



Unity Opto Technology Co., Ltd.

MVL-303G
MVL-303Y
MVL-303HR
MVL-303DR
MVL-303UR

Description

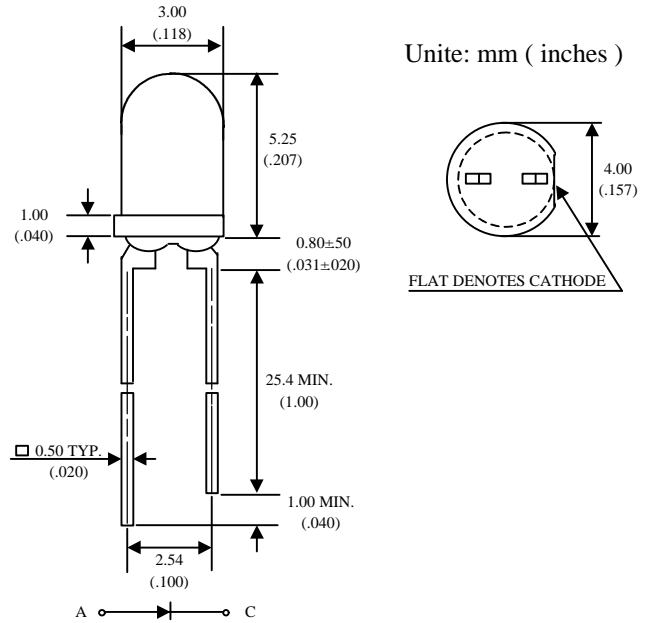
The MVL-303xx series package are T-1 ($\phi 3\text{mm}$) standard color transparent plastic lens package. The Hi-EFF red (HR) and yellow LED chips are made with Gallium Arsenide Phosphide on Gallium Phosphide diode. The green LED chip is made with Gallium Phosphide on Gallium Phosphide diode. The red (DR) chip is made with Aluminum Gallium Arsenide on Gallium Arsenide diode. The red (UR) chip is made with Aluminum Gallium Arsenide on Aluminum Gallium Arsenide diode.

Applications

- Popular T-1 ($\phi 3\text{mm}$) diameter package
- Selected minimum intensities
- General purpose leads
- Reliable and rugged

Absolute Maximum Ratings

Package Dimensions



- NOTES :
1. Tolerance is $\pm 0.25\text{ mm}$ (.010") unless otherwise noted.
 2. Protruded resin under flange is 1.5 mm (.059") max.
 3. Lead spacing is measured where the leads emerge from the package.

Parameter	Symbol	Maximum Rating				Unit
		GREEN	YELLOW	HR	DR/UR	
Power Dissipation	Pad	100	60	100	100	mW
Peak Forward Current (1/10 Duty Cycle 0.1ms pulse width)	I _{pf}	120	80	120	120	A
Continuous Forward Current	I _{af}	30	20	30	40	mA/°C
Derating Linear From 25°C		0.4	0.25	0.4	0.5	mA
Reverse Voltage	V _R	5	5	5	5	V
Operating Temperature Range	T _{opr}	-55°C to + 100°C				
Storage Temperature Range	T _{stg}	-55°C to + 100°C				
Lead Soldering Temperature (1.6mm from body) for 3 seconds at 260°C						

Optical -Electrical Characteristics

Part No. : MVL-303G

@T_A=25°C

Parameter	Test Conditions	Symbol	Min .	Typ .	Max .	Unit .
Luminous Intensity	I _F =10mA	I _V	9.0	30	-	mcd
Forward Voltage	I _F =20mA	V _F	-	2.1	2.8	V
Reverse Current	V _R =5V	I _R	-	-	100	μA
Wavelength	I _F =20mA	λ _p	-	565	-	nm
Spectral Line Half Width	I _F =20mA	Δλ	-	30	-	nm
Viewing Angle	I _F =20mA	2θ _{1/2}	-	20	-	deg

Part No. : MVL-303Y

@T_A=25°C

Parameter	Test Conditions	Symbol	Min .	Typ .	Max .	Unit .
Luminous Intensity	I _F =10mA	I _V	6.0	21	-	mcd
Forward Voltage	I _F =20mA	V _F	-	2.1	2.8	V
Reverse Current	V _R =5V	I _R	-	-	100	μA
Wavelength	I _F =20mA	λ _p	-	585	-	nm
Spectral Line Half Width	I _F =20mA	Δλ	-	35	-	nm
Viewing Angle	I _F =20mA	2θ _{1/2}	-	20	-	deg

Part No. : MVL-303HR

@T_A=25°C

Parameter	Test Conditions	Symbol	Min .	Typ .	Max .	Unit .
Luminous Intensity	I _F =10mA	I _V	8.0	28	-	mcd
Forward Voltage	I _F =20mA	V _F	-	2.0	2.8	V
Reverse Current	V _R =5V	I _R	-	-	100	μA
Wavelength	I _F =20mA	λ _p	-	640	-	nm
Spectral Line Half Width	I _F =20mA	Δλ	-	40	-	nm
Viewing Angle	I _F =20mA	2θ _{1/2}	-	20	-	deg

Part No. : MVL-303DR

@T_A=25°C

Parameter	Test Conditions	Symbol	Min .	Typ .	Max .	Unit .
Luminous Intensity	I _F =20mA	I _V	60	250	-	mcd
Forward Voltage	I _F =20mA	V _F	-	1.8	2.4	V
Reverse Current	V _R =5V	I _R	-	-	100	μA
Wavelength	I _F =20mA	λ _p	-	660	-	nm
Spectral Line Half Width	I _F =20mA	Δλ	-	20	-	nm
Viewing Angle	I _F =20mA	2θ _{1/2}	-	20	-	deg

Part No. : MVL-303UR

@T_A=25°C

Parameter	Test Conditions	Symbol	Min .	Typ .	Max .	Unit .
Luminous Intensity	I _F =20mA	I _V	120	500	-	mcd
Forward Voltage	I _F =20mA	V _F	-	1.8	2.4	V
Reverse Current	V _R =5V	I _R	-	-	100	μA
Wavelength	I _F =20mA	λ _p	-	660	-	nm
Spectral Line Half Width	I _F =20mA	Δλ	-	20	-	nm
Viewing Angle	I _F =20mA	2θ _{1/2}	-	20	-	deg

Typical Optical-Electrical Characteristic Curves

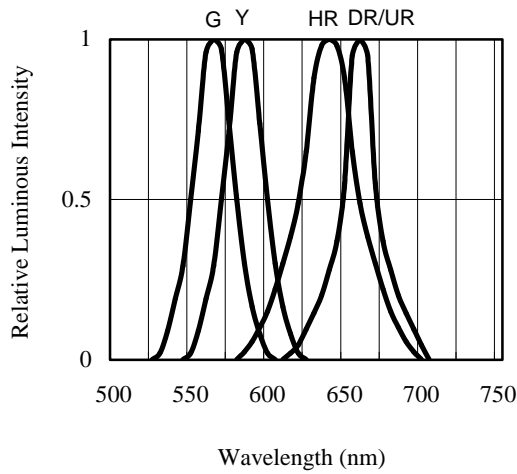


Fig 1. RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH

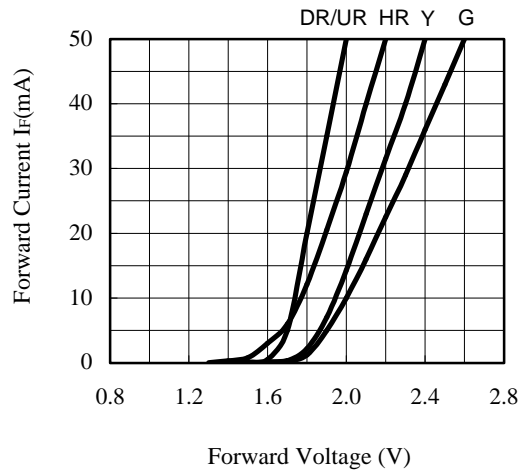


Fig 2. FORWARD CURRENT VS. FORWARD VOLTAGE

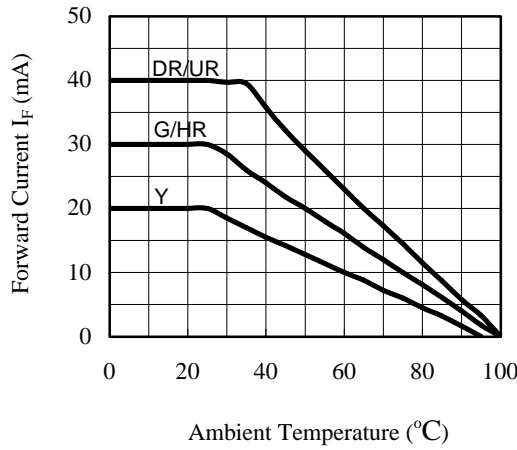


Fig 3. FORWARD CURRENT VS. AMBIENT TEMPERATURE

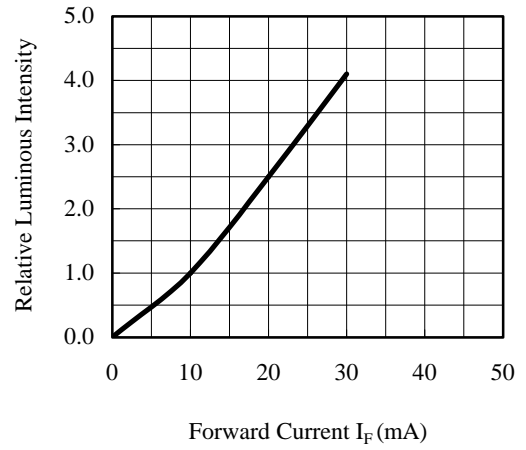


Fig 4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

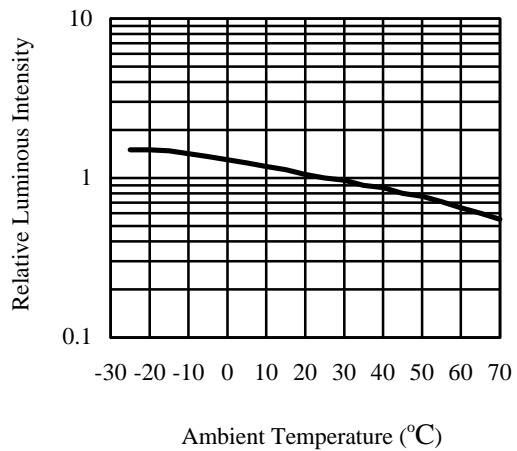


Fig 5. RELATIVE LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

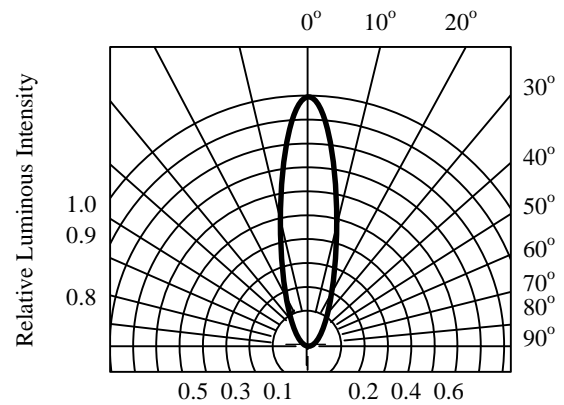


Fig 6. RADIATION DIAGRAM