

ROUND TYPE LED LAMPS



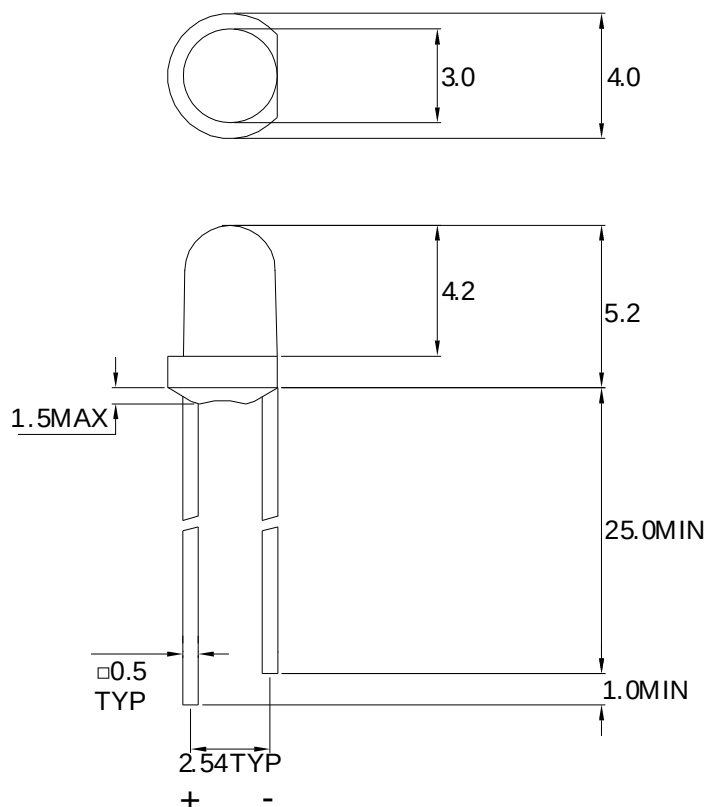
Lead-Free Parts

PRELIMINARYThis is just a preliminary design
to let you evaluate the conceptL8VRF2040/A-PF

DATA SHEET

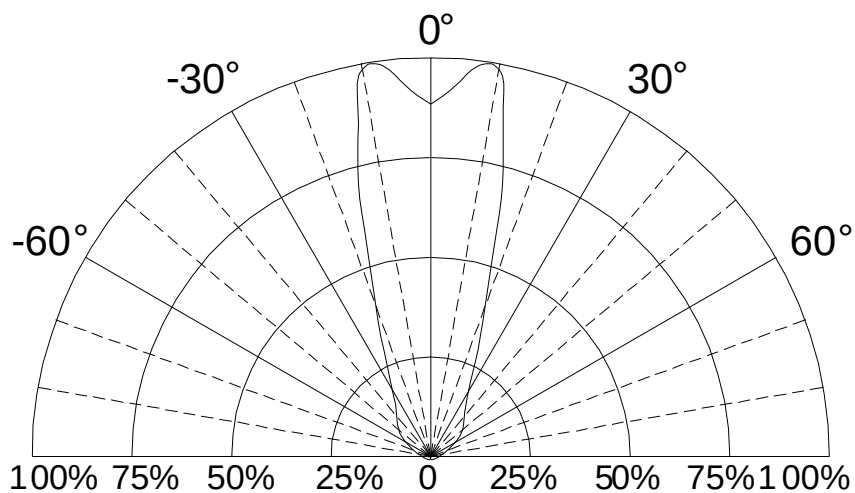
DOC. NO : IMQW0905-L8VRF2040/A-PFREV. : ADATE : 18 -Apr. - 2021

Package Dimensions



Note : 1. All dimension are in millimeter tolerance is ± 0.25 mm unless otherwise noted.
2. Specifications are subject to change without notice.

Directivity Radiation



Absolute Maximum Ratings at Ta=25 °C

Parameter	Symbol	Ratings	UNIT
		8VRF	
Forward Current	IF	20	mA
Peak Forward Current Duty 1/10@10KHz	IFP	70	mA
Power Dissipation	PD	50	mW
Reverse Current @5V	Ir	10	μ A
Electrostatic Discharge(*)	ESD	2000	V
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +100	°C

★ Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrosatic glove is recommended when handing these LED. All devices, equipment and machinery must be properly grounded.

Typical Electrical & Optical Characteristics (Ta=25 °C)

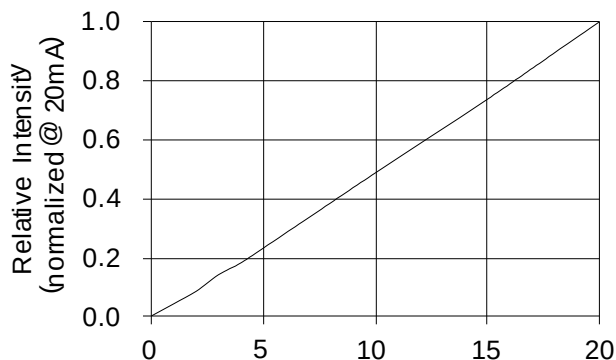
PART NO	MATERIAL	COLOR		Peak wave length λ Dnm	Spectral halfwidth △ λ nm	Forward voltage @20mA(V)		Luminous intensity @ 20mA(mcd)		Viewing angle 2 θ 1/2 (deg)
		Emitted	Lens			Min.	Max.	Min.	Typ.	
L8VRF2040/A-PF	AlGaInP	Red	Red Diffused	640	20	1.5	2.4	160	350	36

Note : 1. The forward voltage data did not including ±0.1V testing tolerance.
2. The luminous intensity data did not including ±15% testing tolerance.

Typical Electro-Optical Characteristics Curve

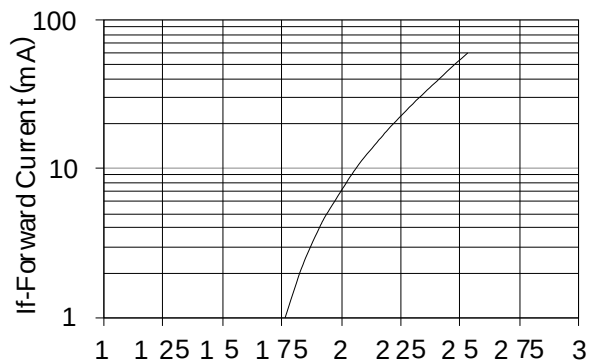
8VRF CHIP

Fig.1-Relative Luminous Intensity vs. Forward Current



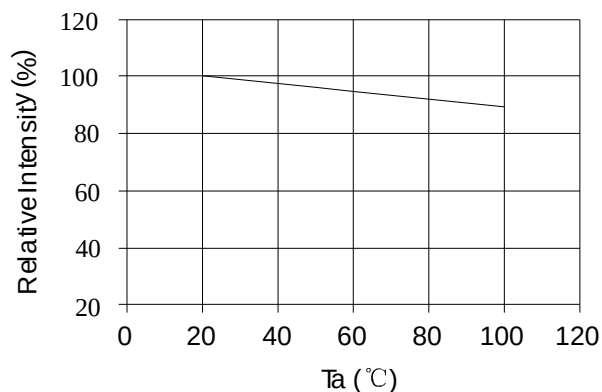
If - Forward Current(mA)

Fig.2-Forward Current vs. Forward Voltage



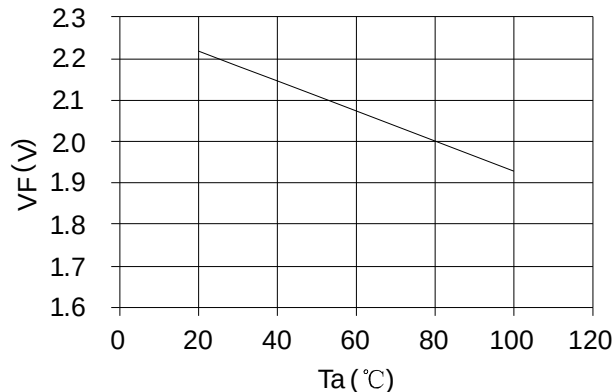
Vf-Forward (V)

Fig.3-Relative Intensity (@20mA) vs. Ambient Temperature



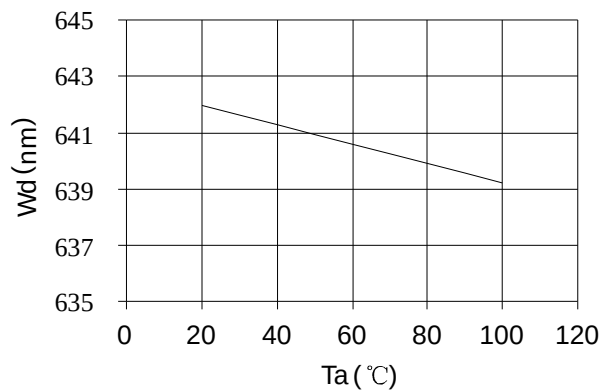
Ta (°C)

Fig.4-Forward Voltage (@20mA) vs. Ambient Temperature



Ta (°C)

Fig.5-Dominant Wavelength (@20mA) vs. Ambient Temperature



Ta (°C)

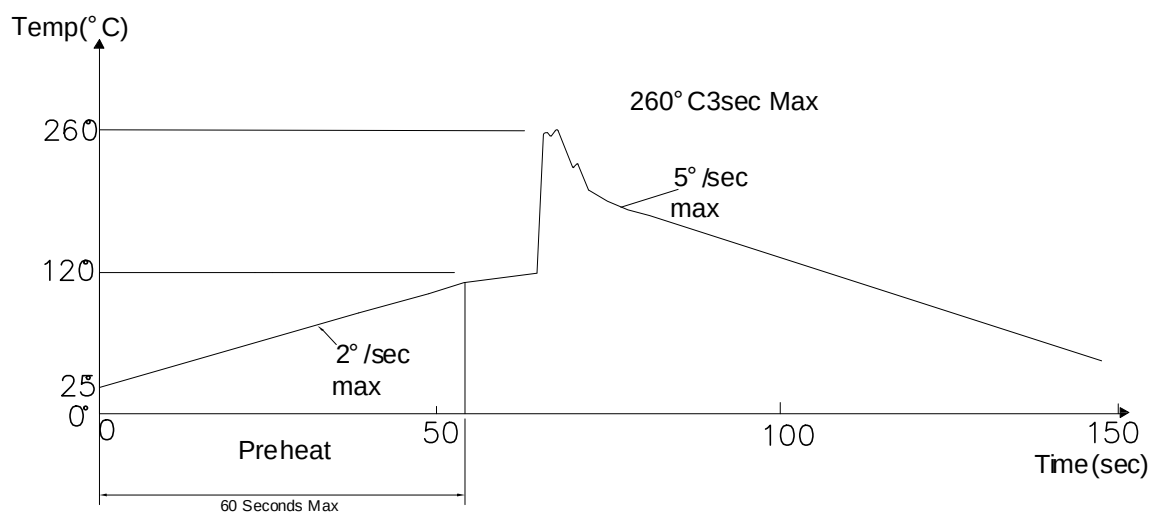
Soldering Condition(Pb-Free)

1.Iron:

Soldering Iron:30W Max
Temperature 350° C Max
Soldering Time:3 Seconds Max(One time only)
Distance:2mm Min(From solder joint to body)

2.Wave Soldering Profile

Dip Soldering
Preheat: 120° C Max
Preheat time: 60seconds Max
Ramp-up
2° C/sec(max)
Ramp-Down:-5° C/sec(max)
Solder Bath:260° C Max
Dipping Time:3 seconds Max
Distance:2mm Min(From solder joint to body)



Note: 1.Wave solder should not be made more than one time.
2.You can just only select one of the soldering conditions as above.

Reliability Test:

Test Item	Test Condition	Description	Reference Standard
Operating Life Test	1.Under Room Temperature 2.If=20mA 3.t=1000 hrs (-24hrs, +72hrs)	This test is conducted for the purpose of determining the resistance of a part in electrical and thermal stressed	MIL-STD-750:1026 MIL-STD-883:1005 JIS C 7021: B-1
High Temperature Storage Test	1.Ta=105 °C ±5 °C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of high temperature for hours.	MIL-STD-883:1008 JIS C 7021: B-10
Low Temperature Storage Test	1.Ta=-40 °C ±5 °C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.	JIS C 7021: B-12
High Temperature High Humidity Test	1.Ta=65 °C ±5 °C 2.RH=90 %~95% 3.t=240hrs ±2hrs	The purpose of this test is the resistance of the device under tropical for hours.	MIL-STD-202:103B JIS C 7021: B-11
Thermal Shock Test	1.Ta=105 °C ±5 °C & -40 °C ±5 °C (10 min) (10min) 2.total 10 cycles	The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.	MIL-STD-202: 107D MIL-STD-750:1051 MIL-STD-883:1011
Solder Resistance Test	1.T.Sol=260 °C ±5 °C 2.Dwell time= 10 ±1 sec.	This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire.	MIL-STD-202: 210A MIL-STD-750: 2031 JIS C 7021: A-1
Solderability Test	1.T.Sol=230 °C ±5 °C 2.Dwell time=5 ±1 sec	This test intended to see soldering well performed or not.	MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2