

SPECIFICATION

FOR APPROVAL

ISSUED DATE : Feb. 28th. 2008

DOCUMENT NO. : KPDC-KEL1ML2-01

CUSTOMER :

DESCRIPTION : IRED

MODEL NO. : KEL-1ML2

[KODENSHI KOREA CORP.]

ISSUE DEPT.			BRD		SBU		Q/A	
ISSUE	REVIEW	APPR'L	REVIEW	APPR'L	REVIEW	APPR'L	REVIEW	APPR'L

[CUSTOMER APPROVAL]

ISSUE	REVIEW					

[REVISION]

NO	DATE	REVISION ITEMS	ISSUED BY	APPR'D BY

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KKC takes no responsibility for damage caused by improper use of the devices which does not meet the conditions and absolute maximum ratings to be used specified in the relevant specification sheet.

Please obey the instructions mentioned below for actual use of this device.

① This device is designed for general electronic equipment.

Main use of this device are as follows;

[* Computer * OA equipment * Telecommunication equipmet(Terminal)
* Measuring instrument * Machine tool *Industrial robot
* AV equipment * Home appliance,etc.]

② Please take proper steps in order to maintain reliability and safety, in case this device is used for the uses mentioned below which require high reliability.

[* Unit concerning control and safety of a vehicle (air plane,train,automobile etc.)
* Traffic signal * Gas leak detection breaker
* Fire box and burglar alarm box * Other safety equipment,etc.]

③ Please don't use for the uses mentioned below which require extremely high reliability.

[* Space equipment * Telecommunication equipment(Trunk)
* Nuclear control equipment * Medical equipment(relating to any fatal element),etc.]

1. Description

The KEL-1ML2 is high power, wide beam angle GaAs infrared emitting diode with TO-18 metal stem and clear epoxy lens. This device is relatively low-cost compared to TO-18 can type devices.

2. Features

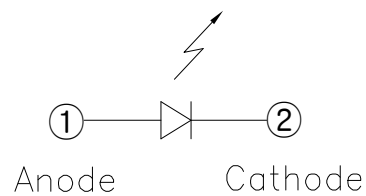
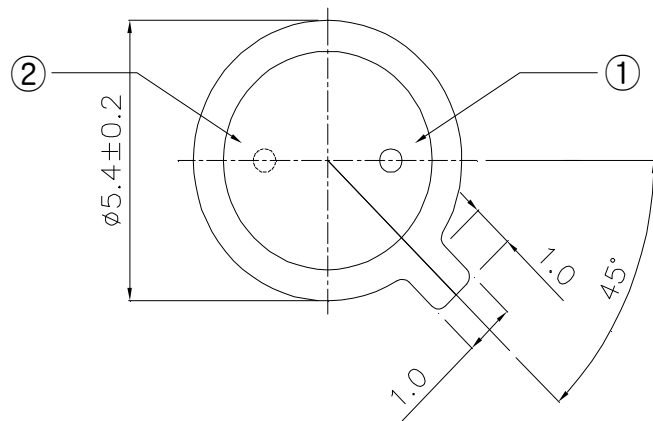
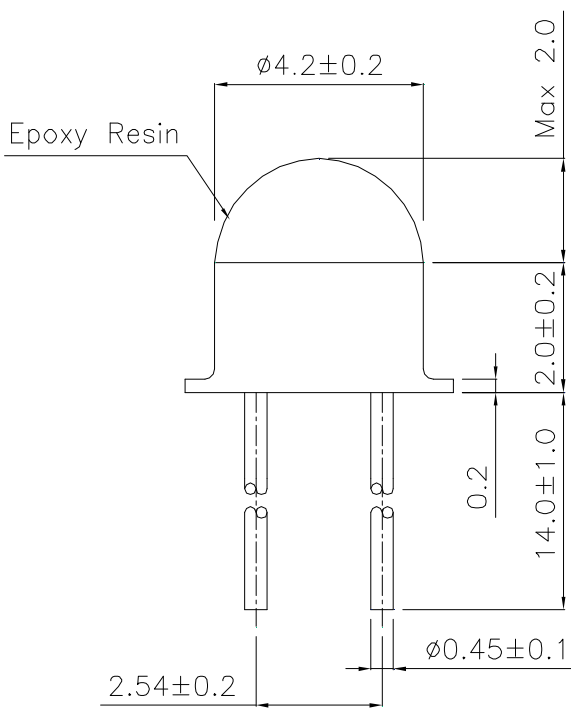
- ◆ 940nm wavelength
- ◆ High power and high reliability
- ◆ Available for pulse operating

3. Applications

- ◆ Encoders
- ◆ Optical Switches
- ◆ Optical readers

4. Package Outline

[Unit : mm]



NOTE

1. General Tolerance : ± 0.2
2. () : Reference Dimension

5. Absolute Maximum Ratings

[Ta = 25°C]

Parameter	Symbol	Ratings	Unit
Power dissipation	PD	75	mW
Forward current	IF	50	mA
Pulse forward current *1	IFP	0.1	A
Reverse voltage	VR	5.0	V
Operating temp.	Topr.	-25 ~ +100	°C
Storage temp.	Tstg.	-25 ~ +100	°C
Soldering temp. *2	Tsol.	260	°C

*1. Pulse width : $t_w \leq 100 \mu s$, Period : $T = 10 \text{ ms}$.

*2. For MAX. 5 seconds at the position of 2mm from the package.

6. Electro-optical Characteristics

[Ta= 25°C]

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward voltage	VF	IF = 50 mA	-	1.2	1.5	V
Reverse current	IR	VR = 5 V	-	-	10	μA
Peak emission wavelength	λ_p	IF = 50 mA	-	940	-	nm
Spectral bandwidth 50%	$\Delta\lambda$	IF = 50 mA	-	45	-	nm
Radiant intensity	Po	IF = 50 mA	-	2.7	-	mW
Half angle	$\Delta\theta$	-	-	± 32	-	deg.

7. Inspection Criteria

7-1. In electrical-optical characteristics, 100% inspection be done on following 3 items.

- Forward Voltage : VF
- Reverse Current : IR
- Radiant Intensity : Po

7-2. No particular inspections shall be carried out for items other than those above.

However they shall satisfy the ratings.

8. Caution On Usage

- 8-1. Store and use where there is no exterior force that will cause change in shape etc.
- 8-2. Store and use where is no Hydrogen Sulfide gas, or any other corrosive gas.
- 8-3. The bending or cutting of the lead should be done in room temperature and no force applied on the package.
- 8-4. Solder the lead pin under the conditions of the characteristics chart, and do not apply force on the lead pin after soldering.

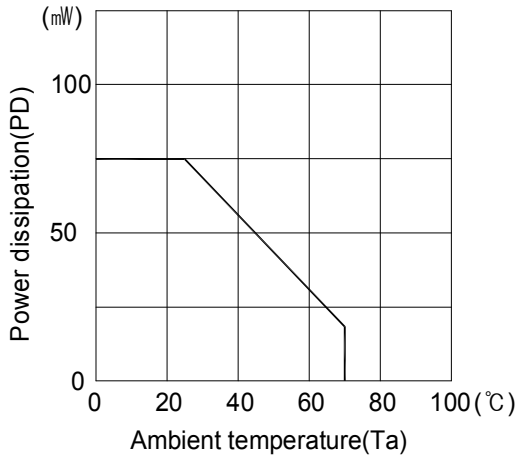
9. Guarantee Period And Scope

- 9-1. Period
 - 1 year after shipment to desired place.
- 9-2. Scope
 - A replacement of products will be carried out if the problem lies in our company's product,
 - However, no responsibilities will be taken for indirect inconvenience caused

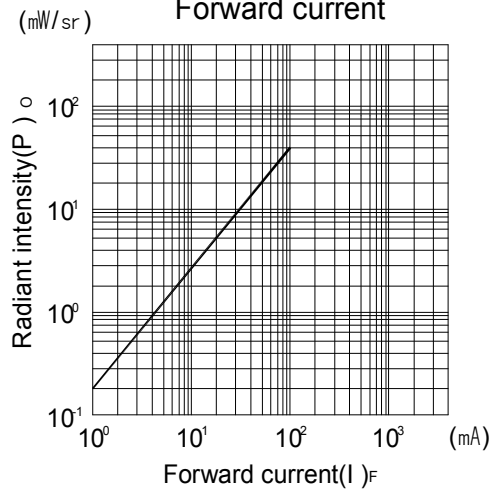
10. Others

- 10-1. Any doubts concerning this specification should be discussed fully by both parties.

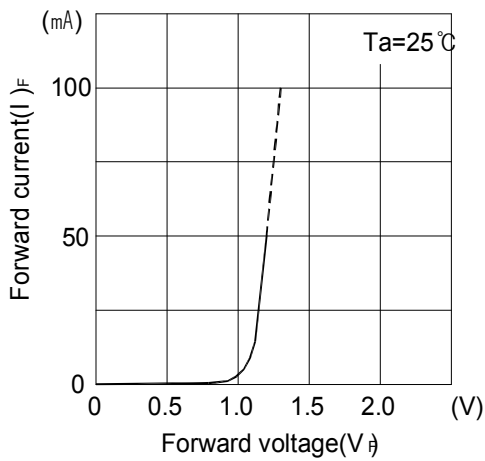
Power dissipation Vs. Ambient temperature



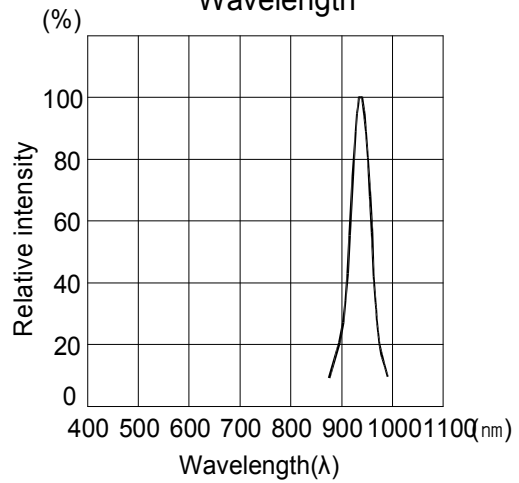
Relative intensity Vs. Forward current



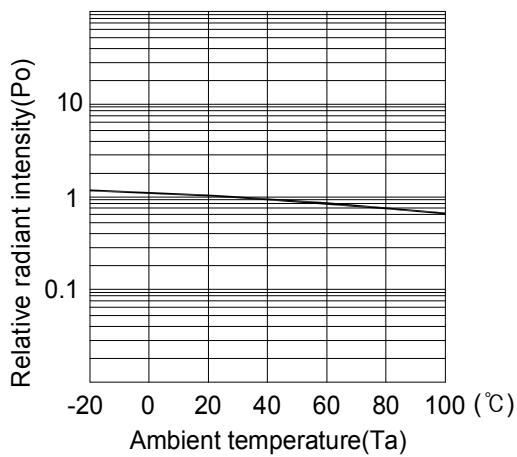
Forward current Vs. Forward voltage



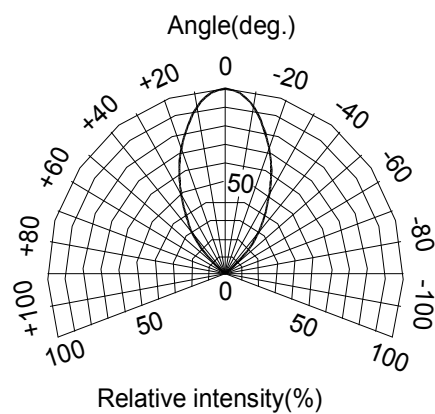
Relative intensity Vs. Wavelength



Relative radiant intensity Vs. Ambient temperature



Radiant Pattern



No.	DEVICE	항목	LIMIT	COND.
23	EL-1KL5	VF BVR PO	1.7V↓ 5.0V↑ A:14.0~26.0 B:22.0~42.0 C:34.0~59.0 D:49.0mV↑	100mA 10μA 100mA
24	EL-1KL6	VF BVR PO	1.7V↓ 5.0V↑ A:9.0~18.0 B:14.0~26.0 C:22.0~42.0 D:34.0mV↑	100mA 10μA 100mA
25	EL-1L1	VF BVR PO	1.7V↓ 5.0V↑ A:90.0~165.0 B:135.0~220.0 C:180.0mV↑	100mA 10μA 100mA
26	EL-1L1-NO	VF BVR PO	1.7V↓ 5.0V↑ A:100.0~149.9 B:150.0~199.9 C:200.0mV↑	100mA 10μA 100mA
27	EL-1L2	VF BVR PO	1.7V↓ 5.0V↑ C:54.0~83.0 D:68.0~95.0 S:77.0~110.0 E:95.0~130.0 F:110.0mV↑	100mA 10μA 100mA
28	EL-1ML2	VF BVR PO	1.5V↓ 5.0V↑ A:16.0~28.0 B:23.0~33.0 C:27.0~42.0 D:34.0~45.0 E:37.0mV↑	50mA 10μA 50mA
29	EL-1ML2Z	VF BVR PO	1.5V↓ 6.0V↑ 1:280~600 10μA單位 分極 2:600μA↑	50mA 10μA 5V
30	EL-1ML3	VF BVR PO	1.7V↓ 5.0V↑ A:19.0~36.0 B:30.0~40.0 C:32.0mV↑	50mA 10μA 50mA

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