

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

0.28" (7.11mm)



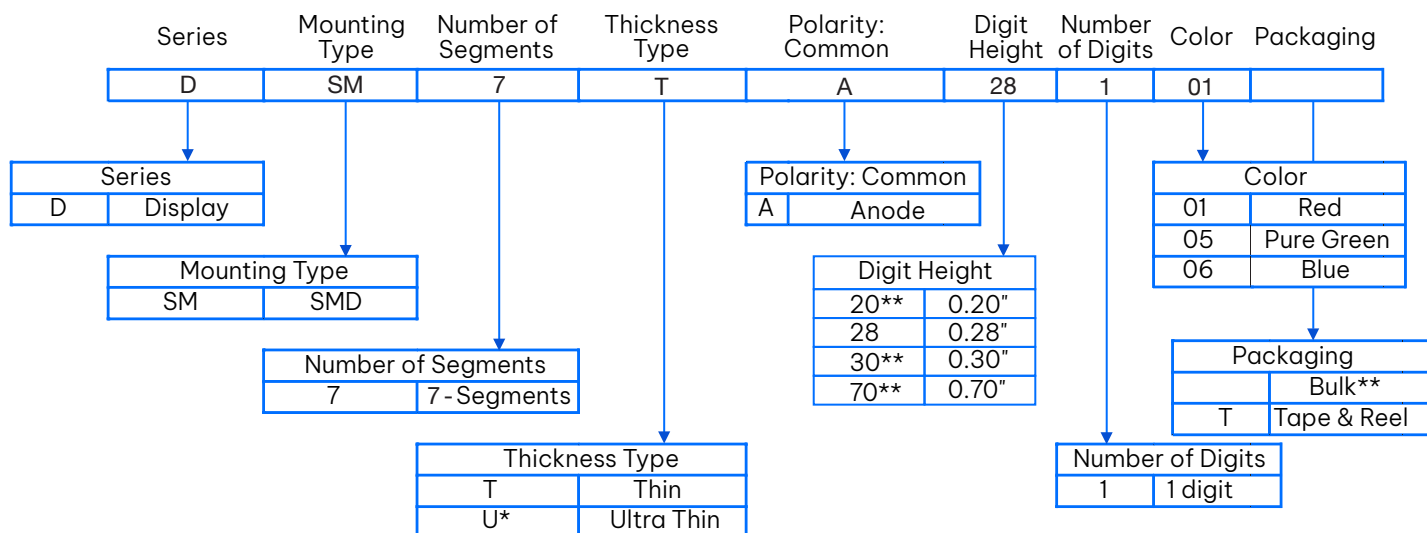
Applications

- People Movers
- Home Appliance
- 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: InGaN
- Outer dimensions: 10.0 x 7.4 x 3.75mm
- 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
- Display surface color: grey surface and white segments
- 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)

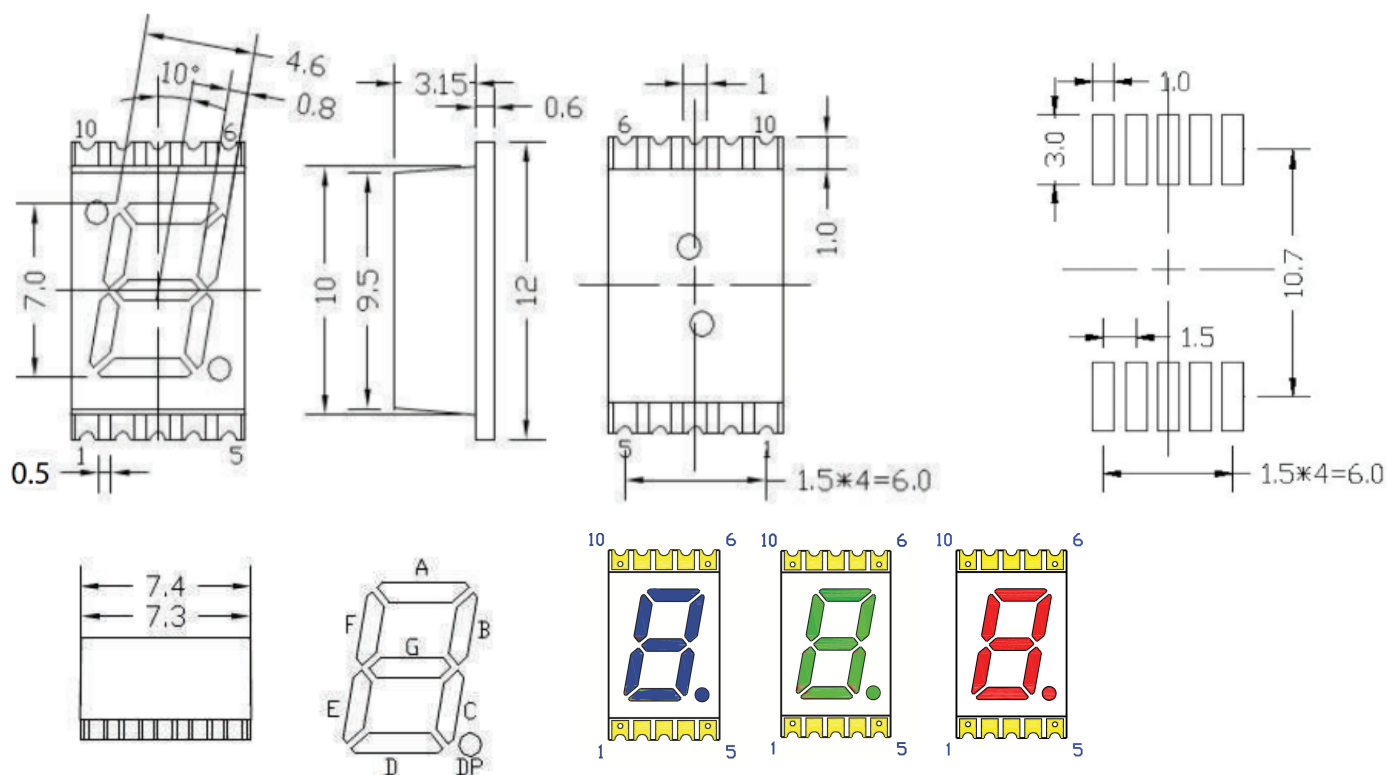
Ordering Data



*Please refer to DSM7U product datasheet for Ultra Thin Version

**Only available for DSM7U Version

Dimensions and Internal Circuit Diagram



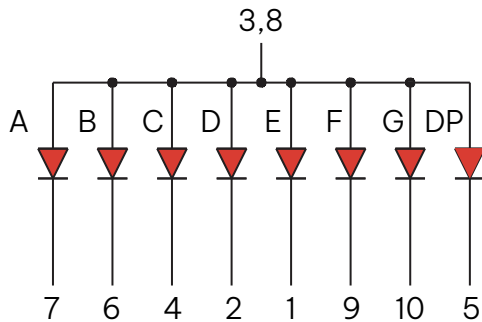
Dimensions in millimeters

Tolerance is $\pm 0.25\text{mm}$ unless otherwise noted



Ordering Data

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	COMMON ANODE
9	CATHODE F
10	CATHODE G

Product Specifications

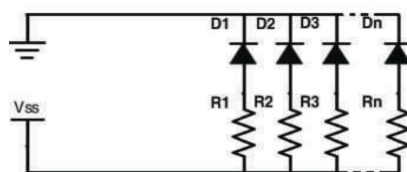
Absolute Maximum Ratings while $T_a=25^{\circ}\text{C}$

Parameter	Minimum (m)	Maximum (M)	Unit
Forward Current I_F /Seg	-	20	mA
Reverse Voltage V_R /Seg	-	5	V
Operating Temperature T_{OPR}	-30	+85	$^{\circ}\text{C}$
Storage Temperature T_{STG}	-40	+100	$^{\circ}\text{C}$
Peak Current I_{FM} /Seg	-	60	mA

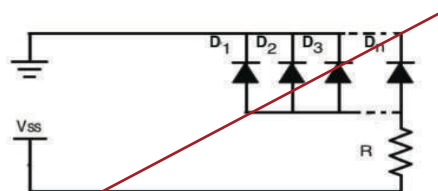
(Notice: 1/10th duty cycle, 0.1ms pulse width)

Circuit Design Notes

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



CORRECT



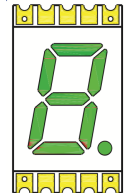
INCORRECT



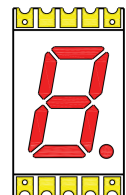
Product Specifications

Electrical-Optical Characteristics while Ta=25°C

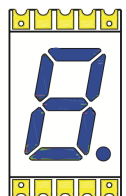
Parameter	Condition	Unit	Minimum	Typical	Maximum
Forward Voltage V_F /Seg	$I_F=20\text{mA}$	V	2.6	3.1	3.6
Reverse Current I_R /Seg	$V_R=5\text{V}$	μA	-	-	50
Wavelength λ_P	$I_F=20\text{mA}$	nm	520	525	530
Full Width at Half Maximum $\Delta\lambda$	$I_F=20\text{mA}$	nm	-	17.5	-
Luminosity I_V /Seg	$I_F=20\text{mA}$	mcd	450	600	850
Viewing angle	wide viewing angle				

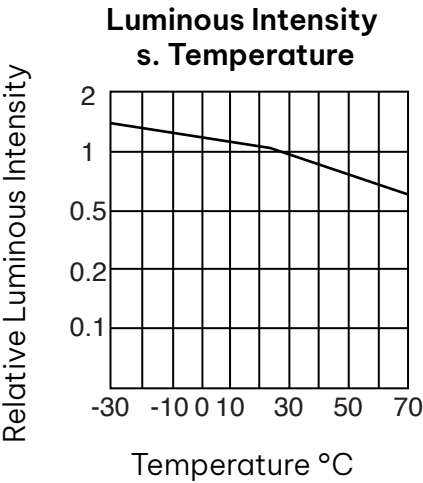
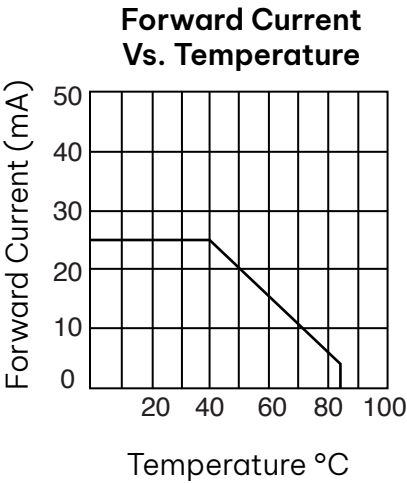
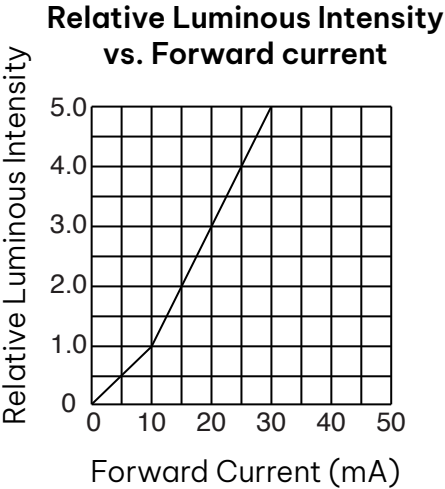
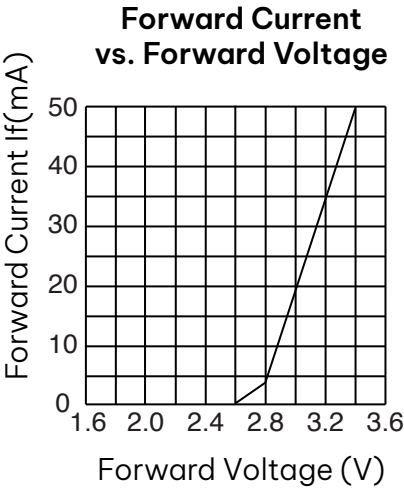
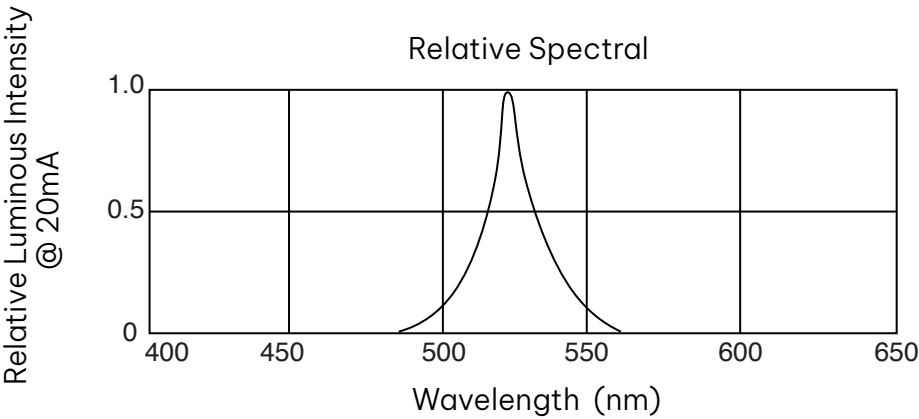
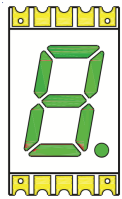


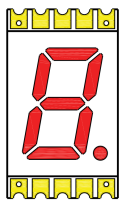
Parameter	Condition	Unit	Minimum	Typical	Maximum
Forward Voltage V_F /Seg	$I_F=20\text{mA}$	V	1.7	2.0	2.4
Reverse Current I_R /Seg	$V_R=5\text{V}$	μA	-	-	50
Wavelength λ_P	$I_F=20\text{mA}$	nm	620	625	630
Full Width at Half Maximum $\Delta\lambda$	$I_F=20\text{mA}$	nm	-	30	-
Luminosity I_V /Seg	$I_F=20\text{mA}$	mcd	50	90	120
Viewing angle	wide viewing angle				



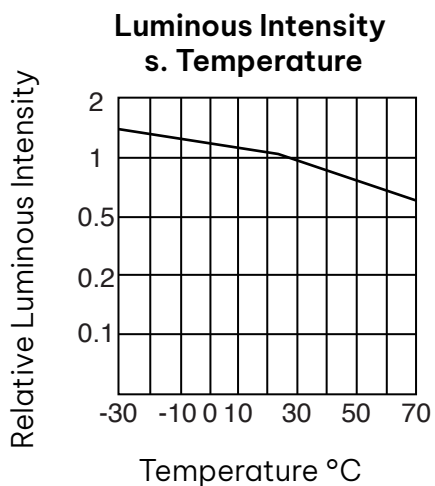
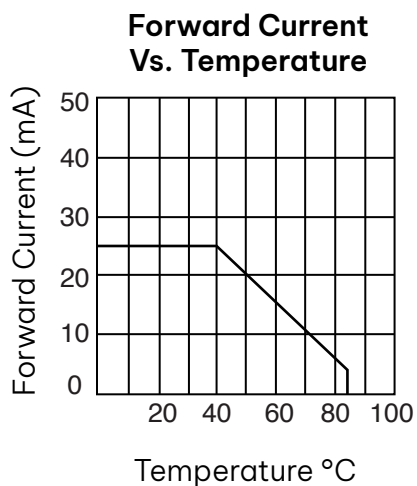
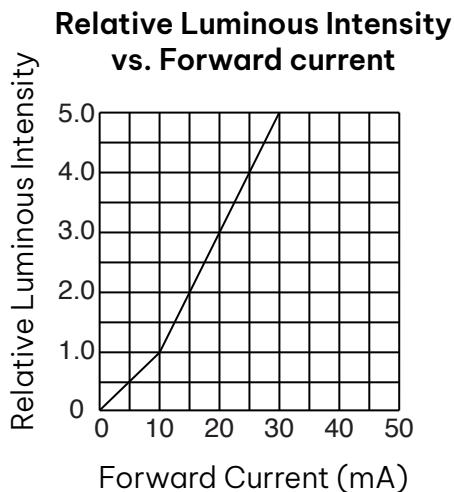
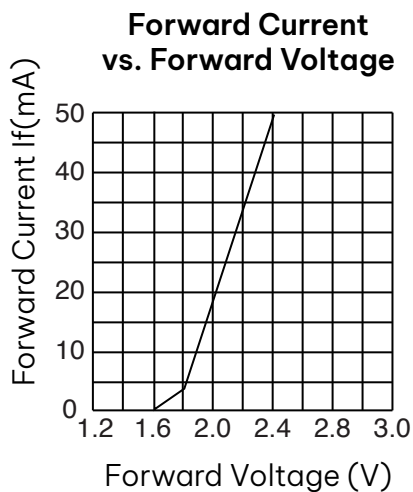
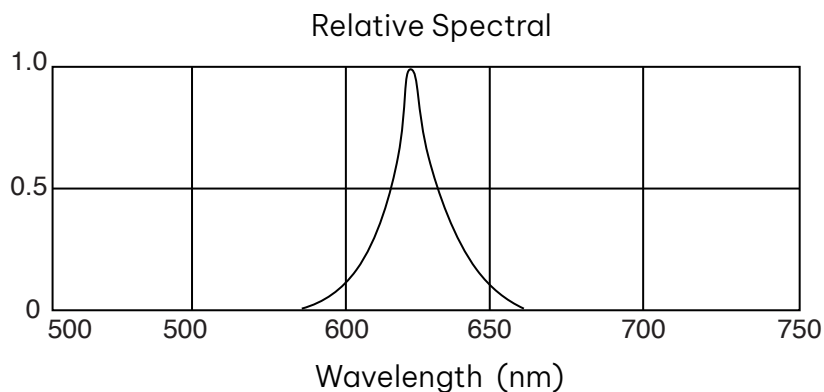
Parameter	Condition	Unit	Minimum	Typical	Maximum
Forward Voltage V_F /Seg	$I_F=20\text{mA}$	V	2.6	3.1	3.6
Reverse Current I_R /Seg	$V_R=5\text{V}$	μA	-	-	50
Wavelength λ_P	$I_F=20\text{mA}$	nm	455	460	475
Full Width at Half Maximum $\Delta\lambda$	$I_F=20\text{mA}$	nm	-	15	-
Luminosity I_V /Seg	$I_F=20\text{mA}$	mcd	150	210	305
Viewing angle	wide viewing angle				

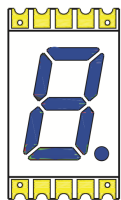




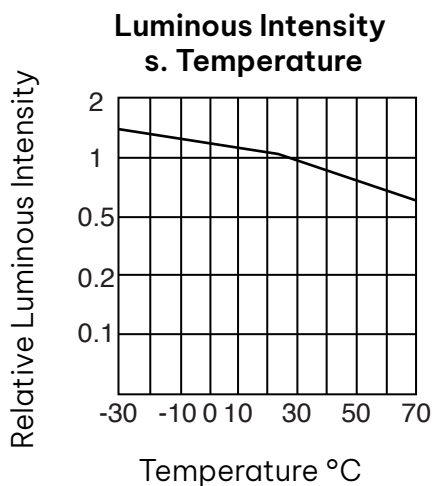
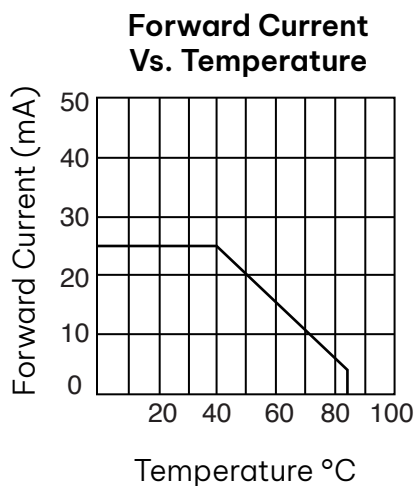
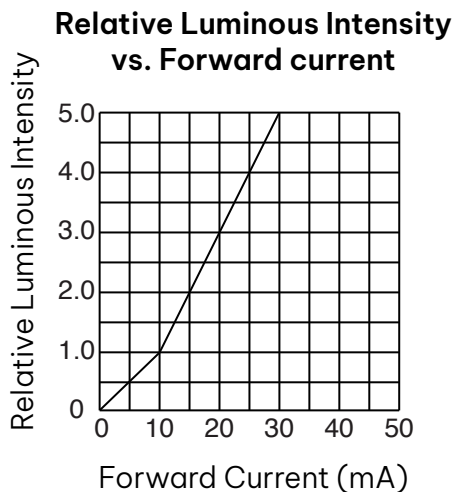
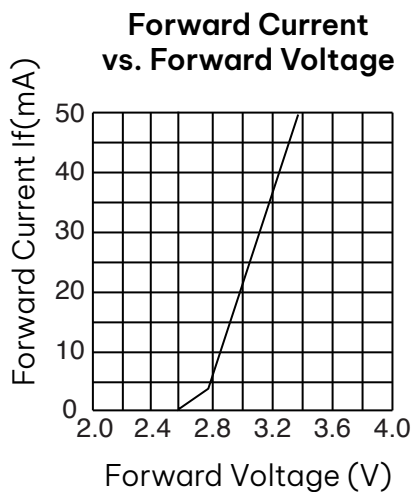
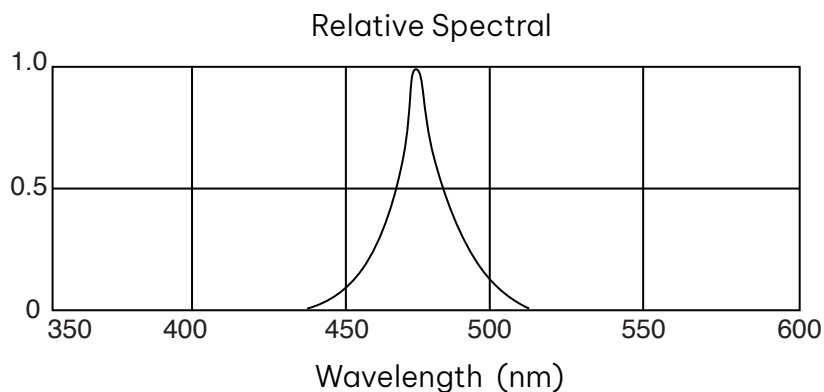


Relative Luminous Intensity
@ 20mA



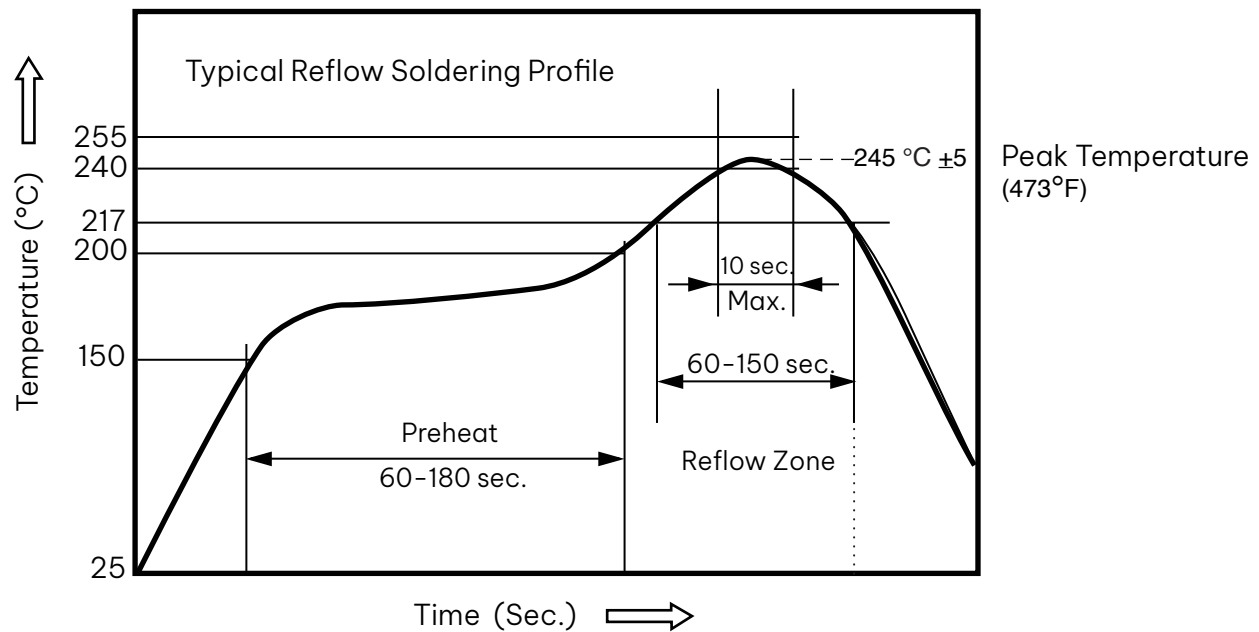


Relative Luminous Intensity
@ 20mA





Recommended Reflow Soldering Profile



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

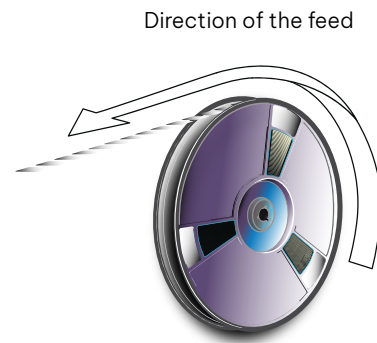
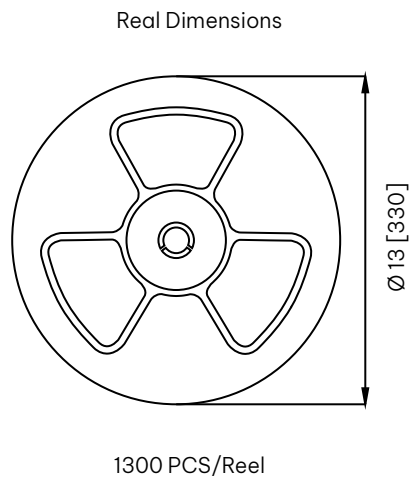
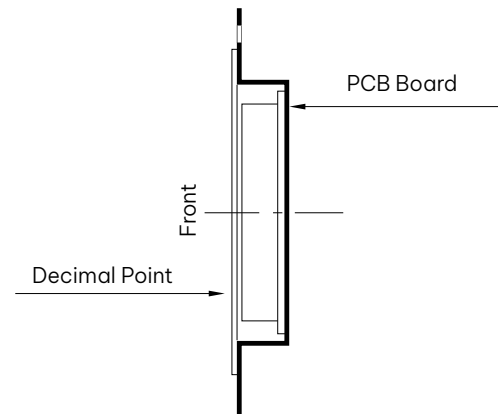
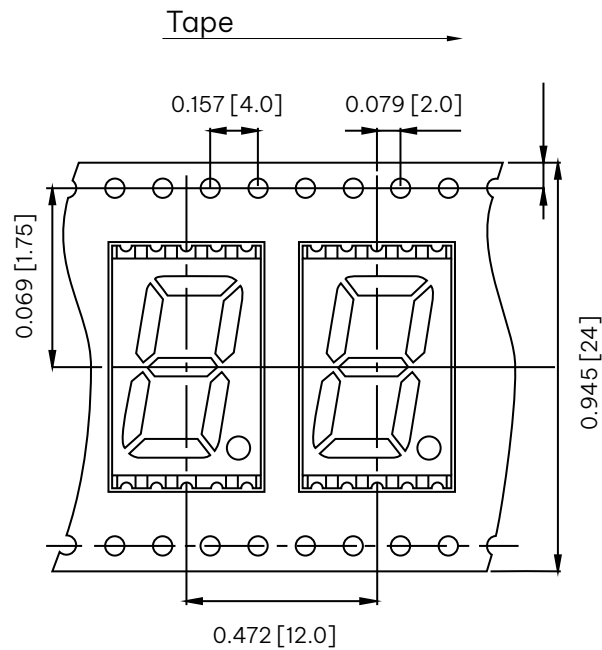
- Manual soldering is suggested
 - Use soldering irons of which power is less than 30 Watt.
 - Keep the temperature of soldering irons below 360 °C
 - Only one soldering is allowed on each bonding pad.
 - The maximum time from when a soldering iron comes into contact with the parts that are to be connected 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.



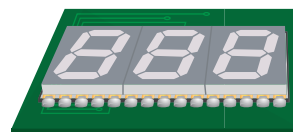
Tape and Reel Dimensions

CARRIER BAND

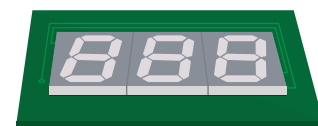
Electrostatic Discharge (ESD) Package
Anti Static Bags Aluminium Moisture Barrier Bag.



Allow top mount or reverse mount design



Top Mount



Reverse Mount

Dimensions in inches [millimeters]

Compliances and Approvals

