tolerance is ±0.25mm unless otherwise noted

# Internal Circuit Diagram

# Pin Connections (Common Anode)



PIN No	Connection
1	CATHODE E
2	CATHODE D
3	COMMON ANODE
4	CATHODE C
5	CATHODE DP
6	CATHODE B
7	CATHODE A
8	<b>COMMON ANODE</b>
9	CATHODE F
10	CATHODE G

# **Product Specifications**

### Absolute Maximum Ratings while Ta=25°C

Parameter	Minimum (m)	Maximum (M)	Unit
Forward Current I <sub>F</sub> /Seg		20	mA
Reverse Voltage V <sub>R</sub> /Seg		5	V
Operating Temperature T <sub>OPR</sub>	-30	+85	°C
Storage Temperature T <sub>STG</sub>	-40	+100	°C
Peak Current I <sub>FM</sub> /Seg		60	mA

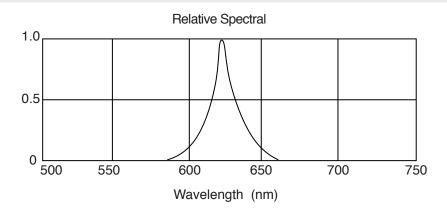
(Notice: 1/10th duty cycle, 0.1ms pulse width)

### Electrical-Optical Characteristics while Ta=25°C

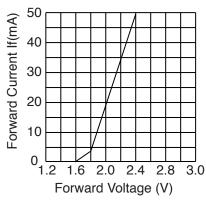
Parameter	Condition	Unit	Minimum	Typical	Maximum
Forward Voltage V <sub>F</sub> /Seg	IF=20mA	V	1.7	2.0	2.4
Reverse Current I <sub>R</sub> /Seg	VR=5V	μΑ			50
Wavelength λP	IF=20mA	nm	620	625	630
Full Width at Half	IF=20mA	nm		30	
Maximum Δλ					
Luminosity I <sub>v</sub> /Seg	IF=20mA	mcd	50	90	120
Viewing angle	wide viewing angle				

## **Product Specifications**

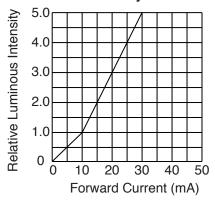
Relative Luminous Intensity @ 20mA



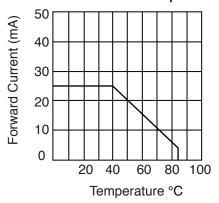
#### Forward Current vs. Forward Voltage



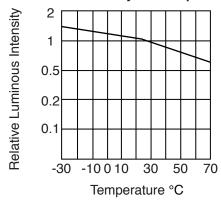
**Relative Luminous Intensity vs. Forward current** 



#### **Forward Current Vs. Temperature**

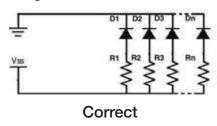


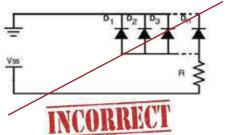
#### **Luminous Intensity vs. Temperature**



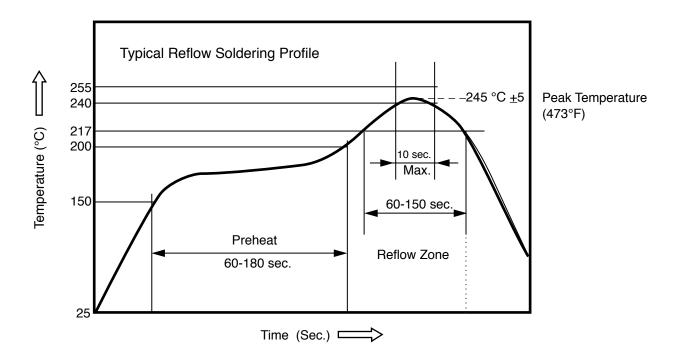
# Circuit Design Notes

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









Profile Feature	Typical Parameters		
Preheat Temperature Min	150 °C (302°F)		
Preheat Temperature Max	200 °C (392°F)		
Preheat Time	60 -180 sec.		
Reflow StartingTemperature	217 °C (423°F)		
Time Spent During Reflow	60 -150 sec.		
Reflow Peak Temperature	245 °C (473°F)		

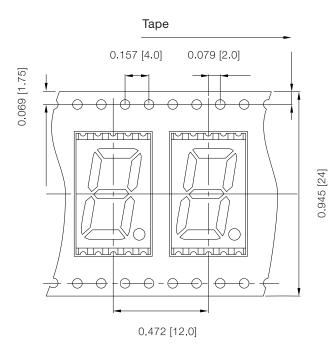
- · Manual soldering is suggested
  - Use soldering irons of which power is less than 30 Watt.
  - Keep the temperature of soldering irons below 360 °C
  - Only one soldering is allowed on each bonding pad.
  - The maximum time from when a soldering iron comes into contact with the parts that are to be connected until the joint is finished should not exceed three seconds.
  - Perform other procedures after the soldered pad cools down.
- Suggested storage conditions: 25°C +/-10°C (77°F +/-50°F), relative humidity 65% RH +/- 20% RH.

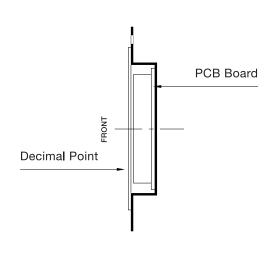


# Tape and Reel Dimensions

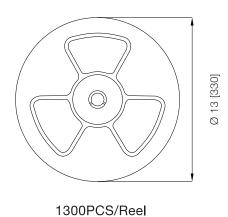
#### Carrier band

Electrostatic Discharge (ESD) Package Anti Static Bags Aluminium Moisture Barrier Bag.

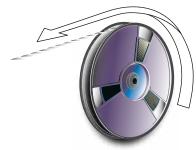




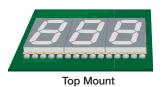
## **Reel Dimensions**



Direction of the feed



Allow top mount or reverse mount design





Dimensions in inches [millimeters]

## Compliances and Approvals









