

# Technical Data Sheet

## High Power Infrared LED

### HIR-C06/L298-P01/TR

#### Features

- Small package with high efficiency
- Peak wavelength  $\lambda_p=850\text{nm}$
- Soldering methods:SMT
- Thermal resistance (junction to lead): 40  $^{\circ}\text{C}/\text{W}$ .
- Moisture Sensitivity Level: 1
- Pb free
- The product itself will remain within RoHS compliant version.

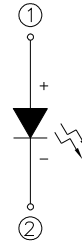
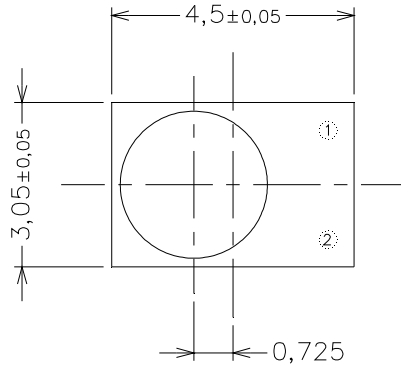
#### Descriptions

- HIR-C06/L298-P01/TR series is an infrared emitting diode in miniature SMD package which is molded in a water clear silicone with spherical top view lens.
- The device is spectrally matched with silicon photodiode, Phototransistor.

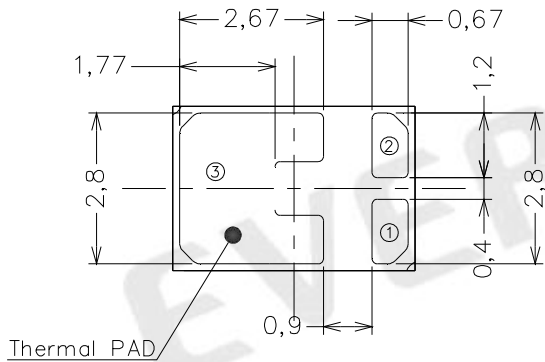
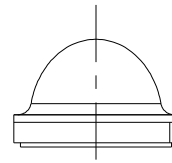
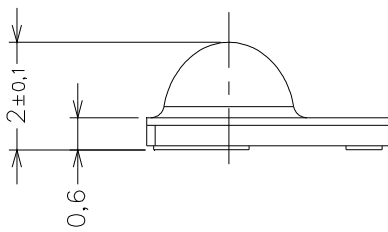
#### Applications

- CCD Camera
- Night Vision
- Infrared applied system

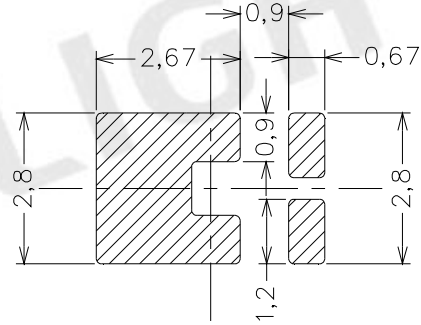
**Package Dimensions**



Polarity



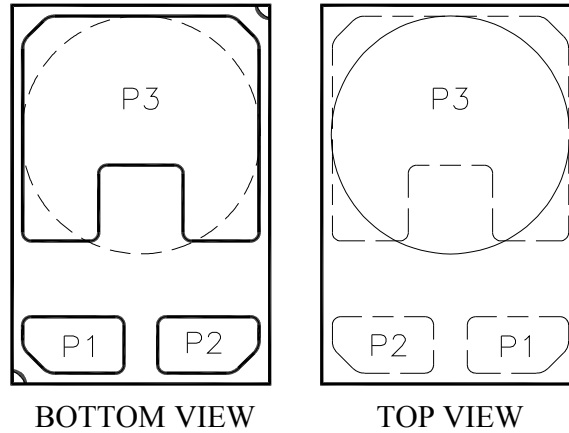
Bot. view



Soldering patterns

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are  $\pm 0.1$ mm.
3. Do not handle the device by the lens. Incorrect force applied to the lens may lead to the failure of devices.

**Pad Configuration**



PAD	FUNCTION
P1	ANODE
P2	CATHODE
P3	THERMAL PAD

## HIR-C06/L298-P01/TR

### Absolute Maximum Ratings (Ta=25 )

Parameter	Symbol	Rating	Unit
Forward Current	$I_F$	700	mA
Reverse Voltage	$V_R$	5	V
Operating Temperature	$T_{opr}$	-40 ~ +85	
Storage Temperature	$T_{stg}$	-40 ~ +100	
Junction temperature	$T_j$	115	°C
Thermal resistance (junction to leadframe)	$R_{th(j-L)}$	40	/W
Power Dissipation @ $I_F=700mA$	$P_d$	1	W

**Note: We suggest that customer should add the heat sink with HIR-C06/L298-P01/TR to exclude the heat.**

### Electro-Optical Characteristics (Ta=25 )

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Total Radiated Power	$P_o$	$I_F=350mA$	120	180	--	mW
		$I_F=700mA$	250	350	--	
		$I_F=1A$ , Pulse Width 100 $\mu s$ ,Duty 1%	--	480	--	
Radiant Intensity	$I_E$	$I_F=350mA$	40	70	--	mW/sr
		$I_F=700mA$	80	140	--	
		$I_F=1A$ , Pulse Width 100 $\mu s$ ,Duty 1%	--	180	--	
Peak Wavelength	$\rho$	$I_F=350mA$	--	855	--	nm
Spectral Bandwidth		$I_F=350mA$	--	25	--	nm
Forward Voltage	$V_F$	$I_F=350mA$	1.4	1.7	2.2	V
		$I_F=700mA$	1.5	1.9	2.5	
Reverse Current	$I_R$	$V_R=5V$	--	--	10	$\mu A$
View Angle	2 1/2	$I_F=20mA$	--	120	--	deg

**Typical Electro-Optical Characteristics Curves**

Fig.1 Forward Current vs. Ambient Temperature

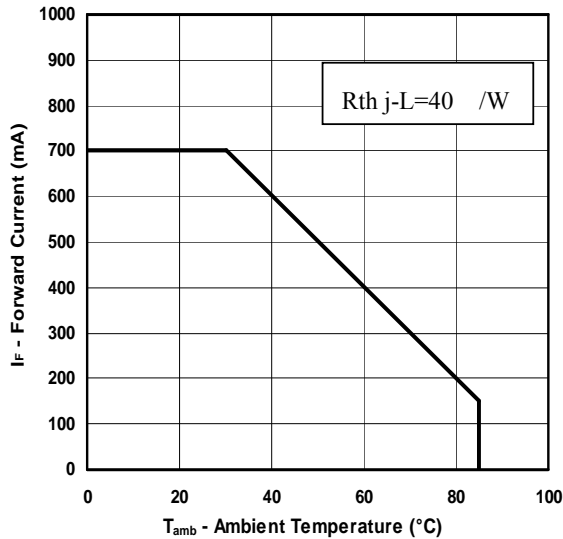


Fig.2 Spectral Distribution

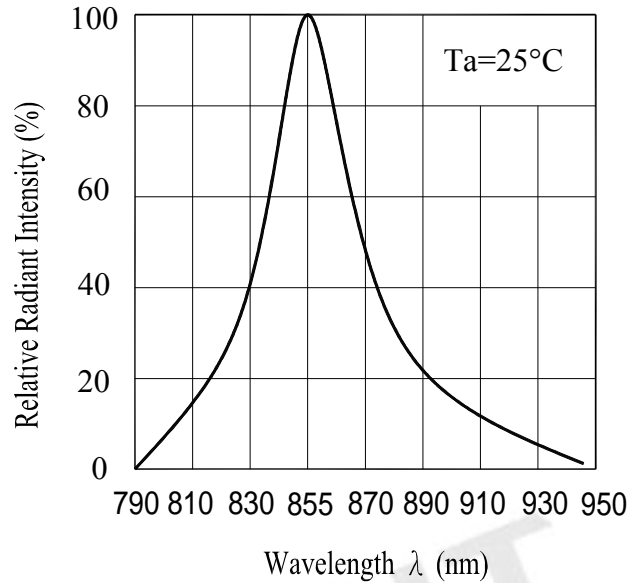


Fig.3 Radiant Intensity vs. Forward Current

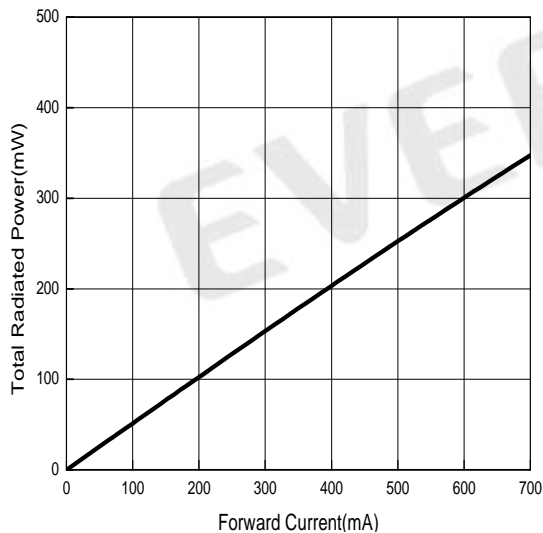
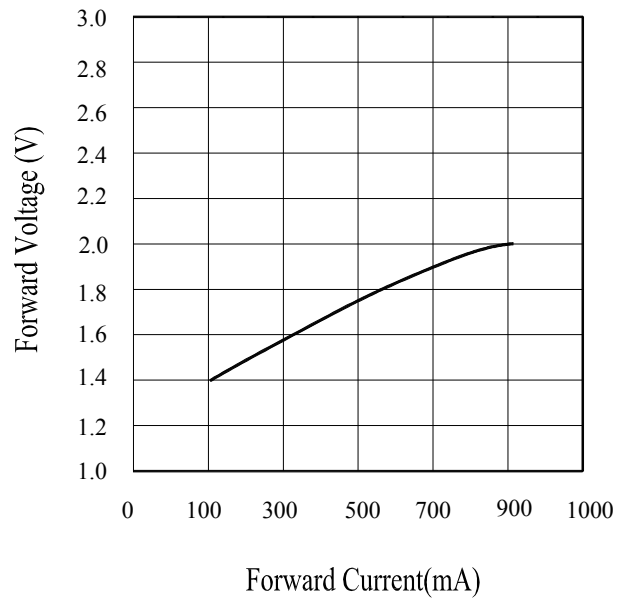
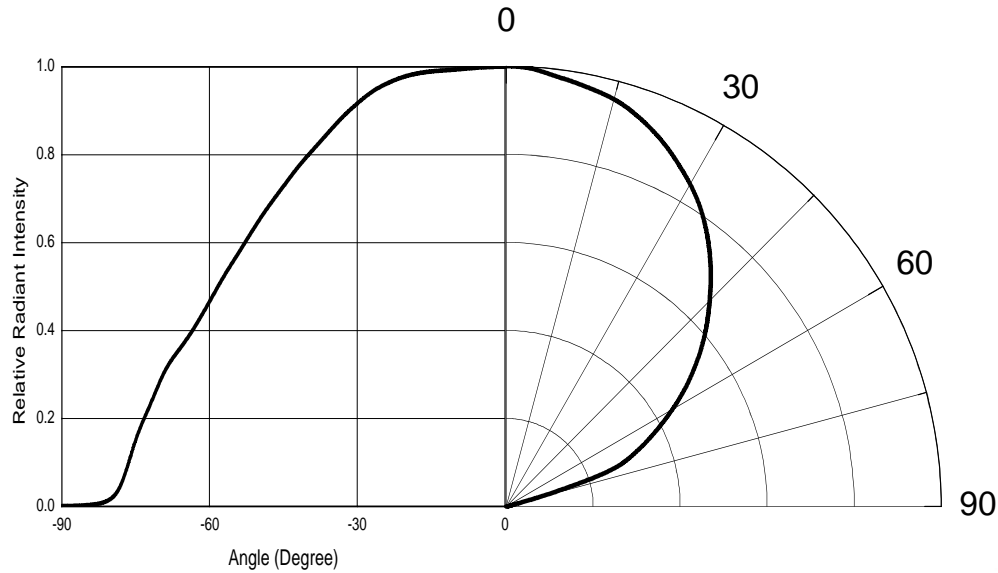


Fig.4 Forward Current vs. Forward Voltage



**Typical Electro-Optical Characteristics Curves**

Fig.5 Relative Radiant Intensity vs. Angular Displacement



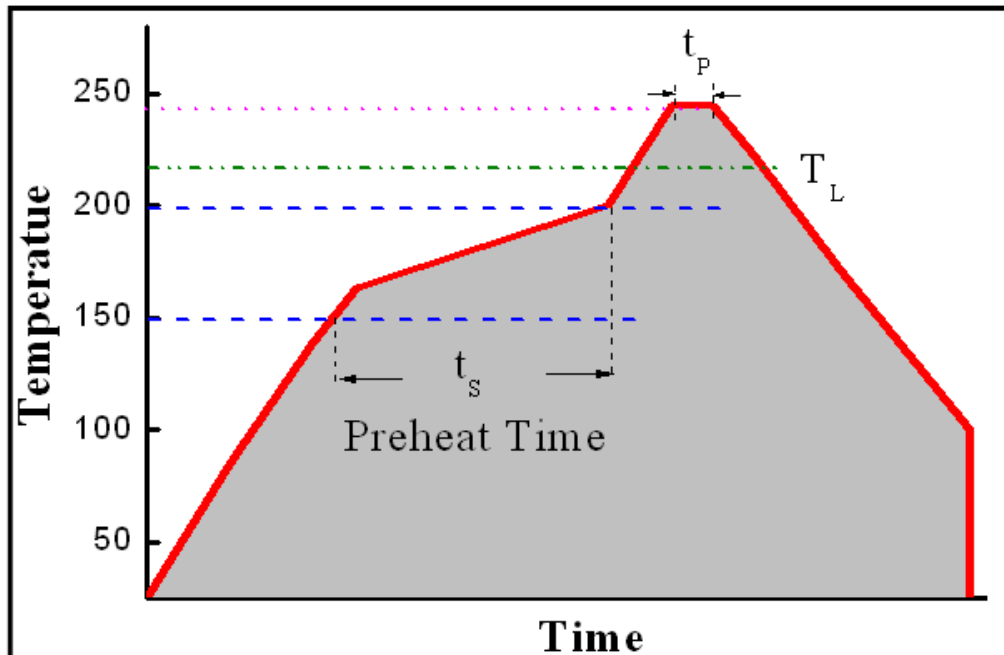
**JEDEC Moisture Sensitivity**

Level	Floor Life		Soak Requirements Standard	
	Time (hours)	Conditions	Time (hours)	Conditions
1	unlimited	30 / 85% RH	168 (+5/-0)	85 / 85 RH

## Reflow Soldering Characteristics

### For Reflow Process

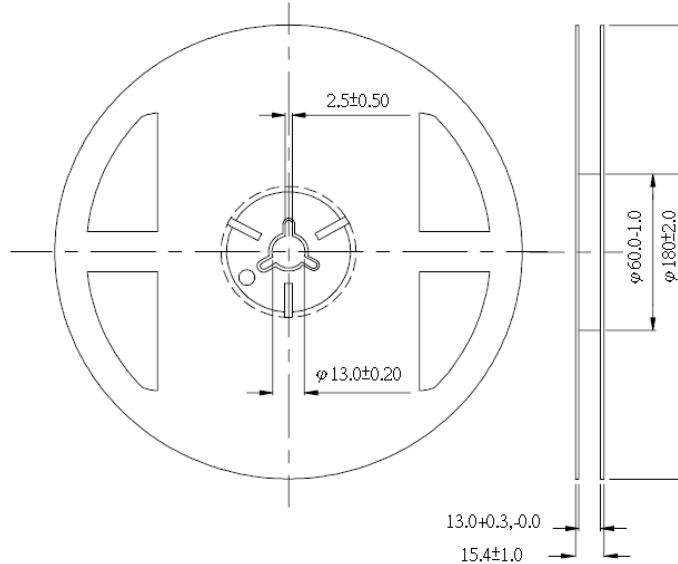
- C06 series are suitable for SMT processes.
- Curing of glue in oven must be according to standard operation flow processes.



Profile Feature	Lead Free Assembly
Ramp-Up Rate	2-3 °C/S
Preheat Temperature	150-200 °C
Preheat Time ( $t_s$ )	60-120 S
Liquid Temperature ( $T_L$ )	217 °C
Time maintained above $T_L$	60-90 S
Peak Temperature ( $T_p$ )	240±5 °C
Peak Time ( $t_p$ )	Max 20 S
Ramp-Down Rate	3-5 °C/S

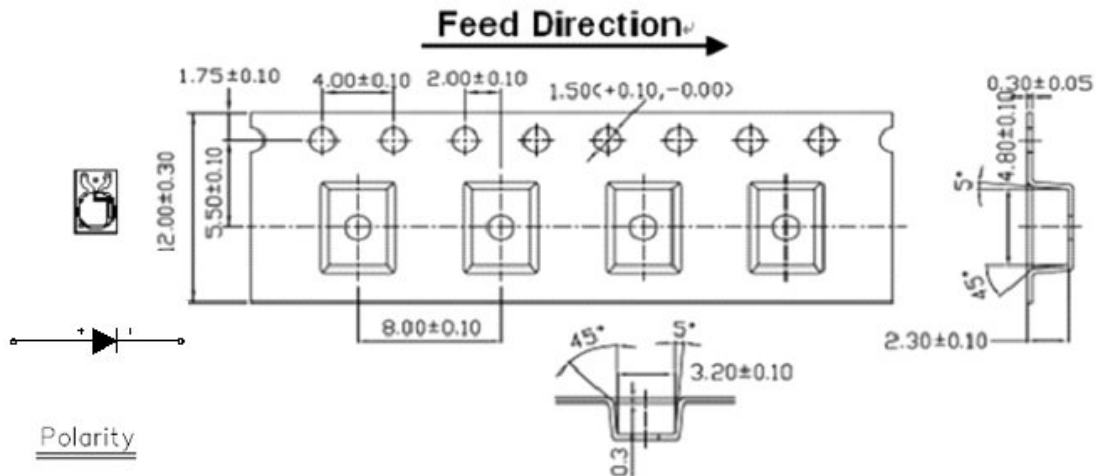
- Reflow soldering should not be done more than twice.
- In soldering process, stress on the LEDs during heating should be avoided.
- After soldering, do not bend the circuit board.

**Package Dimensions**



- Note:**
1. Dimensions are in millimeters
  2. The tolerances unless mentioned is  $\pm 0.1$ mm

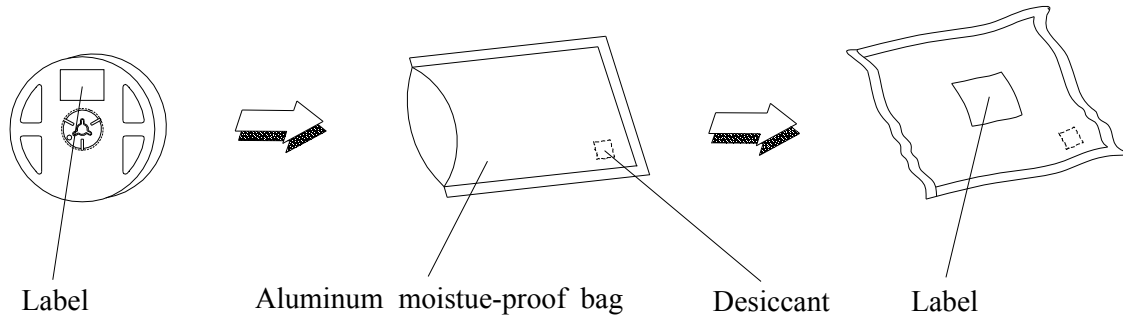
**Carrier Tape Dimensions:**  
Loaded quantity 400 PCS per reel.



- Note:**
1. Dimensions are in millimeters
  2. The tolerances unless mentioned is  $\pm 0.1$ mm



**Moisture Resistant Packaging**



**Label Form Specification**



CPN: Customer's Production Number  
P/N : Production Number  
QTY: Packing Quantity  
CAT: Ranks  
HUE: Peak Wavelength  
REF: Reference  
LOT No: Lot Number  
MADE IN TAIWAN: Production Place

**Notes**

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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