



# HIRP3216Q18-C0

## SMD Type 850nm Infrared Emitter

### Features

- Small double-end package
- Viewing Angle =  $\pm 10^\circ$
- High radiant intensity
- High reliability
- Good spectral matching to Si photo detector
- RoHS compliance

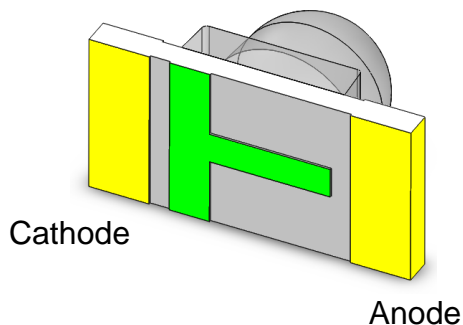
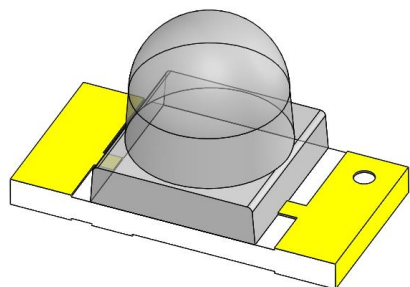
### Applications

- Infrared sensor

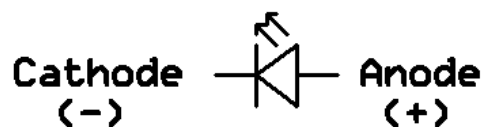
### Description

The HIRP3216Q18-C0 is a GaAlAs infrared LED housed in a miniature SMD package. The device has a peak wavelength of 850nm LED spectrally matched with phototransistor or photodiode.

### Package Outline



### Schematic





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### Absolute Maximum Rating at 25°C

Symbol	Parameters	Ratings	Units	Notes
I <sub>F</sub>	Continuous Forward Current	70	mA	
I <sub>FP</sub>	Peak Forward Current	0.7	A	1
V <sub>R</sub>	Reverse Voltage	5	V	
T <sub>opr</sub>	Operating Temperature	-40 ~ +85	°C	
T <sub>stg</sub>	Storage Temperature	-40 ~ +100	°C	
T <sub>sol</sub>	Soldering Temperature	260	°C	2
P <sub>D</sub>	Power Dissipation at(or below) 25°C Free Air Temperature	140	mW	
R <sub>THJA</sub>	Junction to Ambient Thermal Resistance	540	°C/W	

### Electro-Optical Characteristics TA = 25°C (unless otherwise specified)

#### Optical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I <sub>e</sub>	Radiant Intensity	I <sub>F</sub> =20mA	12.5	20	-	mW/sr	-
		I <sub>F</sub> =70mA	-	65	-		
λ <sub>p</sub>	Peak Wavelength	I <sub>F</sub> =20mA	830	850	870	nm	
Δλ	Spectral Bandwidth	I <sub>F</sub> =20mA	-	30	-	nm	
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =20mA	-	±10	-	deg	

#### Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =20mA	1.30	1.40	1.7	V	
		I <sub>F</sub> =70mA	1.40	1.56	2.0		
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	10	μA	

#### Notes:

- 1 : I<sub>FP</sub> Conditions--Pulse Width ≤ 100μs and Duty ≤ 1%.
- 2 : Soldering time ≤ 5 seconds.



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## SMD Type 850nm Infrared Emitter

### Typical Characteristic Curves

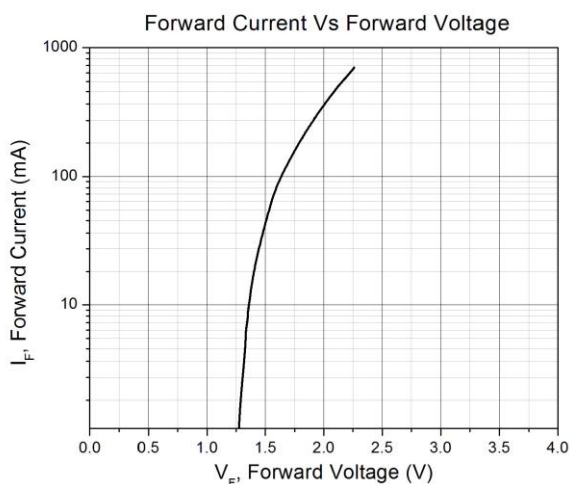


Figure 1

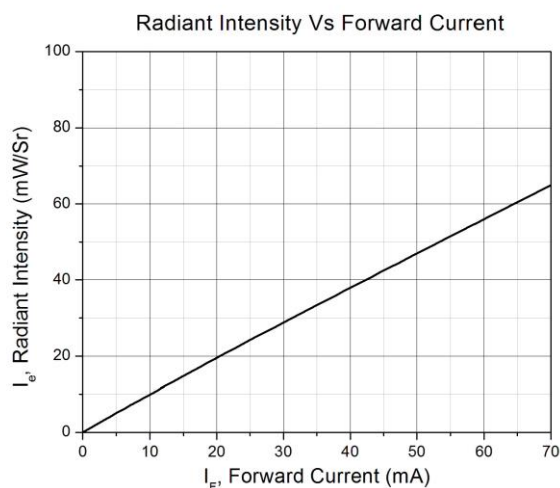


Figure 2

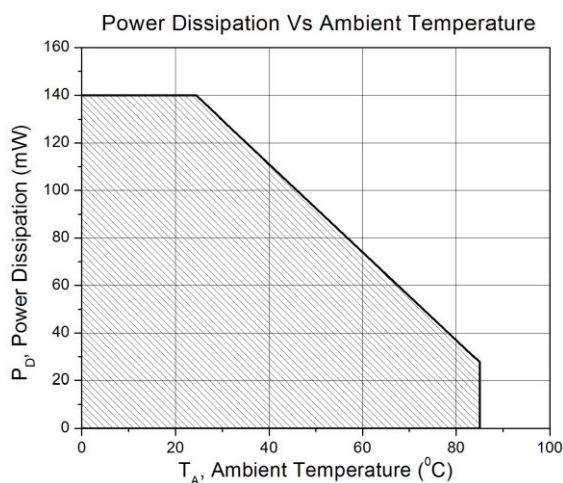


Figure 3

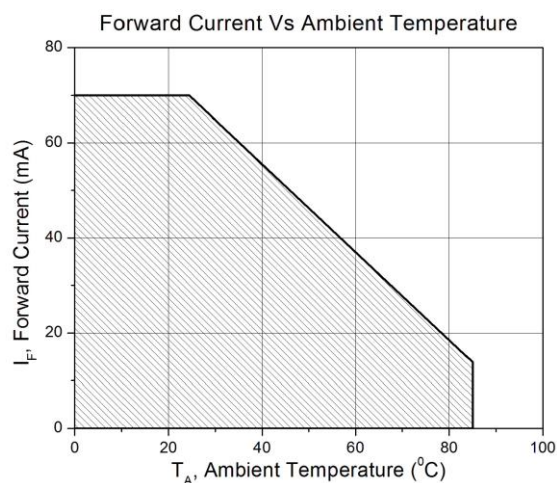


Figure 4

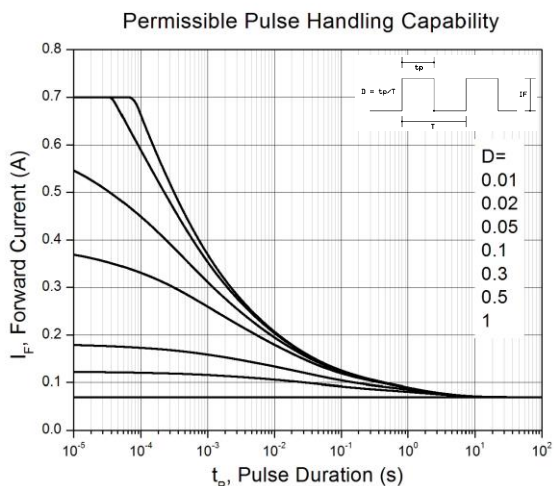


Figure 5

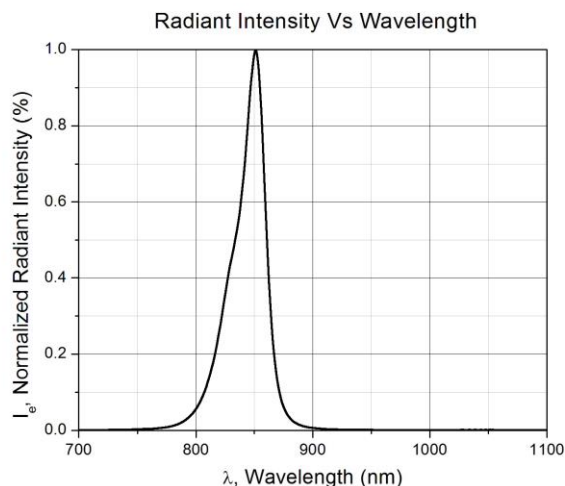


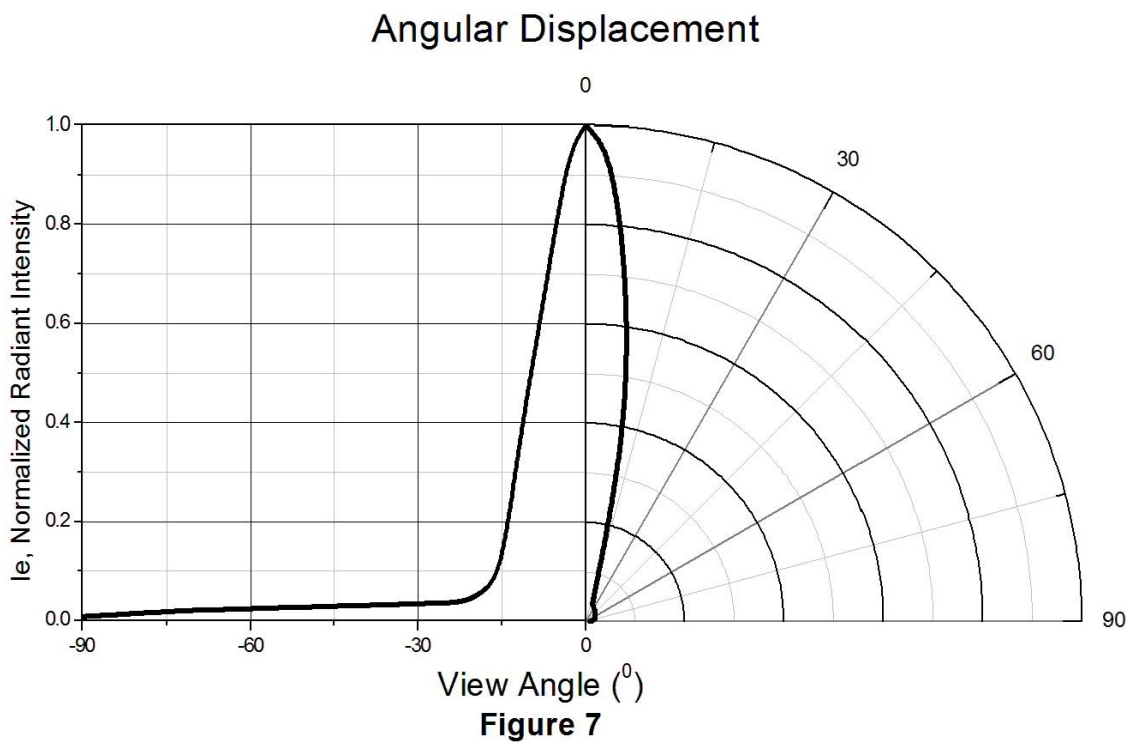
Figure 6



# HIRP3216Q18-C0

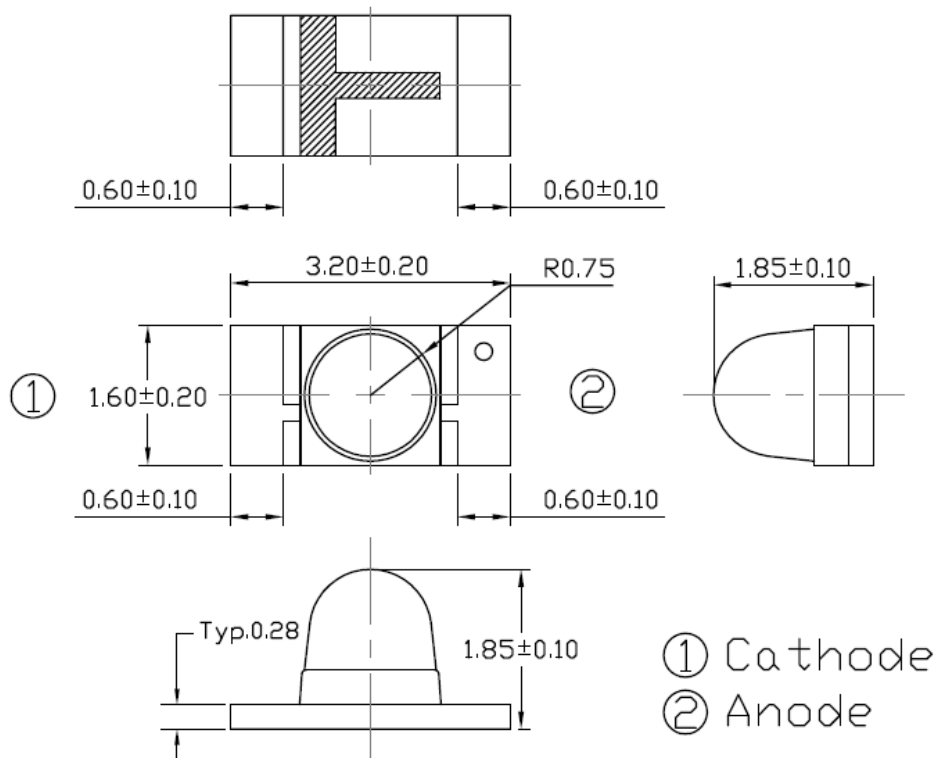
## SMD Type 850nm Infrared Emitter

### Typical Characteristic Curves

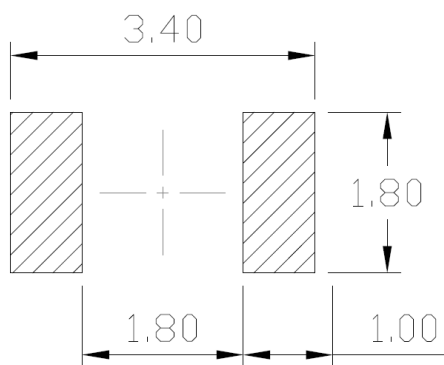




**Package Dimension** *All dimensions are in mm, unless otherwise stated*



**Recommended Soldering Mask** *All dimensions are in mm, unless otherwise stated*



**Ordering Information**

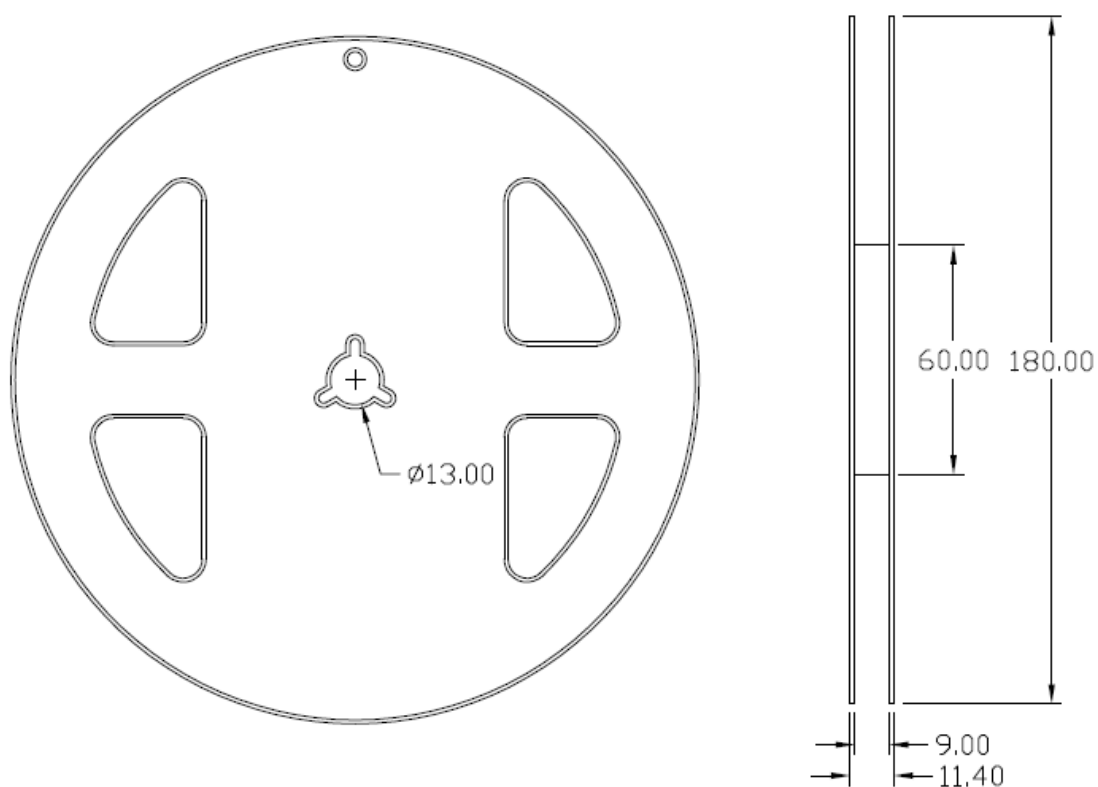
Part Number	Description	Quantity
HIRP3216Q18-C0(T1)	Tape & Reel	2000 pcs
HIRP3216Q18-C0(T2)	Tape & Reel	2000 pcs



HIRP3216Q18-C0

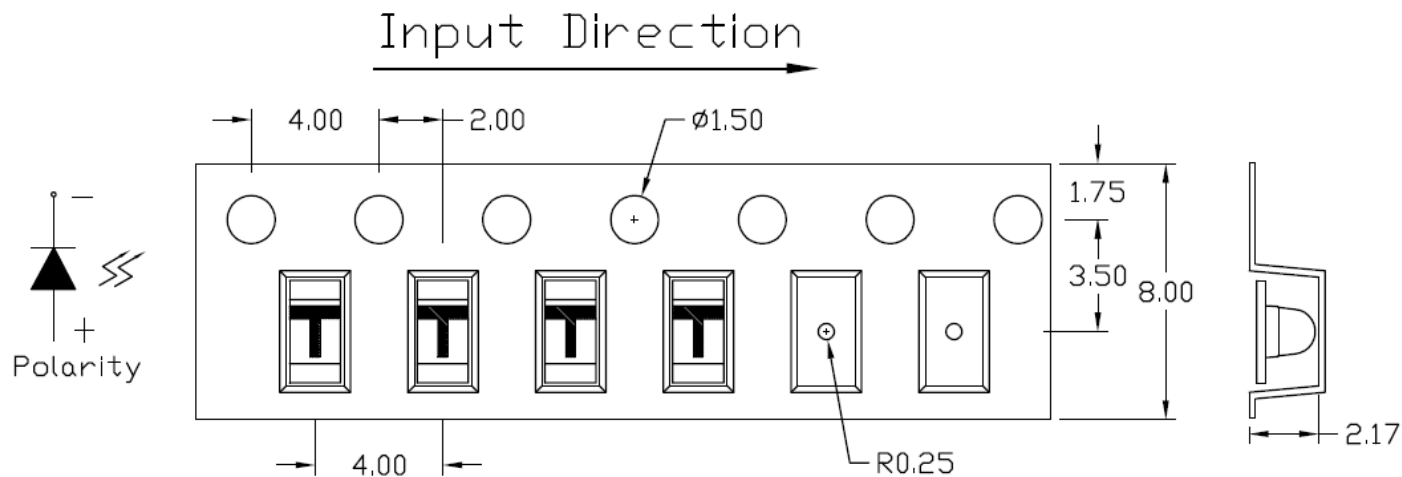
SMD Type 850nm Infrared Emitter

**Reel Dimension** *All dimensions are in mm, unless otherwise stated*



**Tape Dimension** *All dimensions are in mm, unless otherwise stated*

Part Number HIRP3216Q18-C0(T1)

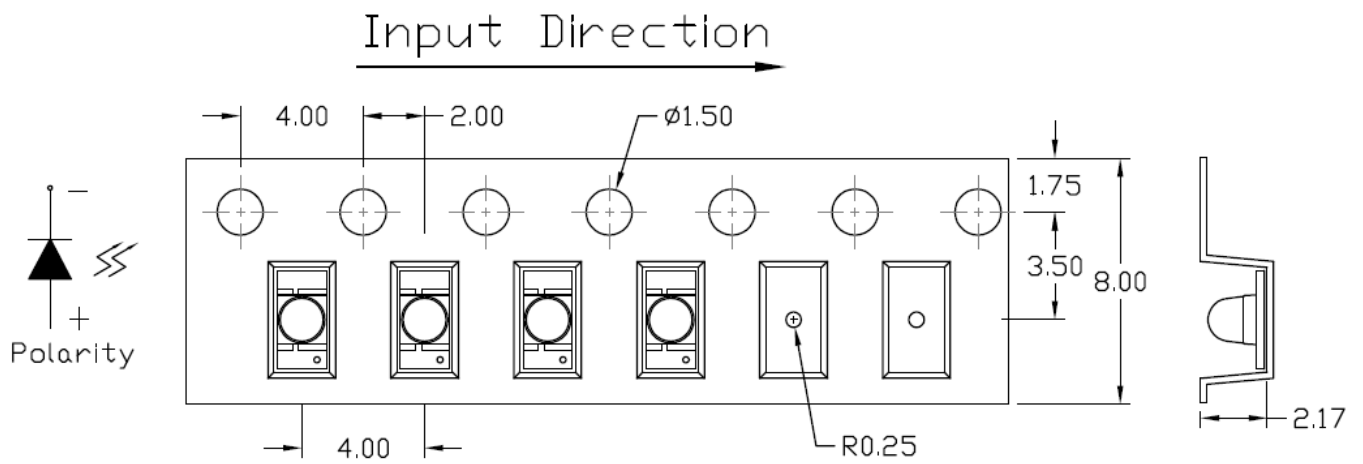




# HIRP3216Q18-C0

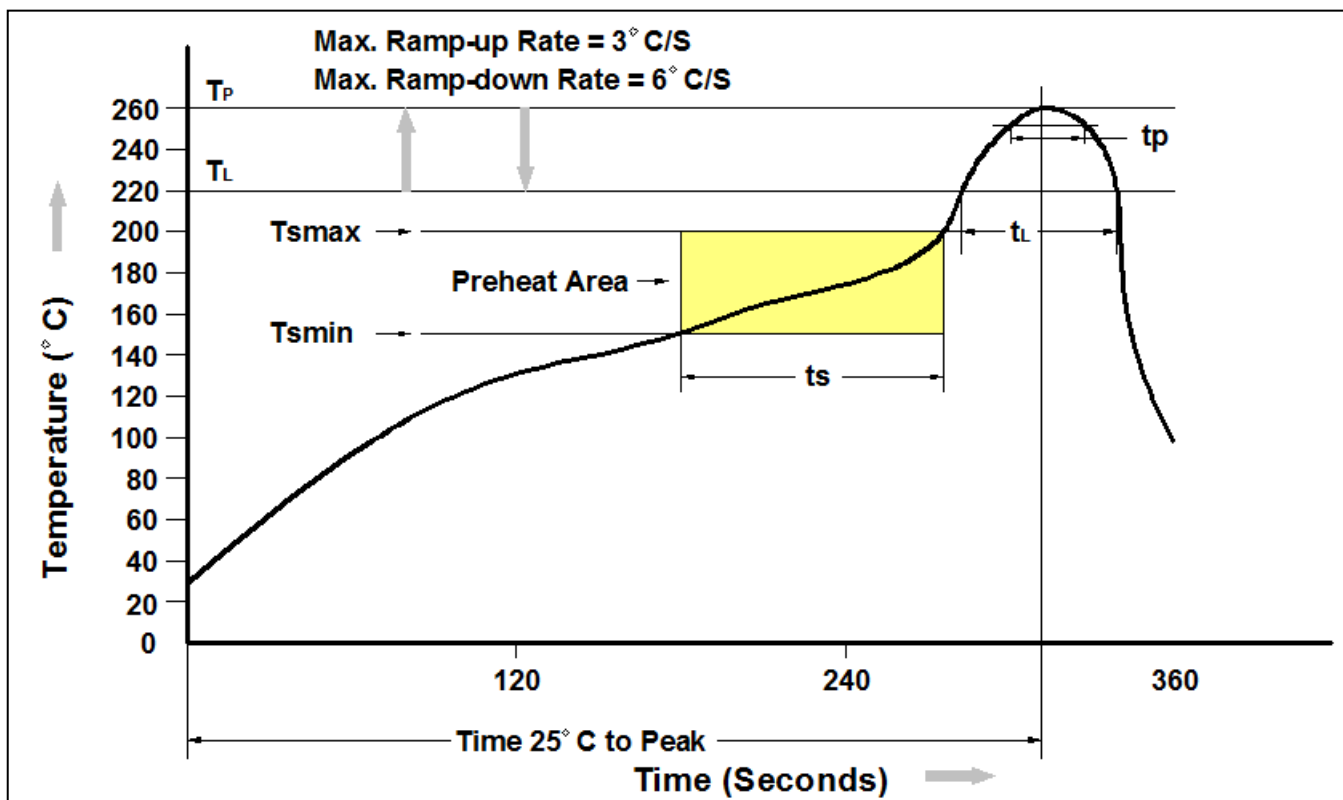
## SMD Type 850nm Infrared Emitter

Part Number HIRP3216Q18-C0(T2)





**Reflow Profile**



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Ramp-up Rate (tL to tp)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (tp) within 5°C of 260°C	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.





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