

APT1608F3C-P22

1.6 x 0.8 mm Infrared Emitting Diode



DESCRIPTIONS

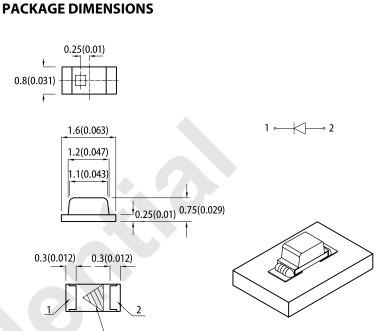
• F3 Made with Gallium Arsenide Infrared Emitting diodes

FEATURES

- 1.6 mm x 0.8 mm SMD LED, 0.75 mm thickness
- · Mechanically and spectrally matched to phototransistor
- Package: 2000pcs / reel
- Moisture sensitivity level : 3
- RoHS compliant

APPLICATIONS

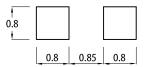
- Backlight
- Status indicator
- · Home and smart appliances
- · Wearable and portable devices
- · Healthcare applications



Polarity mark

RECOMMENDED SOLDERING PATTERN

(units : mm; tolerance : ± 0.1)



Notes:

1. All dimensions are in millimeters (inches).

Tolerance is ±0.1(0.004") unless otherwise noted.
 The specifications, characteristics and technical data described in the datasheet are subject to

change without prior notice. 4. The device has a single mounting surface. The device must be mounted according to the specifications

SELECTION GUIDE

Part Number	Emitting Color	Lens Type Water Clear	Po (mW/sr)	@ 20mA ^[2]	Viewing Angle ^[1]
Fart Number	(Material)	Lens Type	Min.	Min. Typ.	201/2
	APT1608F3C-P22 Infrared (GaAlAs) Water Clear		1.2	3	(- 0 ⁹
APT1608F3C-P22		*0.8	*2	150°	

Notes

- 1. 01/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
 2. Radiant Intensity / luminous flux: +/-15%.
 * Radiant intensity value is traceable to CIE127-2007 standards.

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ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Devementer	Symbol	Emitting Color	Value		11 14
Parameter			Тур.	Max.	Unit
Wavelength at Peak Emission I_F = 20mA	λ_{peak}	Infrared	940	-	nm
Spectral Bandwidth at 50% Φ REL MAX I _F = 20mA	Δλ	Infrared	50	-	nm
Capacitance	С	Infrared	90	-	pF
Forward Voltage I_F = 20mA	V _F ^[1]	Infrared	1.2	1.6	V
Reverse Current (V _R = 5V)	I _R	Infrared	-	10	uA
Temperature Coefficient of Wavelength I_F = 20mA, -10° C $\leq T \leq 85^\circ C$	TC _λ	Infrared	0.3	-	nm/°C
Temperature Coefficient of $~V_F$ I_F = 20mA, -10°C $\leq T \leq 85^\circ C$	TCv	Infrared	-1.2	-	mV/°C

Notes:

Forward voltage: ±0.1V.
 Wavelength value is traceable to CIE127-2007 standards.
 Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

Parameter	Symbol	Value	Unit			
Power Dissipation	PD	90	mW			
Reverse Voltage	V _R	5	V			
Junction Temperature	Tj	115	°C			
Operating Temperature	T _{op}	-40 to +85	°C			
Storage Temperature	T _{stg}	-40 to +85	°C			
DC Forward Current	I _F	50	mA			
Peak Forward Current	I _{FM} ^[1]	1200	mA			
Electrostatic Discharge Threshold (HBM)	-	8000	V			
Thermal Resistance (Junction / Ambient)	R _{th JA} ^[2]	320	°C/W			
Thermal Resistance (Junction / Solder point)	R _{th JS} ^[2]	220	°C/W			

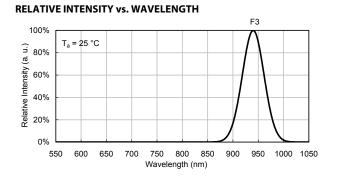
ABSOLUTE MAXIMUM RATINGS at T_A=25°C

Notes:

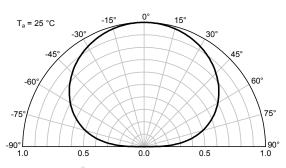
Notes: 1. /1/10 Duty Cycle, 10µs Pulse Width. 2. R_{th JA}, R_{th JS} Results from mounting on PC board FR4 (pad size ≥ 16 mm² per pad). 3. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

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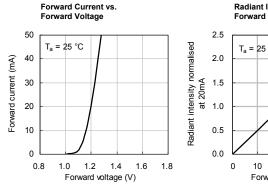
TECHNICAL DATA

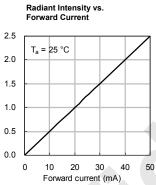


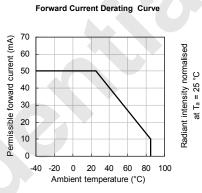
SPATIAL DISTRIBUTION



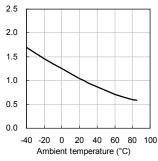
INFRARED



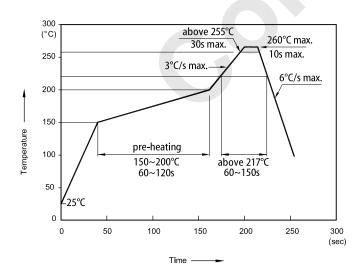








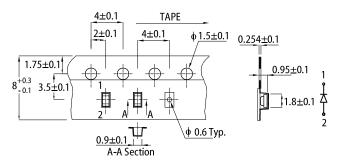
REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS



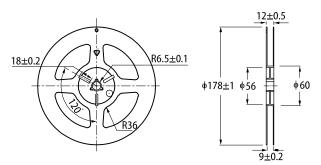
Notes.

- Don't cause stress to the LEDs while it is exposed to high temperature.
 The maximum number of reflow soldering passes is 2 times.
 Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

TAPE SPECIFICATIONS (units : mm)



REEL DIMENSION (units : mm)



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ODE: XXXX (4L) COO: XX

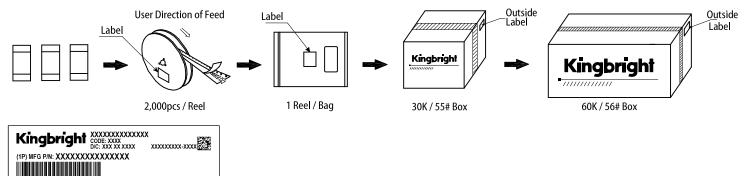
TY: XXXXXXXXXXXXXXXX

1

(33P) CODE: XXXX

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PACKING & LABEL SPECIFICATIONS



PRECAUTIONARY NOTES

- 1. 2.
- The information included in this document reflects representative usage scenarios and is intended for technical reference only. The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
- 3.
- When using the products referenced in this document, please make sure the product is being operated within the environmental and electrical limits specified in the datasheet. If customer usage exceeds the specified limits, Kingbright will not be responsible for any subsequent issues. The information in this document applies to typical usage in consumer electronics applications. If customer's application has special reliability requirements or have life-threatening liabilities, such as automotive or medical usage, please consult with Kingbright representative for further assistance. The contents and information of this document may not be reproduced or re-transmitted without permission by Kingbright. All design applications should refer to Kingbright application notes available at http://www.KingbrightUSA.com/ApplicationNotes 4.
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