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APPROVAL SHEET

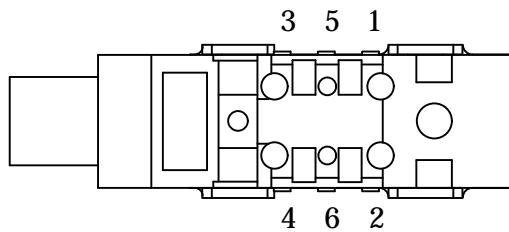
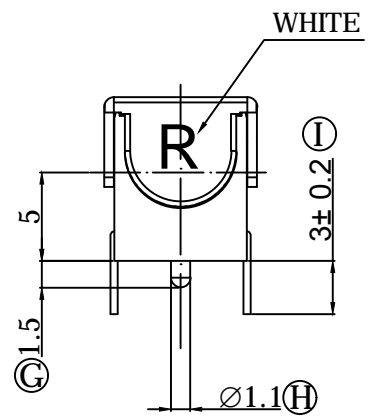
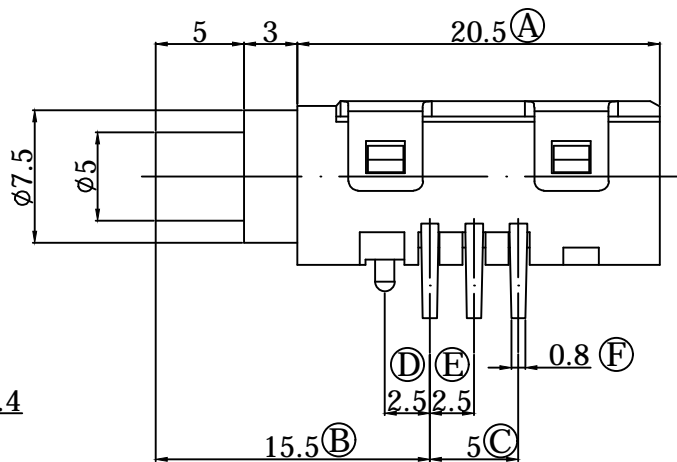
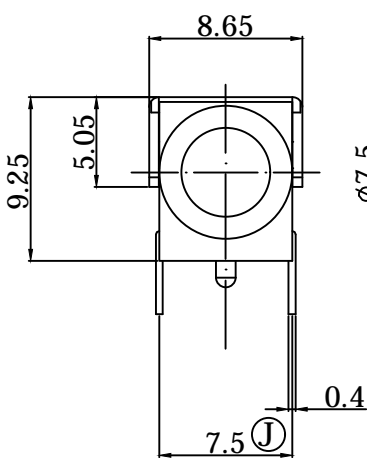
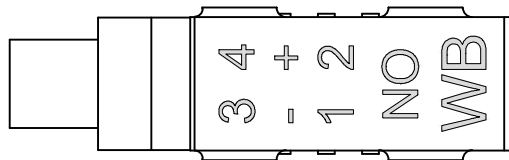
DESCRIPTION: PUSH BUTTON SWITCH

PART NO: LS-A1LAR

CUSTOMER: _____	CUSTOMER'S PART NO: _____
CUSTOMER SIGNATURE	COMMENTS



APPROVAL	REVIEW	PREPARE
<i>Kaven</i>	<i>Tereance</i>	<i>Gina</i>



1. POLE POSITION : 1P1T LOCK TYP
2. RATING : 36 V DC 0.2A .
3. CONTACT RESISTANCE : 40mΩ M
4. INSULATION RESISTANCE : 500V
5. OPERATING FORCE : 300± 100gf
6. OPERATING TEMPERATURE RAN
7. OPERATING LIFE : 10,000 CYCLE
- 8.CRITICAL DIMENSIONS : 'A' ~ 'J'.
- 9.TOTAL TRAVEL: FULL TRAVEL:2.4
CONTACT TRAVE

△					DATE	2012/02/03	UNIT	mm	MODE	PUR
△					APPROVAL	KAVEN	SCALE	1 : 1	PART	LS-
△					CONFIRM	TEREANCE	VIEW		2D FILE NAME	LS-
	DATE	APPROVAL	DESIGN	ENGINEERING CHANGE DESCRIPTION	DESIGN	HQ	VER.	01	3D FILE NAME	

WELL BUYING INDUSTRIAL CO., LTD.
SPECIFICATIONS OF LS SERIES
PUSH BUTTON SWITCH WITH LED

1. POLE - POSITION : SPST, DPST MOMENTARY TYPE.

2. OPERATING TEMPERATURE RANGE : -40°C ~ 85°C

3. RATING : 36 VDC 0.2A

4. ELECTRICAL PERFORMANCE

	ITEM	TEST CONDITIONS	CRITERIA
4-1	CONTACT RESISTANCE	DC 1.5V 100 mA, BY METHOD OF VOLTAGE DROP.	40 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.	(1P1T · 2P1T) 200±100gf (LOCK TYPE) 300±100gf
5-2	ROBUSTNESS OF TERMINAL	TO APPLY A STATIC LOAD 500 gf AT END OF TERMINAL, ANY DIRECTIONS FOR 1 MINUTE. AND ONCE FOR A TERMINAL ONLY.	TERMINAL COULD BE BENT BUT LOOSENED TERMINAL OR BOARD BROKEN IS NOT ALLOWABLE.
5-3	ROBUSTNESS OF ACTUATOR	ALONG OPERATING DIRECTION TO APPLY A STATIC LOAD 3 Kgf TO THE END OF ACTUATOR UNTIL ACTUATOR STOPS ITS MOVEMENT, LAST FOR 1 MINUTE.	ACTUATOR BROKEN OR ANY UNSUAL APPEARANCE OCCURRED ON SWITCH CONSTRUCTION IS NOT ALLOWABLE.
5-4	SOLDERABILITY	260±5°C IN 3 SECONDS	SOLDER COVERAGE 75% Min

6. RESISTANCE OF SOLDERING HEAT

6-1 MANUAL SOLDERING : 300°C IN 3 SECONDS

6-2 WAVE SOLDERING : 260°C IN 3 SECONDS

7. DURABILITY :

OPERATING LIFE WITHOUT LOAD AFTER 10,000 CYCLES

7-1 CONTACT RESISTANCE : 50 mΩ MAX.

7-2 OPERATING FORCE : WITHIN THE RANGE ±30% OF SPECIFICATION.

7-3 INSULATION RESISTANCE : 500V DC 10 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	-40±2°C FOR 24 HOURS	1. IT SHOULD MEET THE REQUIREMENT OF ITEM 4 STATED. 2. MECHANICAL PERFORMANCE SHOULD REMAIN TO NORMAL.
8-2	DRY HEAT	85°C±2°C FOR 48 HOURS	1. CONTACT RESISTANCE SHOULD BE LESS THAN 50mΩ. 2. IT SHOULD MEET THE REQUIREMENTS OF 4-2, 4-3.AND ITEM 5. 3. MECHANICAL PERFORMANCE SHOULD REMAIN TO NORMAL.
8-3	DAMP HEAT	40°C±2°C 90% ~ 95%RH FOR 96 HOURS	1. CONTACT RESISTANCE SHOULD BE LESS THAN 50 mΩ. 2. INSULATION RESISTANCE SHOULD BE HIGHER THAN 10 MΩ. 3. DIELECTRIC STRENGTH SHOULD MEET THE REQUIREMENTS OF 4-3. 4. MECHANICAL PERFORMANCE SHOULD REMAIN TO NORMAL.

9. LED SPECIFICATIONS WILL BE FURNISHED DEPENDING ON DIFFERENT LED COLOR DEMAND A SINGLE BIN CANNOT BE ORDERED. PLEASE CONTACT US IN ADVANCE. IF YOU NEED A PARTICULAR BIN SORTING BEFORE PLACING YOUR ORDER TO CLARIFY THE LEAD TIME, MOQ AND PRICING

10. PACKING AND SHIPPING:

LS	84 PCS/ TRAY
	15 TRAY/CTN
	1,260 PCS/CTN
CARTON SIZE	41*32*17 CM

3mm Rounded LED Lamps



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

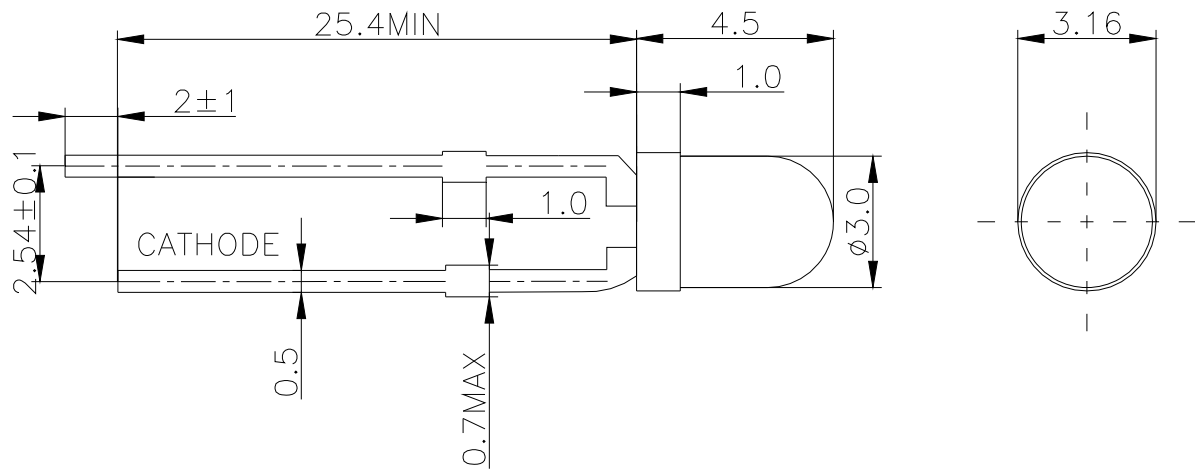
Features

- Low power consumption
- Excellent product quality and reliability
- Lead-free device.

Applications

- Electronic signs and signals
- Bright ambient lighting conditions
- Backlights.
- General purpose indicators

◆ Package Dimensions



Notes:

1. All dimensions are in millimeters.
 2. Tolerance is ±0.25 unless otherwise noted.
 3. Lead spacing is measured where the leads emerge from the package.
 4. Specifications are subject to change without notice.
-

◆ Device Selection Guide

Part No.	Chip		Lens color
		Material	Emitted color
	GaP	Red	

◆ Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	50	mW
Forward Current	I _F	30	mA
Peak Forward Current*1	I _{FP}	100	mA
Reverse Voltage	V _R	5	V
Operating Temperature	T _{opr}	-40°C To +85°C	
Storage Temperature	T _{stg}	-40°C To +85°C	
Soldering Temperature*2	T _{sol}	260°C For 5 Seconds	

Notes:

*1: Pulse width≤0.1ms, Duty cycles≤1/10

*2: 1.6mm below package base.

◆ Electrical / Optical Characteristics at TA=25°C

Parameter	Symbol	Min.	Typ.	Max	Unit	Test Conditions
Forward Voltage	V _F	1.8 1.7	2.1 2.1	2.6 2.5	V	I _F =5mA I _F =20mA
Reverse Current	I _R	—	—	10 10	μA	V _R =5V
Dominant Wavelength	λ _d	625 625	630 630	635 635	nm	I _F =5mA I _F =20mA
Peak Wavelength	λ _P	—	640 640	—	nm	I _F =5mA I _F =20mA
Spectral line Half-width	Δλ	—	15 15	—	nm	I _F =5mA I _F =20mA
Luminous Intensity	I _v	60 250	80 400	150 600	mcd	I _F =5mA I _F =20mA
Power Angle	2θ _{1/2}	—	50	—	Deg.	I _F =5mA I _F =20mA

Remarks:

If special sorting is required (e.g. binning based on forward voltage, luminous intensity, or dominant wavelength), the typical accuracy of the sorting process is as follows:

1. Dominant Wavelength: +/-1nm
2. Chromatic Coordinates: +/-0.01
3. Luminous Intensity: +/-15%
4. Forward Voltage: +/-0.1V
5. The design and working Current for Led is not less than 2mA.

◆ VF Rank

Rank	VF(V)		Condition
	Min	Max	
A2B1	1.8	2.0	IF=5或20mA
B2C1	2.0	2.2	
C2D1	2.2	2.4	
D2F1	2.4	2.6	

Tolerance:±0.1V

Rank	Ad(nm)		Condition
	Min	Max	
R3	625	630	IF=5或20mA
R4	630	635	

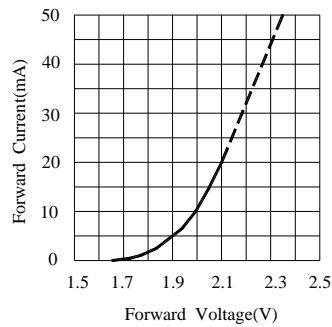
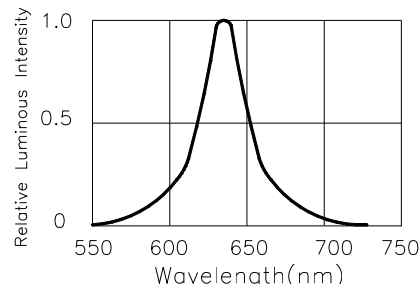
Tolerance:±1nm

◆ IV Rank

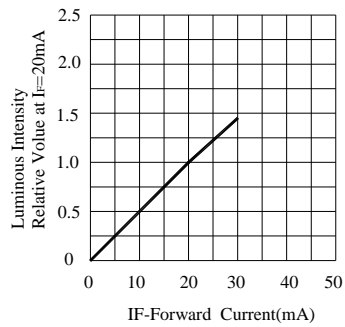
Rank	IV(mcd)		Condition
	Min	Max	
H	60	100	IF=5mA
I	100	150	
Rank	IV(mcd)		Condition
	Min	Max	
K	250	400	IF=20mA
L	400	600	

Tolerance:±15%

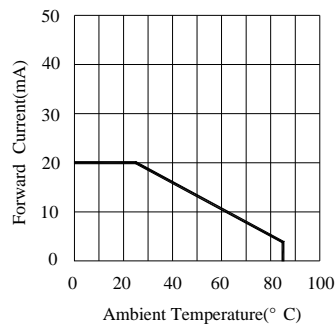
◆ Typical Electrical/Optical Characteristics Curves
 (Ta=25°C Unless Otherwise Noted)



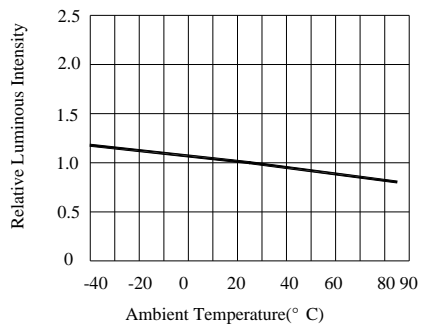
FORWARD CURRENT Vs.
 FORWARD VOLTAGE



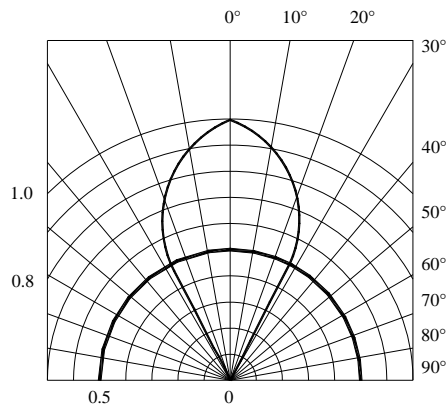
LUMINOUS INTENSITY Vs.
 FORWARD CURRENT



FORWARD CURRENT
 DERATING CURVE

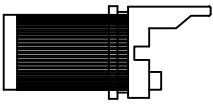


LUMINOUS INTENSITY Vs.
 AMBIENT TEMPERATURE



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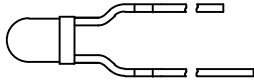
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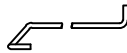
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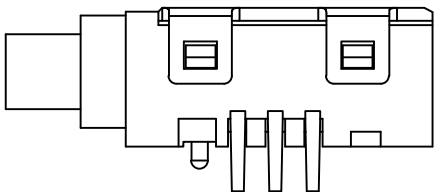
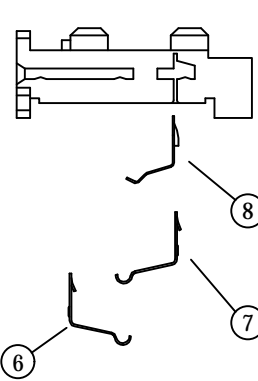
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④



⑤



NO.	PART NAME	QTY	MATERIAL
1	LED COVER	1	PC
2	STEADY HOLDER	1	PA66
3	LED	1	
4	LOCK PIN	1	STAINLESS STEEL
5	ACTUATOR	1	PA66
6	MOVING CONTACT	1	PHOSPHOR BRONZE
7	MOVING CONTACT	1	PHOSPHOR BRONZE
8	MOVING CONTACT	1	PHOSPHOR BRONZE
9	BASE FRAME	1	PA66
10	TERMINAL	1	BRASS
11	COVER	1	PA66
12	SPRING	1	STAINLESS STEEL

△					DATE	2012/06/07	UNIT	mm	MODE	PUS
△					APPROVAL	KAVEN	SCALE	1 : 1	PART	L
△					CONFIRM	TEREANCE	VIEW		2D FILE NAME	LS-A11
	DATE	APPROVAL	DESIGN	ENGINEERING CHANGE DESCRIPTION	DESIGN	HQ	VER.	01	3D FILE NAME	

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