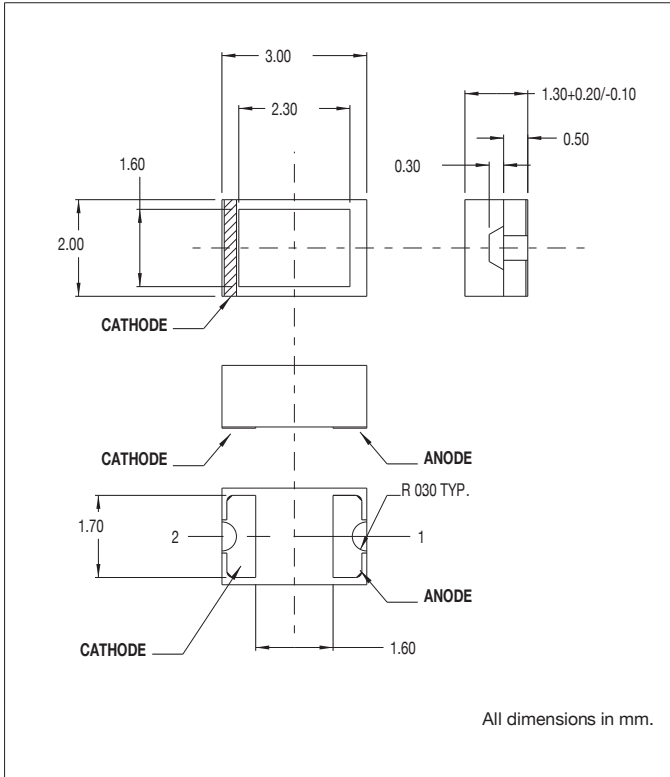


# 7016X Series SMT LEDs 1208 Package Size



## Key features

### Surface Mount Technology

- Tape and reel packaged for high-speed autoinsertion.
- Convection and vapor-phase reflow compatible.
- Compact form enables high density placement.
- Packaged 2500 per reel.

### Leading Edge LED Optoelectronic Performance

- Consistent high brightness.

### Exceptional Reliability

- Stringent process controls assure quality.
- Extensive qualification testing to meet strictest requirements.
- Designed to permit easy post-reflow solder joint inspection.

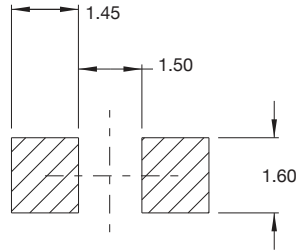
## Electro-Optical Characteristics and Ratings

PART NUMBER	7016X13	7016X1	7016X3	7016X5	7016X11
Output Color	Amber	Red	Yellow	Green	Red
Diffusion	Non-Diffused	Non-Diffused	Non-Diffused	Non-Diffused	Non-Diffused
Package Color	Clear	Clear	Clear	Clear	Clear
Test Current (mA)	20	20	20	20	20
Forward Voltage Typ. (V)	2.0	2.0	2.1	2.2	1.75
Forward Voltage Max. (V)	2.8	2.8	2.8	2.8	2.5
Luminous Intensity Typ. (mcd)	2.2	2.2	2.2	5.6	5.6
Luminous Intensity Max. (mcd)	6.3	6.3	6.3	16.0	16.0
Luminous Intensity Min. (mcd)	1.7	2.2	2.1	2.2	2.1
Peak Wavelength (nm)	610	650	585	563	660
Viewing Angle 2θ 1/2 (degrees)	110	110	110	110	110
Power Dissipation (mW)	75	75	75	75	75
Operating Temperature (°C)	-25 to +80	-25 to +80	-25 to +80	-25 to +80	-25 to +80
Storage Temperature (°C)	-30 to +85	-30 to +85	-30 to +85	-30 to +85	-30 to +85
Peak Forward Current Max. (1μs @ 10% duty cycle) (mA)	75	75	75	75	75

# Dimensions

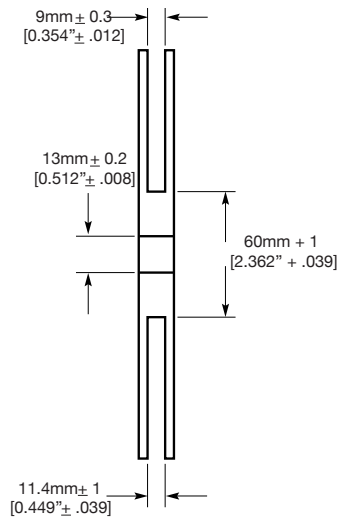
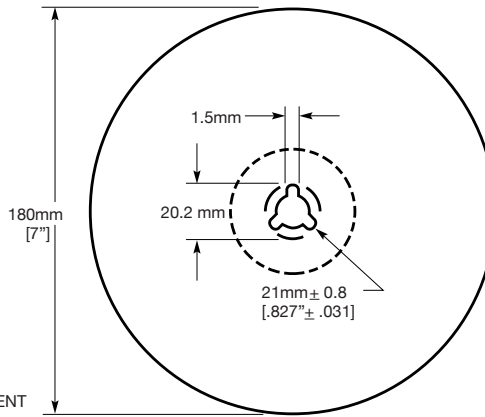
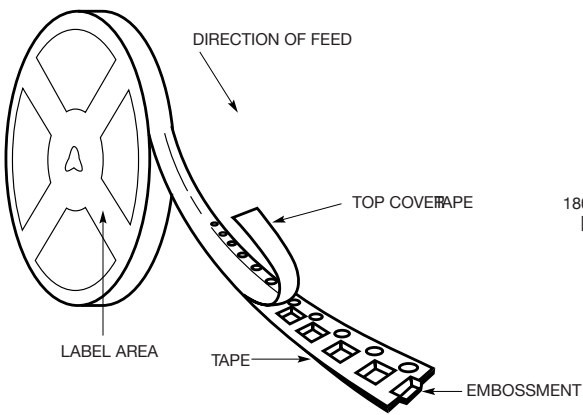
Solder Pad Geometry (Dimensions in mm)

7016X Series



Direction of Feed

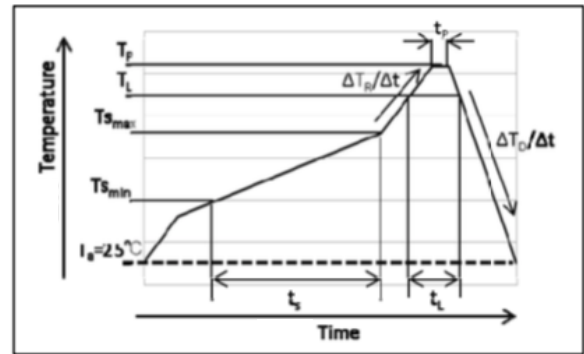
Reel Dimensions



# Recommended Reflow Soldering Profile

• Meaning of marks, Conditions

Mark	Meanings	Conditions
$T_{S_{max}}$	Maximum of pre-heating temperature	180°C
$T_{S_{min}}$	Minimum of pre-heating temperature	140°C
$T_s$	Time from $T_{S_{min}}$ to $T_{S_{max}}$	Over 60sec.
$T_L$	Reference temperature	210~250°C
$t_L$	Retention time for $T_L$	Within 40sec.
$T_P$	Peak temperature	250°C(Max)
$t_p$	Time for peak temperature	Within 10sec.
$\Delta T_R/\Delta t$	Temperature rising rate	Under 3°C/sec.
$\Delta T_D/\Delta t$	Temperature decreasing rate	Over -3°C/sec.



※Above conditions are for reference. Therefore, evaluate by customer's own circuit boards and reflow furnaces before using, because stress from circuit boards and temperature variations of reflow furnaces vary by customer's own conditions.

### 4-7. Attention Points in Soldering Operation

This product was developed as a surface mount LED especially suitable for reflow soldering. So reflow soldering is recommended. In case of implementing manual soldering, please take care of following points.

①SOLDER USED

Sn-Cu, Sn-Ag-Cu, Sn-Ag-Bi-Cu

②HAND SOLDERING CONDITION

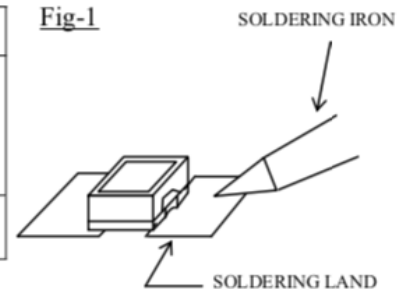
LED products do not contain reinforcement material such as a glass fillers.

So thermal stress by soldering greatly influence its reliability.

Please keep following points for manual soldering.

	ITEM	RECOMMENDED CONDITION
a)	Heating method	Condition ) Temp. of iron top less than 400°C within 3 sec. Heating on PCB pattern, not direct to the LED. (Fig-1)
b)	Handling after soldering	Please handle after the part temp. Goes down to room temp.

Fig-1



### 4-8. Cleaning after Soldering

Please follow the conditions below if the cleaning is necessary after soldering.

Solvent	We recommend to use alcohols solvent such as, isopropyl alcohols
Temperature	Under 30°C within 3 minutes
Ultrasonic Cleaning	15W / Below 1 liter (capacity of tank)
Drying	Under 100°C within 3 minutes

## Compliances and Approvals

