APPROVAL SHEET

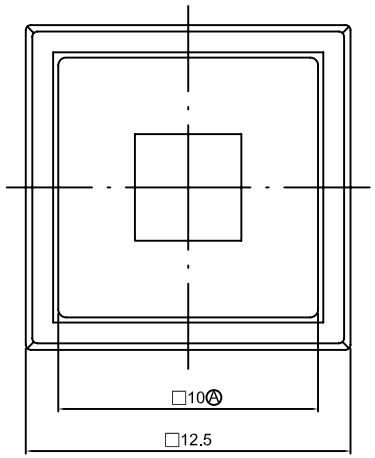
DESCRIPTION: **PUSH BUTTON SWITCH LED**

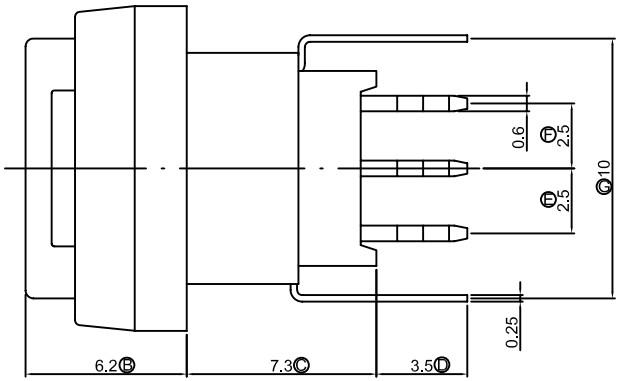
PART NO: **PS004-N22NPS2HKKURXX**

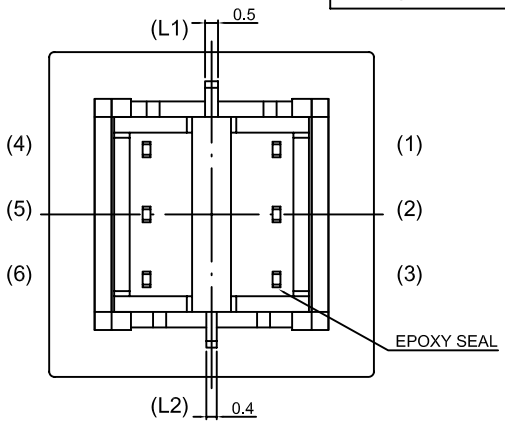
CUSTOMER: MARUTSU	**CUSTOMER'S PART NO:**
CUSTOMER SIGNATURE	**COMMENTS**

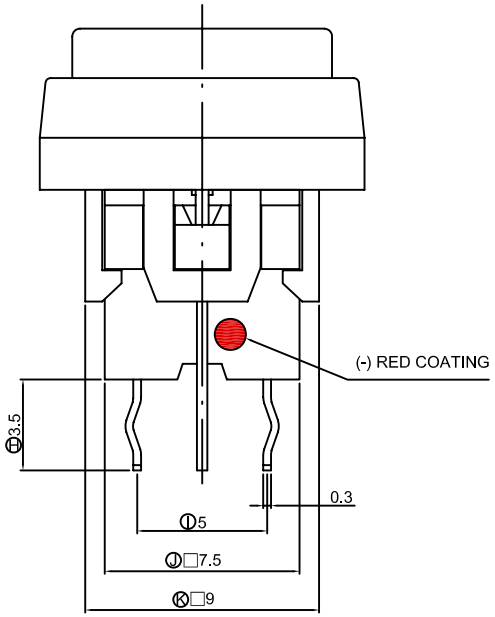
APPROVAL	REVIEW	PREPARE
Kaven	*Tereance*	*Gina*

DIMENSION	TOLERANCE
BELOW 10 mm	± 0.3
10~100 mm	± 0.5
ABOVE 100 mm	± 0.8
ANGLE	± 3°

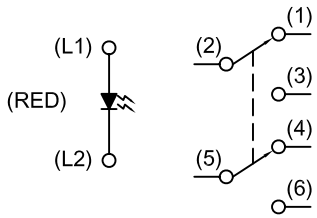




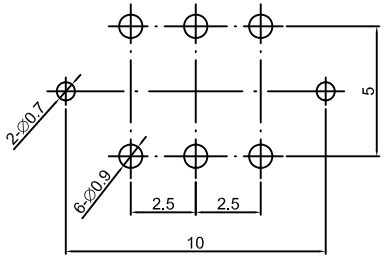




CIRCUIT DIAGRAMS



PCB LAYOUT



1. 2P2T , NON-LOCK TYPE .
2. RATING : 0.1A 30VDC MAX ; 0.1mA 5VDC MIN .
3. CONTACT RESISTANCE : 50 mΩ MAX .
4. INSULATION RESISTANCE : 500 V DC , 100 MΩ MIN .
5. OPERATING TEMPERATURE : -20℃ ~ 70℃ .
6. OPERATING FORCE : 250± 100 gf .
7. OPERATING LIFE : 50,000 CYCLES .
8. CRITICAL DIMENSIONS : 'A' ~ 'K' .

3					DATE	2008/11/17	UNIT	mm	MODE	PUSHBUTTON SWITCH WITH LED
2					APPROVAL	KAVEN	SCALE	1 : 1	PART	PS004-N22NPS2HKKURXX
1					CONFIRM	ALAN	VIEW		2D FILE NAME	PS004-N22NPS2HKKURXX
	DATE	APPROVAL	DESIGN	ENGINEERING CHANGE DESCRIPTION	DESIGN	ANDY	VER.	01	3D FILE NAME	

SPECIFICATIONS OF PS004 SERIES

PUSH BUTTON SWITCH

1. POLE - POSITION：DPDT

2. OPERATING TEMPERATURE RANGE：-20℃ ~ 70℃

3. RATING：0.1A 30 VDC Max / 0.1mA 5 VDC Min .

4. ELECTRICAL PERFORMANCE

	ITEM	TEST CONDITIONS	CRITERIA
4-1	CONTACT RESISTANCE	DC 1.5V 100 mA , BY METHOD OF VOLTAGE DROP.	50 mΩ MAX.
4-2	INSULATION RESISTANCE	DC 500V	100 MΩ MIN.
4-3	DIELECTRIC STRENGTH	AC 500V FOR 1 MINUTE	BREAKDOWN IS NOT ALLOWABLE

5. MECHANICAL PERFORMANCE

	ITEM	TEST CONDITIONS	CRITERIA
5-1	OPERATING FORCE	ALONG THE DIRECTION TO APPLY A STATIC LOAD AT END OF ACTUATOR.	250±100 gf
5.2	TRAVEL	1. FULL TRAVEL 2. CONTACT TRAVEL	1. 1.5 ± 0.3 mm 2. 0.7 ± 0.3 mm
5-3	SOLDERABILITY	245±5℃ IN 5 SECONDS	SOLDER COVERAGE 75% MIN.

6. SOLDERING HEAT RESISTANCE

   6.1 MANUAL: 300±5℃ IN 3 SECONDS.

   6.2 WAVE SOLDERING: 260±5℃ IN 3 SECONDS.

7. DURABILITY:

OPERATING LIFE WITH LOAD AFTER 50,000 CYCLES AT SPEED 15 ~ 20 CYCLES / MINUTE, 1.5 VDC 100 mA RESISTANCE LOAD , AFTER THAT THE SWITCH SHOULD MEET FOLLOWING SPECIFICATIONS.

7.1 CONTACT RESISTANCE：100 mΩ MAX.

7.2 OPERATING FORCE：WITHIN THE RANGE ±30% OF SPECIFICATION.

7.3 INSULATION RESISTANCE：500V DC 100 MΩ MIN.

7.4 DIELECTRIC STRENGTH：500V AC FOR 1 MINUTE, BREAKDOWN IS NOT ALLOWABLE.

8. ENVIRONMENTAL PERFORMANCE

	ITEM	TEST CONDITIONS	CRITERIA
8-1	COLD	-20±2℃ FOR 96 HOURS	1. SWITCH SHOULD MEET REQUIREMENTS OF ITEM 4. 2. MECHANINCAL PERFORMANCE SHOULD REMAIN TO NORMAL.
8-2	DRY HEAT	70℃±2℃ FOR 96 HOURS	1. SWITCH SHOULD MEET REQUIREMENTS OF ITEM 4. 2. MECHANINCAL PERFORMANCE SHOULD REMAIN TO NORMAL.
8-3	DAMP HEAT	40℃±2℃ 90% ~ 95%RH FOR 96 HOURS	1. SWITCH SHOULD MEET REQUIREMENTS OF ITEM 4. 2. MECHANINCAL PERFORMANCE SHOULD REMAIN TO NORMAL.

9. LED SPECIFICATIONS

LED SPECIFICATIONS WILL BE FURNISHED DEPENDING ON DIFFERENT LED COLOR DEMAND.

SUBMINIATURE SOLID STATE LAMP

Part Number:

Hyper Red

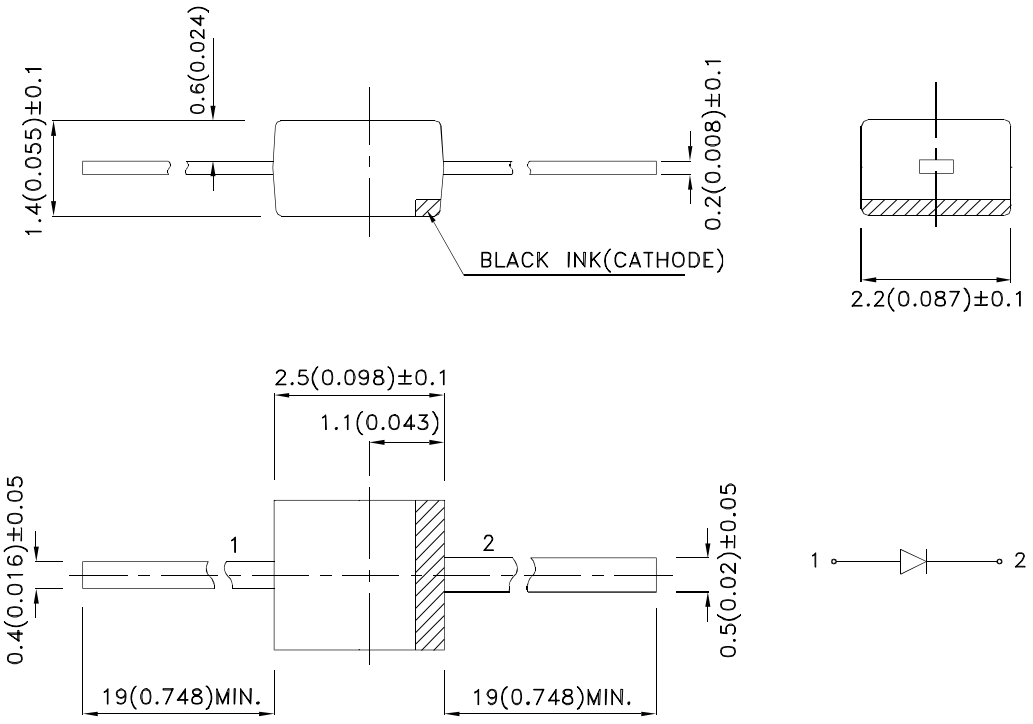
Features

- Subminiature package.
- Wide viewing angle.
- Long life-solid state reliability.
- Low package profile.
- Moisture sensitivity level : level 3.
- RoHS compliant.

Description

The Hyper Red source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.

Package Dimensions



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) [2] @ 20mA			Viewing Angle [1]
			Min.	Typ.	Max.	2θ1/2
.	Hyper Red (AlGaInP)	Water Clear	80	200	400	140°

Notes:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity/ luminous Flux: +/-15%.

Electrical / Optical Characteristics at TA=25°C

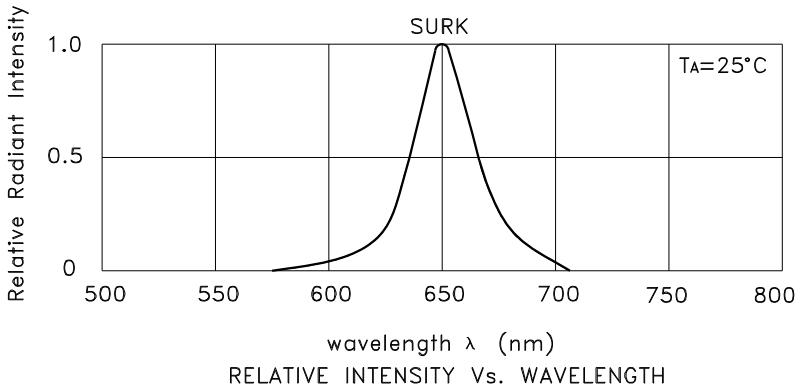
Symbol	Parameter	Device	Min.	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Hyper Red		650		nm	I_F=20mA
λD [1]	Dominant Wavelength	Hyper Red	620	630	640	nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Hyper Red		28		nm	I_F=20mA
C	Capacitance	Hyper Red		35		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Hyper Red	1.6	1.95	2.5	V	I_F=20mA
I_R	Reverse Current	Hyper Red			10	uA	V_R = 5V

Notes:
1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

Absolute Maximum Ratings at TA=25°C

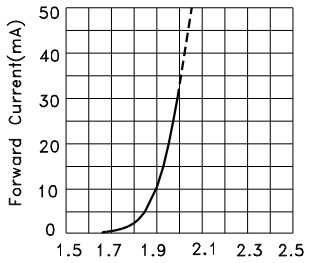
Parameter	Hyper Red	Units
Power dissipation	75	mW
DC Forward Current	30	mA
Peak Forward Current [1]	185	mA
Reverse Voltage	5	V
Electrostatic Discharge Threshold (HBM)	3000	V
Operating/Storage Temperature	-40°C To +85°C	
Lead Solder Temperature [2]	260°C For 3 Seconds	
Lead Solder Temperature [3]	260°C For 5 Seconds	

Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.
3. 5mm below package base.

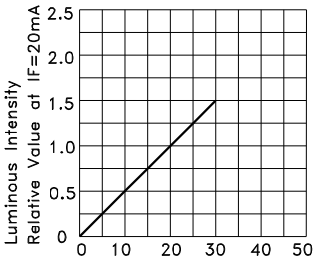


RELATIVE INTENSITY Vs. WAVELENGTH

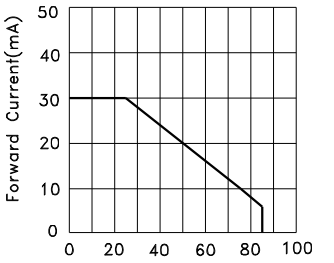
Hyper Red



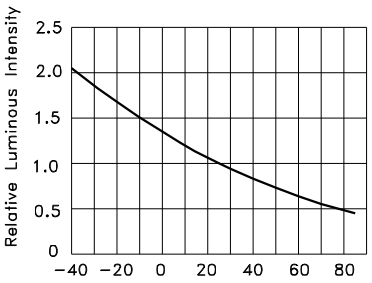
FORWARD CURRENT Vs.
FORWARD VOLTAGE



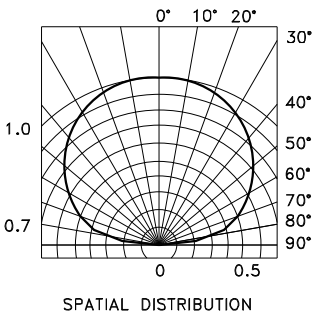
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



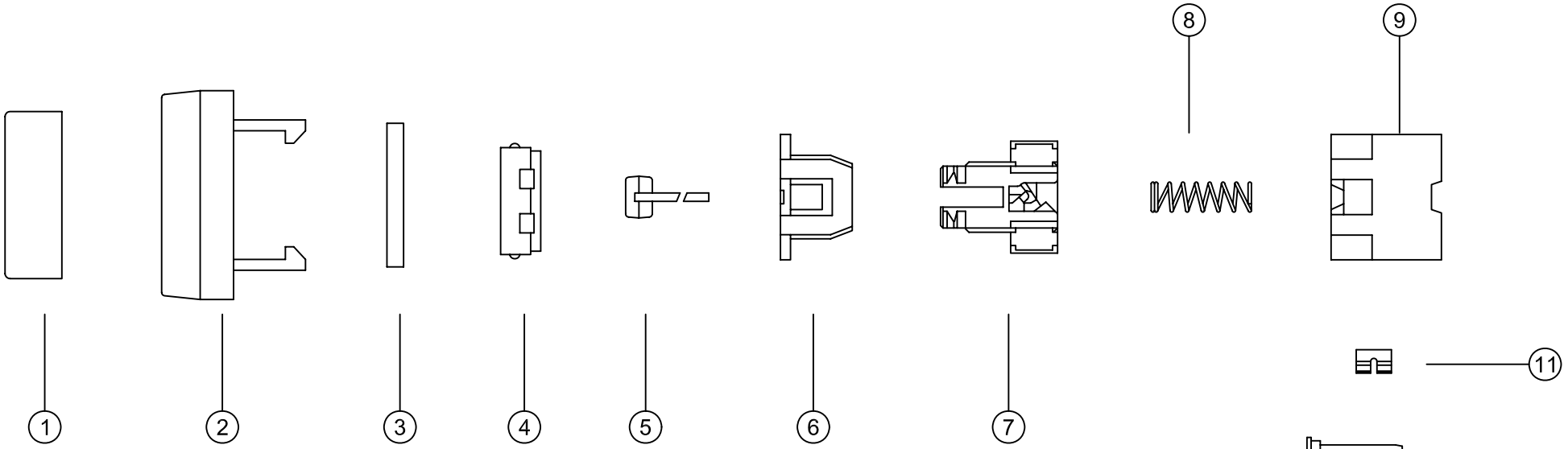
FORWARD CURRENT
DERATING CURVE

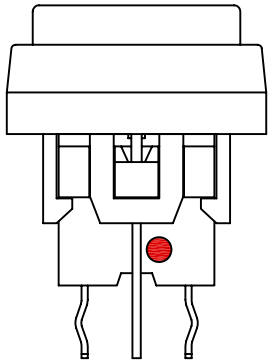


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION





NO.	PART NAME	QTY	MATERIAL	SPECIAL DEAL	RoHS REPORT No.
1	LED COVER	1	PC-143R111	BLACK	TWNC00277207S1
2	KNOB FRAME	1	PA66+33%GF	BLACK	CE/2014/25430; CANEC1403097001
3	FLUORESCENT PLATE	1	PC-143R111	WHITE TRANSPARENT	TWNC00277207S1
4	KNOB	1	PA66+33%GF	WHITE	CE/2014/25430;CANEC1311693101;CANEC1311693102
5	LED	1		ULTRA RED	SZHH00845291025;SZHH00853916
6	COVER	1	PA66+33%G	BLACK	CE/2014/25430; CANEC1403097001
7	ACTUATOR	1	PA66+33%G	WHITE	CE/2014/25430;CANEC1311693101;CANEC1311693102
8	SPRING	1	STAINLESS STEEL		F690101-LF-CTSAYAA14-03884
9	BASE FRAME	1	PA66+33%G	BLACK	CE/2014/25430; CANEC1403097001
10	BOARD WITH TERMINAL	2	PA66+33%G	BLACK	CE/2014/25430; CANEC1403097001
11	CLIP	2	PHOSPHOR BRONZE	SILVER CLAD	CE/2014/11747; CANEC1401599601
12	TERMINAL	2	BRASS	SILVER PLATING	CE/2014/11738; CANEC1401599601

3					DATE	2010/01/19	UNIT	mm	MODE	PUSHBUTTON SWITCH WITH LED
2					APPROVAL	KAVEN	SCALE	1 : 1	PART	PS004-N22NPS2HKKURXX
1					CONFIRM	ALAN	VIEW		2D FILE NAME	PS004-N22NPS2HKKURXX MATERIAL LIST
	DATE	APPROVAL	DESIGN	ENGINEERING CHANGE DESCRIPTION	DESIGN	ANDY	VER.	01	3D FILE NAME	