



FIRC5730W09-B20

SMD Type 730nm Infrared Emitter

CT Microelectronics

Features

- High reliability
- High total radiated power
- Good spectral matching to Si photo detector
- RoHS compliance

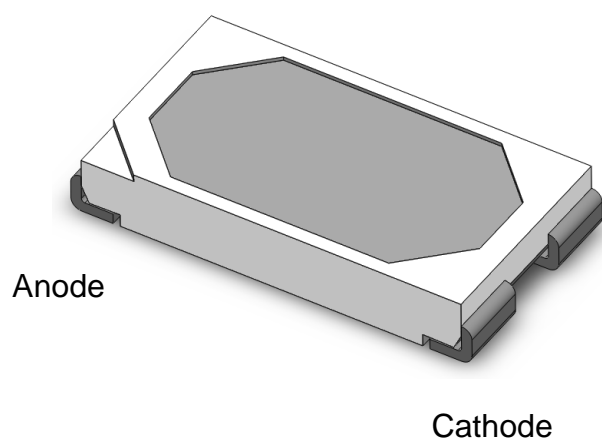
Applications

- Infrared sensor
- Light barrier

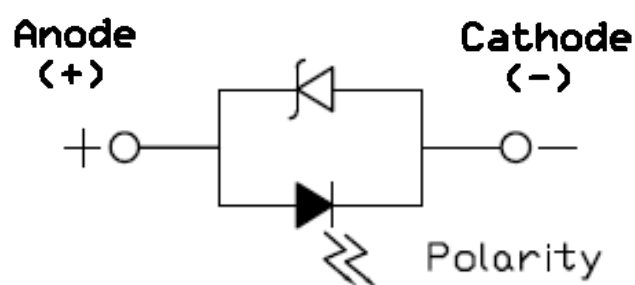
Description

The FIRC5730W09-B20 is a GaAlAs infrared LED housed in a miniature SMD package. The device has a peak wavelength of 730nm LED.

Package Outline



Schematic



**Absolute Maximum Rating at 25°C**

Symbol	Parameters	Ratings	Units	Notes
I _F	Continuous Forward Current	150	mA	
I _{FP}	Peak Forward Current	1.0	A	1
V _R	Reverse Voltage	5	V	
T _{opr}	Operating Temperature	-40 ~ +85	°C	
T _{stg}	Storage Temperature	-40 ~ +100	°C	
T _{sol}	Soldering Temperature	260	°C	2
P _D	Power Dissipation at(or below) 25°C Free Air Temperature	510	mW	

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

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _e	Radiant Intensity	I _F =20mA	-	5.0	-	mW/sr	
		I _F =100mA	-	25.3	-		
		I _F =150mA	-	37.6	-		
P _o	Total radiated power	I _F =20mA	-	15.7	-	mW	
		I _F =100mA	-	80	-		
		I _F =150mA	-	118	-		
λ _p	Peak Wavelength	I _F =20mA	720	730	750	nm	
Δλ	Spectral Bandwidth	I _F =20mA	-	25	-	nm	
θ _{1/2}	Angle of Half Intensity	I _F =20mA	-	±60	-	deg	

Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V _F	Forward Voltage	I _F =20mA	1.7	2.0	2.4	V	
		I _F =100mA	2.2	2.5	3.1		
		I _F =150mA	2.3	2.7	3.4		
I _R	Reverse Current	V _R =5V	-	-	10	μA	

Notes:1 : I_{FP} Conditions--Pulse Width ≤ 100μs and Duty ≤ 1%.

2 : Soldering time ≤ 5 seconds.



Typical Characteristic Curves

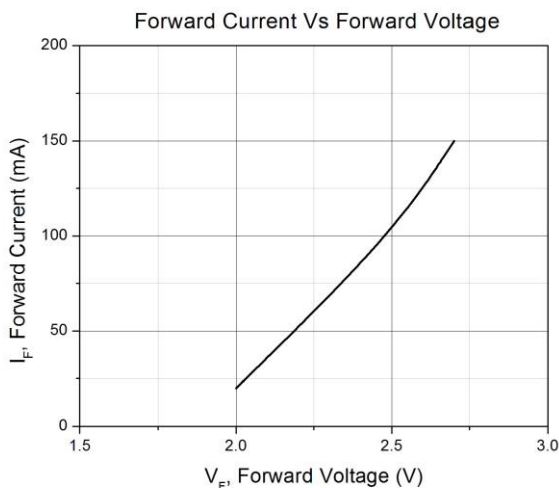


Figure 1

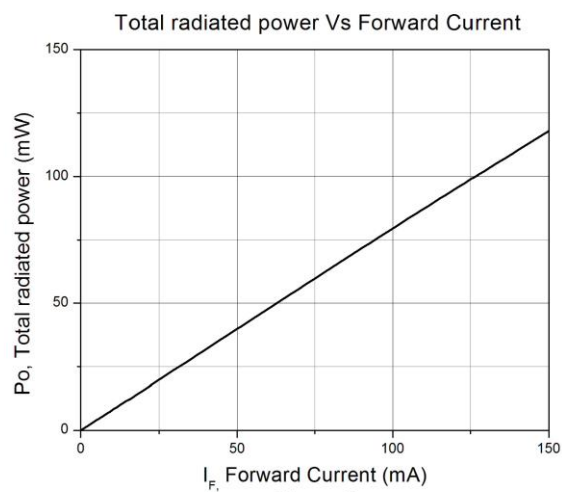


Figure 2

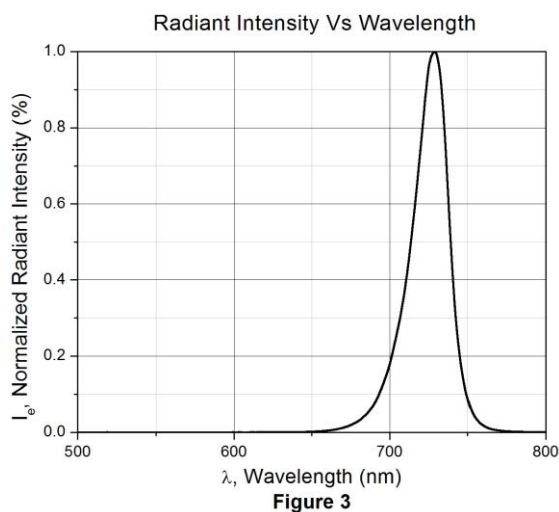


Figure 3

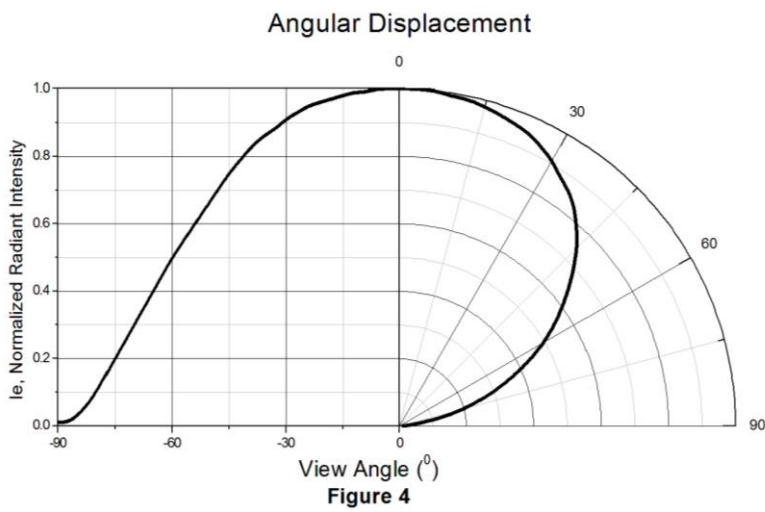
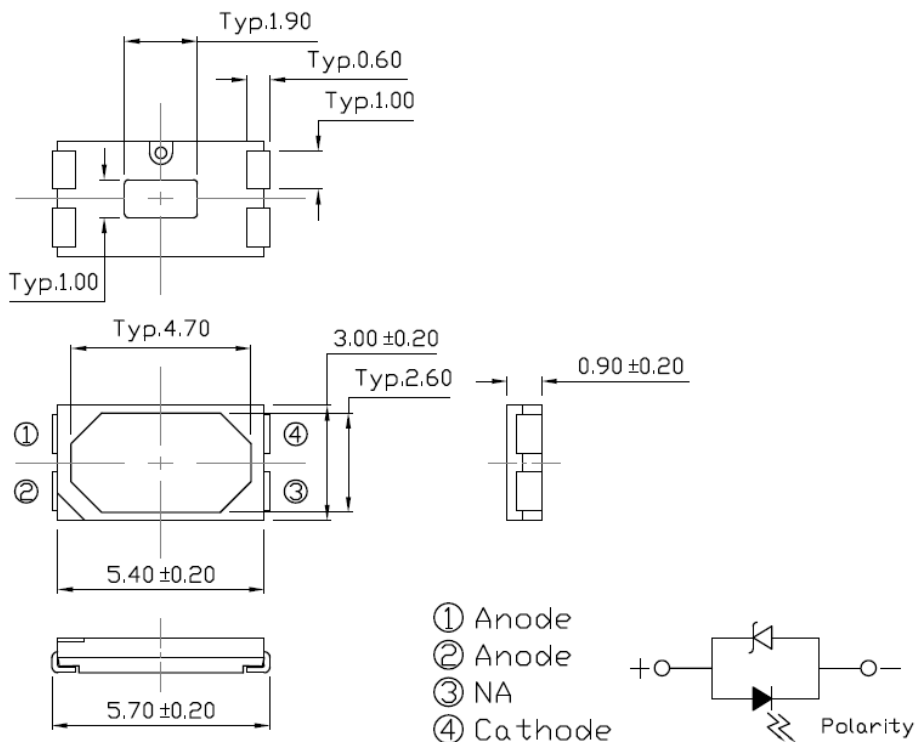


Figure 4



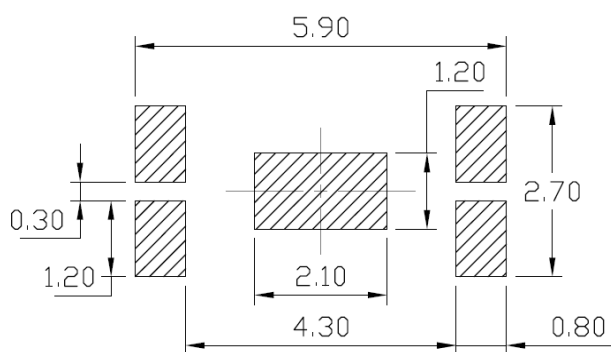
Package Dimension

All dimensions are in mm, unless otherwise stated.



Recommended Soldering Mask

All dimensions are in mm, unless otherwise stated



Ordering Information

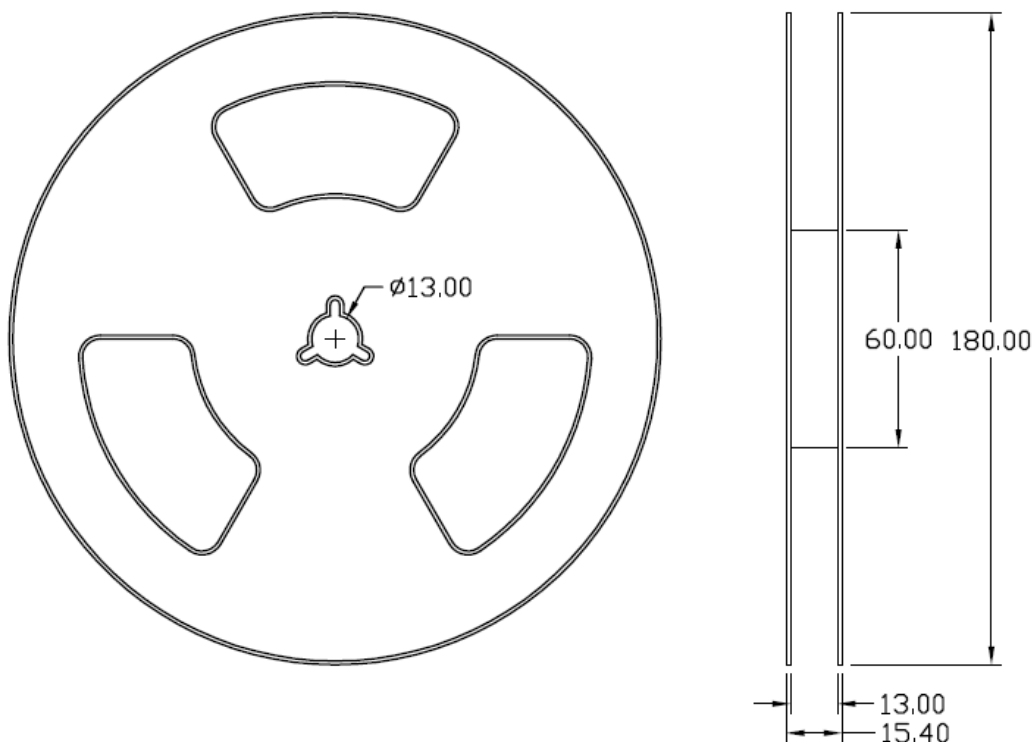
Part Number	Description	Quantity
FIRC5730W09-B20	Tape & Reel	2000 pcs



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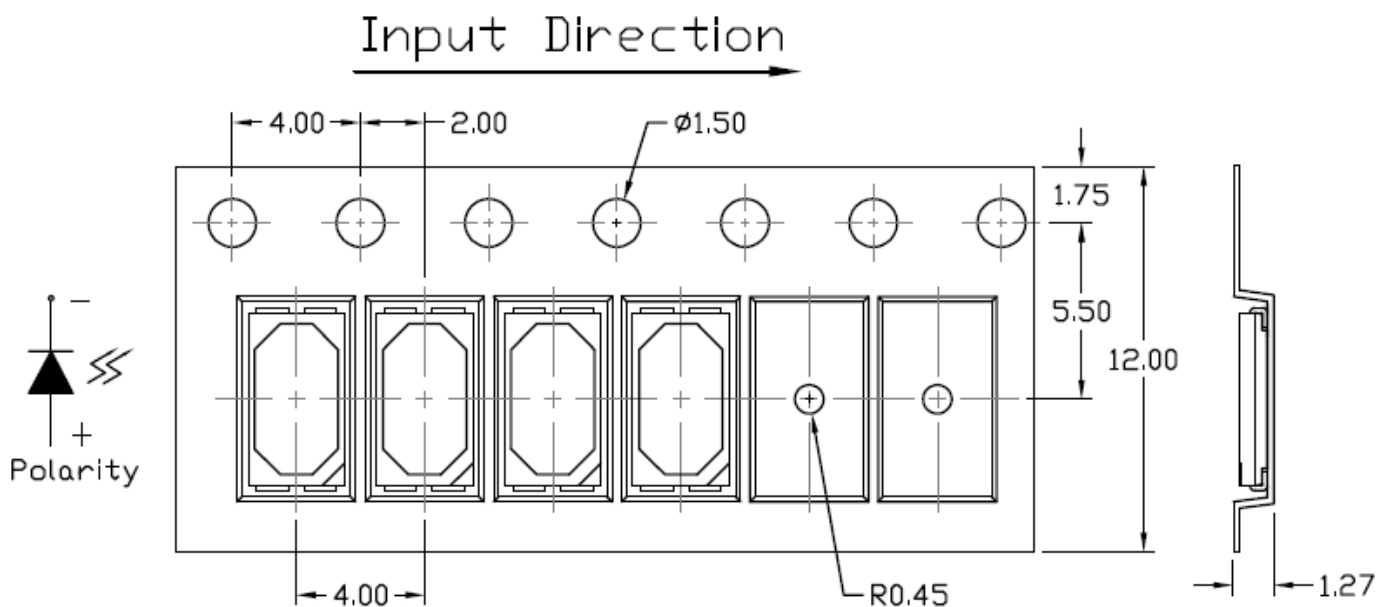
Reel Dimension

All dimensions are in mm, unless otherwise stated



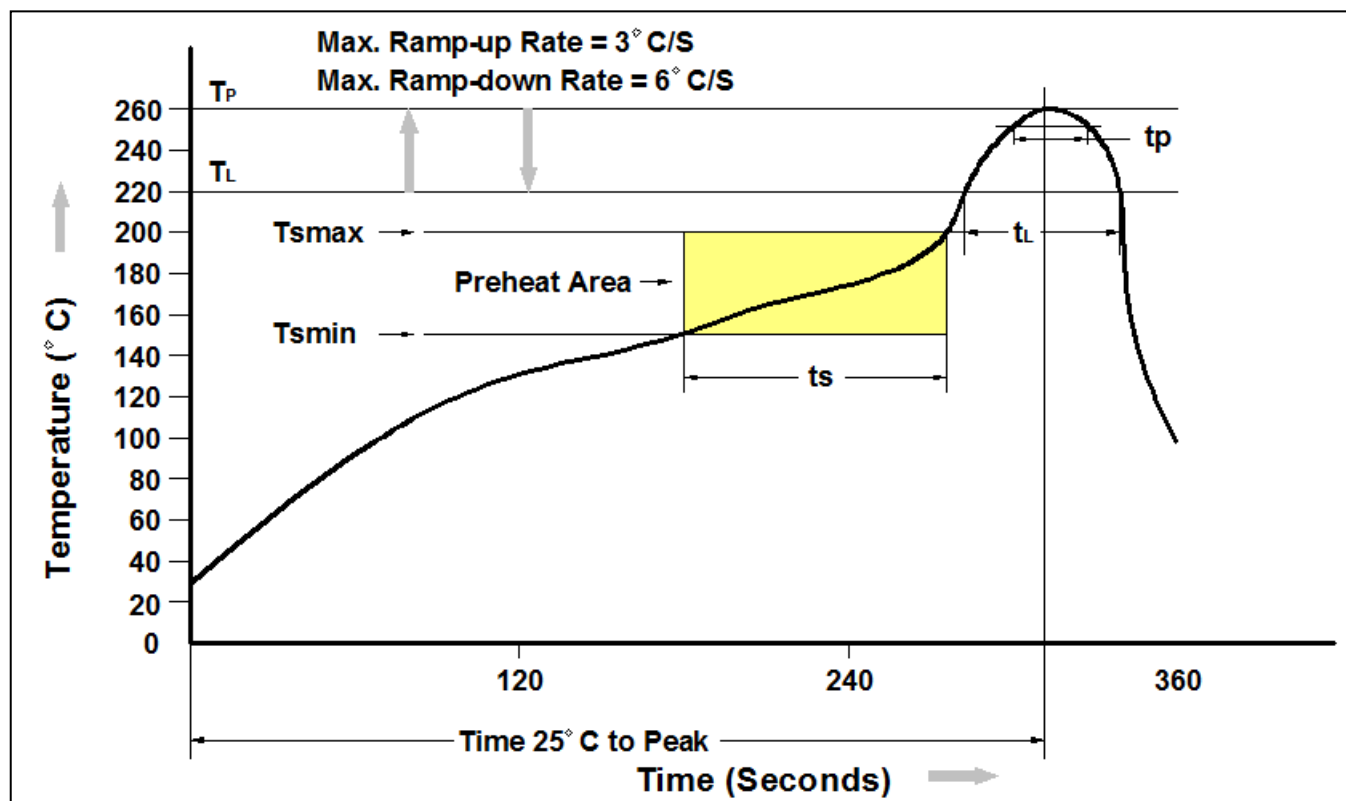
Tape Dimension

All dimensions are in mm, unless otherwise stated





Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	150°C
Temperature Max. (T _{smax})	200°C
Time (t _s) from (T _{smin} to T _{smax})	60-120 seconds
Ramp-up Rate (t _L to t _P)	3°C/second max.
Liquidous Temperature (T _L)	217°C
Time (t _L) Maintained Above (T _L)	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (t _P) within 5°C of 260°C	30 seconds
Ramp-down Rate (T _P to T _L)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



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