



SINGLE COLOR LED

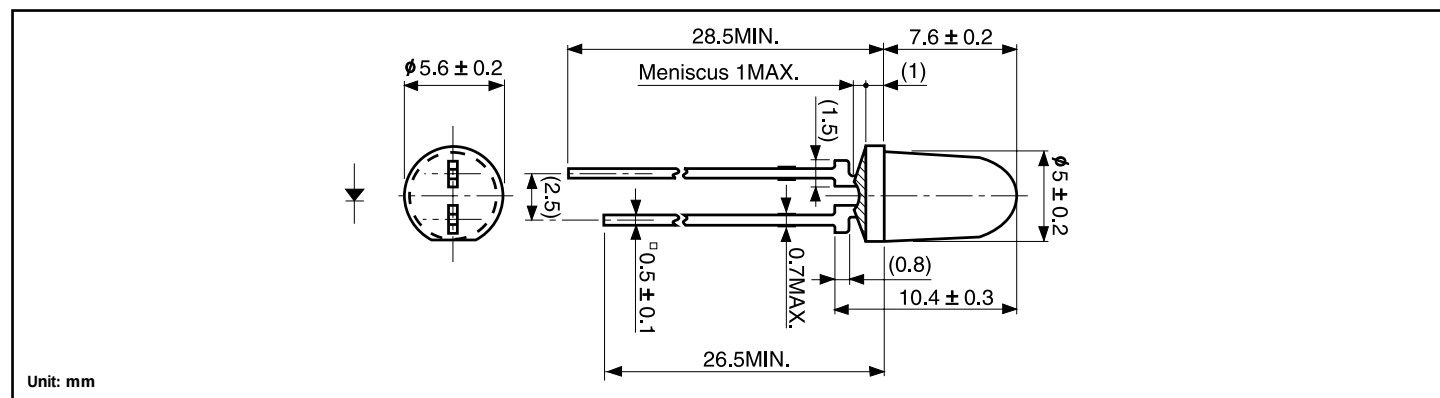
φ 5mm Round Shape



H-1000L / H-2000L / H-3000L

HIGH BRIGHTNESS COLOR

Outline Dimensions



Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Red	Units
		H (KR)	
Power Dissipation	Pd	125	mW
Forward Current	I _F	50	mA
Peak Forward Current	I _{FM}	300	mA
Reverse Voltage	V _R	4	V
Operating Temperature	T _{opr}	-30 to +85	°C
Storage Temperature	T _{stg}	-30 to +100	°C
Derating (DC)*	ΔI _F	0.67	mA/°C

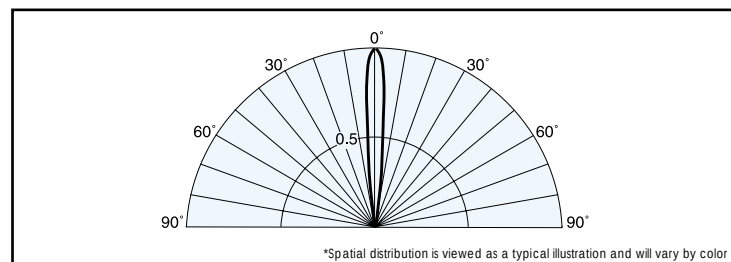
*Ta=25°C, I_{FM} applies for the pulse width ≤ 1msec. and duty cycle ≤ 1/20
The current derating for operation applies when the temperature is above 25°C

Electro-Optical Characteristics

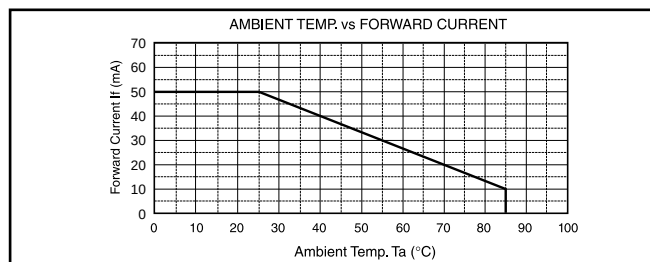
*The viewing angle is an average and will vary by color (Ta=25°C)

Part No.	Material	Emitted Color	Lens Color	Luminous Intensity I _V			Wavelength				Forward Voltage V _F			Reverse Current I _R		Viewing Angle (2 θ 1/2)
				MIN.	TYP.	I _F	Peak λ _p TYP.	Dominant λ _d TYP.	Spectral Line Half Width		TYP.	MAX.	I _F	MAX.	V _R	
									Δλ TYP.	I _F						
H-3000L	GaAlAs	Red	Water Clear	2,400	3,000	20	660	647	25	20	1.8	2.5	20	100	4	10°
H-2000L				1,400	2,000	20	660	647	25	20	1.8	2.5	20	100	4	
H-1000L				700	1,000	20	660	647	25	20	1.8	2.5	20	100	4	
Units				mcd		mA	nm			mA	V		mA	μA	V	Deg.

Spatial Distribution (x)



Operation Current Derating Chart





φ 5mm Round Shape



HIGH BRIGHTNESS COLOR

Technical drawing of the 1000 Series Needle, showing dimensions in mm.

Dimensions:

- Tip diameter: $\phi 5.6 \pm 0.2$
- Tip length: 28.5MIN.
- Tip shape: Meniscus 1MAX.
- Tip radius: 7.6 ± 0.2
- Tip thickness: (1)
- Tip width: (1.5)
- Tip height: (2.5)
- Tip diameter: $\phi 5 \pm 0.2$
- Tip length: 26.5MIN.
- Tip diameter: 0.5 ± 0.1
- Tip length: 0.7MAX.
- Tip diameter: (0.8)
- Tip length: 10.4 ± 0.3

Unit: mm

($T_a=25^{\circ}\text{C}$)

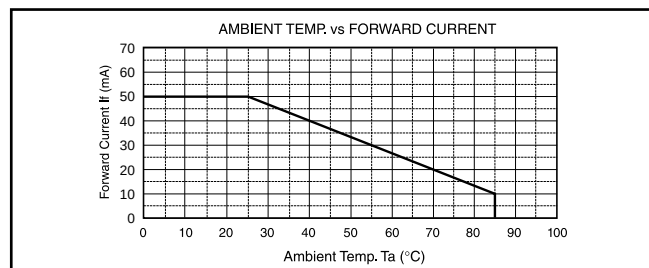
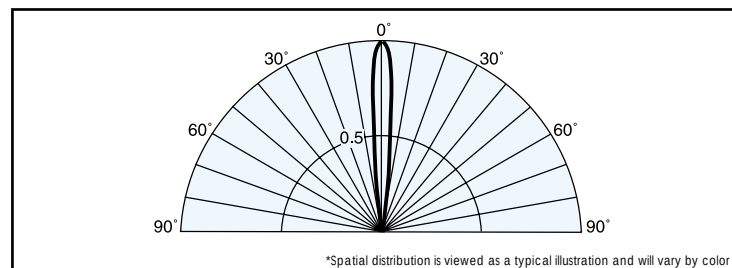
Item		Red	Units
	Symbol	ER	
Power Dissipation	Pd	100	mW
Forward Current	I _F	50	mA
Peak Forward Current	I _{FM}	300	mA
Reverse Voltage	V _R	4	V
Operating Temperature	Topr	-30 to 85	°C
Storage Temperature	Tstg	-30 to 100	°C
Derating (DC)*	ΔI _F	0.67	mA/°C

* Ta=25°C, I_{FM} applies for the pulse width ≤ 1msec. and duty cycle ≤ 1/20
The current derating for operation applies when the temperature is above 25°C

*The viewing angle is an average and will vary by color (Ta=25°C)

Part No.	Material	Emitted Color	Lens Color	Luminous Intensity I _V			Wavelength				Forward Voltage V _F			Reverse Current I _R		Viewing Angle (2 θ 1/2)
				MIN.	TYP.	I _F	Peak λ _p TYP.	Dominant λ _d TYP.	Spectral Line Half Width		TYP.	MAX.	I _F	MAX.	V _R	
									Δλ _Δ TYP.	Δλ _Δ						
ER-500L	GaAlAs	Red	Water Clear	400	500	20	660	647	30	20	1.7	2.0	20	20	4	10°
ER-300L				200	300	20	660	647	30	20	1.7	2.0	20	20	4	
Units				mcd		mA	nm			mA	V	mA	μA	V	Deg.	

■ Operation Current Derating Chart





SINGLE COLOR LED

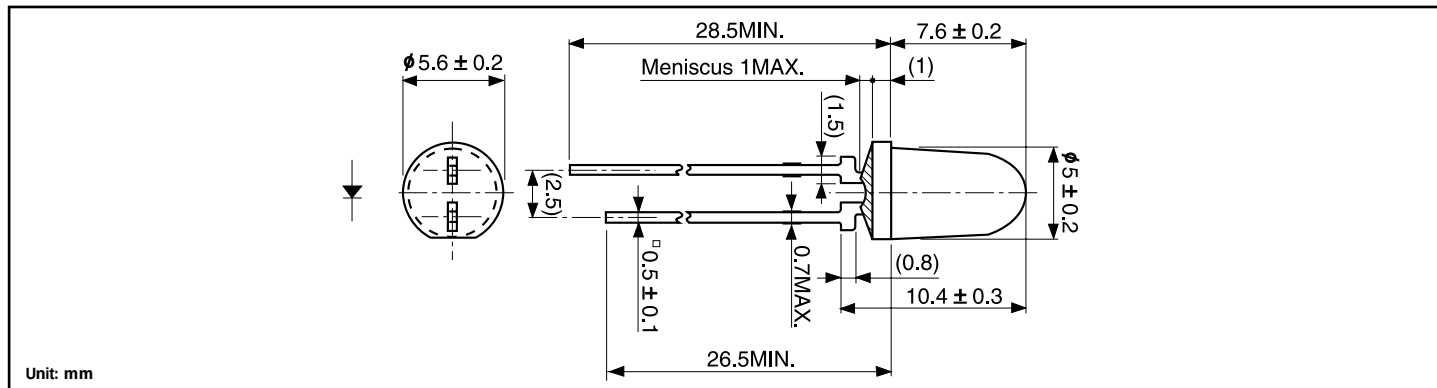
φ 5mm Round Shape



5066X Series

HIGH BRIGHTNESS COLOR

Outline Dimensions



Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Red	Orange	Yellow	Yellow Green	Green	Pure Green	Units
		HBR	HAA	HAY	HPY	HPG	HBG	
Power Dissipation	Pd	100	125	125	125	125	125	mW
Forward Current	I _F	50	50	50	50	50	50	mA
Peak Forward Current	I _{FM}	300	100	100	100	100	100	mA
Reverse Voltage	V _R	4	4	4	4	4	4	V
Operating Temperature	T _{opr}	-30 to +85						°C
Storage Temperature	T _{stg}	-30 to +100						°C
Derating (DC)*	ΔI _F	0.67						mA/°C

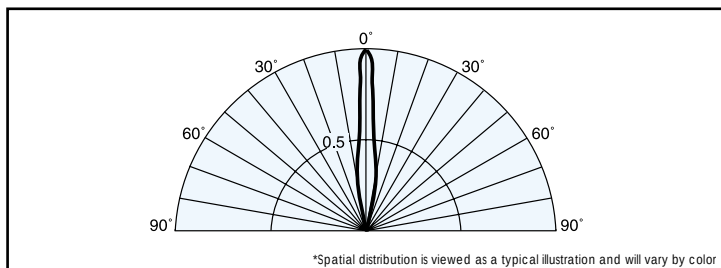
*Ta=25°C, I_{FM} applies for the pulse width ≤ 1msec. and duty cycle ≤ 1/20
The current derating for operation applies when the temperature is above 25°C

Electro-Optical Characteristics

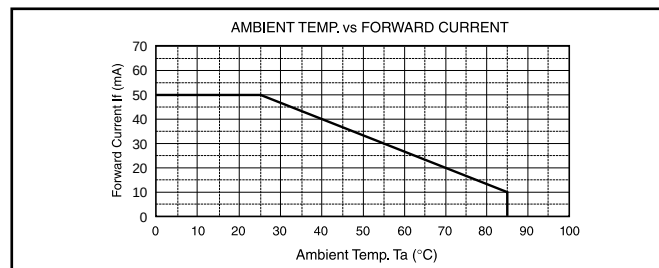
*The viewing angle is an average and will vary by color (Ta=25°C)

Part No.	Material	Emitted Color	Lens Color	Luminous Intensity I _V			Wavelength Spectral Line Half Width				Forward Voltage V _F			Reverse Current I _R		Viewing Angle (2 θ 1/2)
				MIN.	TYP.	I _F	Peak λ _p TYP.	Dominant λ _d TYP.	Δλ TYP.	I _F	TYP.	MAX.	I _F	MAX.	V _R	
HBR5066X	GaAlAs	Red	Clear Pastel Red	200	300	20	660	647	30	20	1.7	2.0	20	20	4	10°
HAA5066X	GaAsP	Orange	Clear Pastel Orange	160	250	20	605	606	30	20	2.2	2.5	20	20	4	
HAY5066X	GaAsP	Yellow	Clear Pastel Yellow	100	150	20	580	590	30	20	2.2	2.5	20	20	4	
HPY5066X	GaP	Yellow Green		200	300	20	570	572	30	20	2.1	2.5	20	20	4	
HPG5066X	GaP	Green	Clear Pastel Green	150	200	20	560	567	30	20	2.1	2.5	20	20	4	
HBG5066X	GaP	Pure Green		100	150	20	555	558	30	20	2.1	2.5	20	20	4	
Units				mcd		mA	nm			mA	V	mA	μA	V	Deg.	

Spatial Distribution (x)



Operation Current Derating Chart





SINGLE COLOR LED

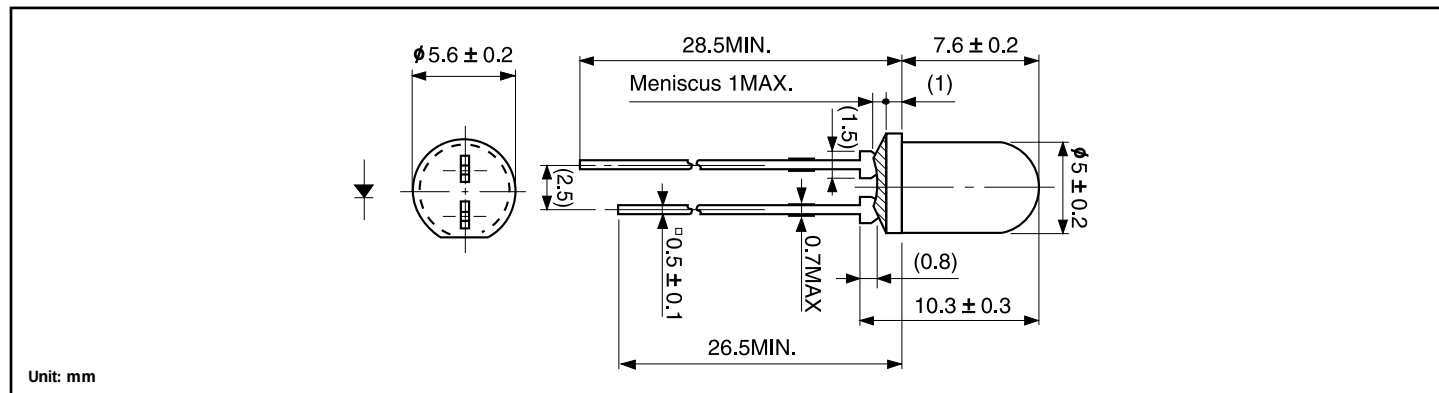
φ 5mm Round Shape



KR5004X

HIGH BRIGHTNESS COLOR

Outline Dimensions



Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Red	Units
		KR	
Power Dissipation	Pd	125	mW
Forward Current	I _F	50	mA
Peak Forward Current	I _{FM}	300	mA
Reverse Voltage	V _R	4	V
Operating Temperature	T _{opr}	-30 to +85	°C
Storage Temperature	T _{stg}	-30 to +100	°C
Derating (DC)*	ΔI _F	0.67	mA/°C

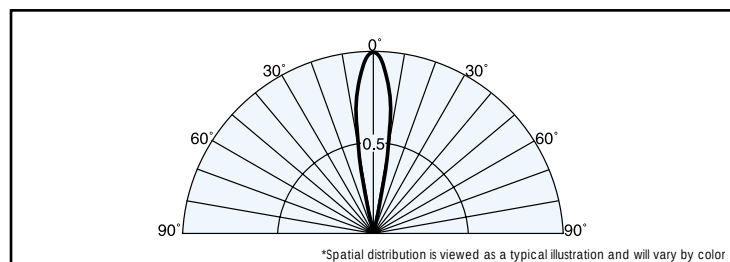
* Ta=25°C, I_{FM} applies for the pulse width ≤ 1msec. and duty cycle ≤ 1/20
The current derating for operation applies when the temperature is above 25°C

Electro-Optical Characteristics

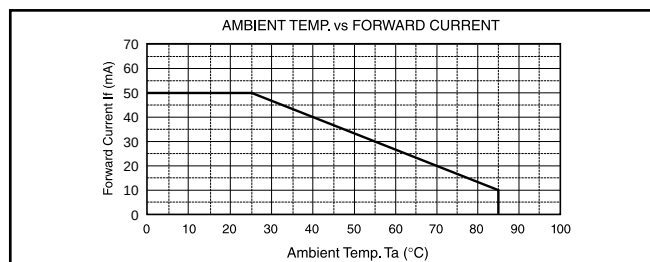
*The viewing angle is an average and will vary by color (Ta=25°C)

Part No.	Material	Emitted Color	Lens Color	Luminous Intensity I _V			Wavelength				Forward Voltage V _F			Reverse Current I _R		Viewing Angle (2θ 1/2)
				MIN.	TYR.	I _F	Peak λ _p TYR.	Dominant λ _d TYR.	Spectral Line Half Width Δλ TYR.	I _F	TYR.	MAX.	I _F	MAX.	V _R	
KR5004X	GaAlAs	Red	Water Clear	400	800	20	660	647	25	20	1.8	2.5	20	100	4	20°
Units				mcd		mA	nm			mA	V		mA	μA	V	Deg.

Spatial Distribution (x)



Operation Current Derating Chart





SINGLE COLOR LED

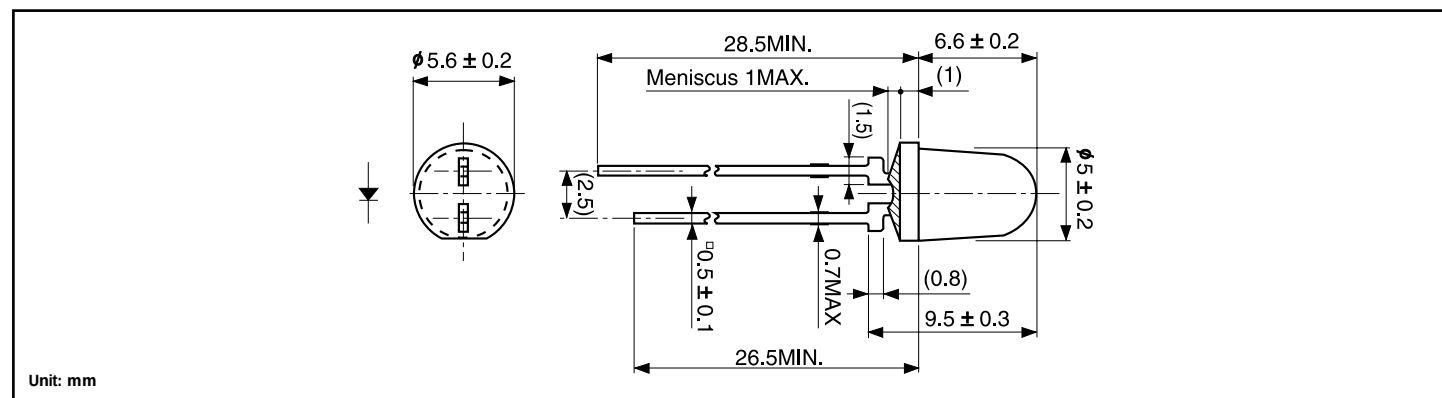
φ 5mm Round Shape



KR5005S

HIGH BRIGHTNESS COLOR

Outline Dimensions



Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Red	Units
		KR	
Power Dissipation	Pd	125	mW
Forward Current	I _F	50	mA
Peak Forward Current	I _{FM}	300	mA
Reverse Voltage	V _R	4	V
Operating Temperature	T _{opr}	-30 to +85	°C
Storage Temperature	T _{stg}	-30 to +100	°C
Derating (DC)*	ΔI _F	0.67	mA/°C

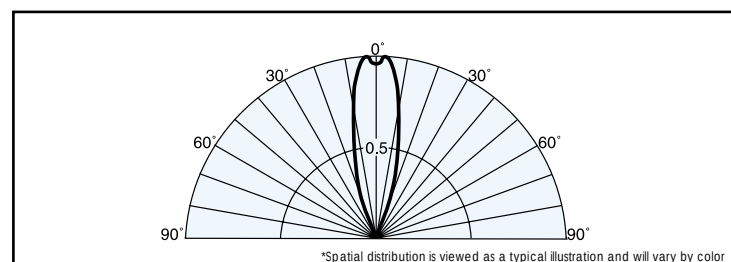
* Ta=25°C, I_{FM} applies for the pulse width ≤ 1msec. and duty cycle ≤ 1/20
The current derating for operation applies when the temperature is above 25°C

Electro-Optical Characteristics

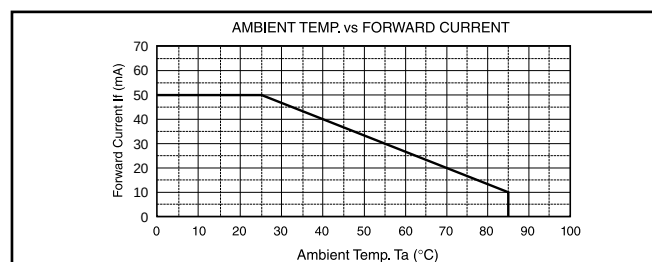
*The viewing angle is an average and will vary by color (Ta=25°C)

Part No.	Material	Emitted Color	Lens Color	Luminous Intensity I _V			Wavelength				Forward Voltage V _F			Reverse Current I _R		Viewing Angle (2θ 1/2)
				MIN.	TYP.	I _F	Peak λ _p TYP.	Dominant λ _d TYP.	Spectral Line Half Width Δλ TYP.	I _F	TYP.	MAX.	I _F	MAX.	V _R	
KR5005S	GaAlAs	Red	Water Clear	200	300	20	660	647	25	20	1.8	2.5	20	100	4	25°
Units				mcd		mA	nm			mA	V		mA	μA	V	Deg.

Spatial Distribution (x)



Operation Current Derating Chart





SINGLE COLOR LED

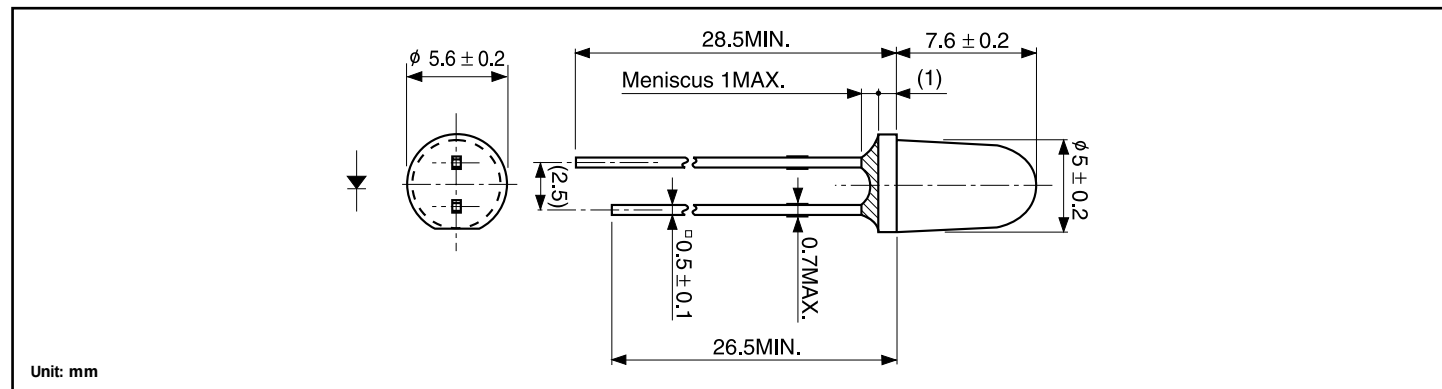
φ 5mm Round Shape



5334S Series

STANDARD COLOR

Outline Dimensions



Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Red			Orange	Yellow	Yellow Green	Green	Pure Green	Units
		EBR, BR	PR	EVR, VR	EAA, AA	EAY, AY	EPY, PY	EPG, PG	EBG, BG	
Power Dissipation	Pd	100	75	75	125	125	125	125	125	mW
Forward Current	I _F	50	30	30	50	50	50	50	50	mA
Peak Forward Current	I _{FM}	300	100	100	100	100	100	100	100	mA
Reverse Voltage	V _R	4	4	4	4	4	4	4	4	V
Operating Temperature	Topr	-30 to +85								°C
Storage Temperature	Tstg	-30 to +100								°C
Derating (DC)*	ΔI _F	0.67	0.33			0.67				mA/°C

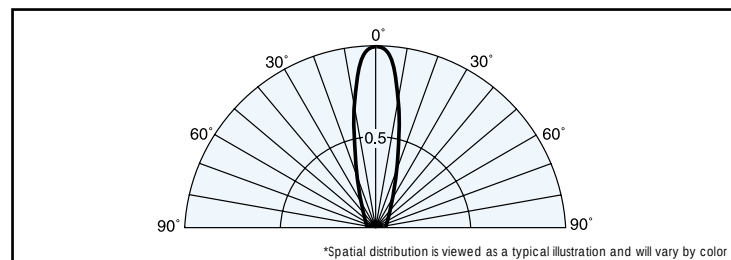
* Ta=25°C, I_{FM} applies for the pulse width ≤ 1msec. and duty cycle ≤ 1/20.
The current derating for operation applies when the temperature is above 25°C

Electro-Optical Characteristics

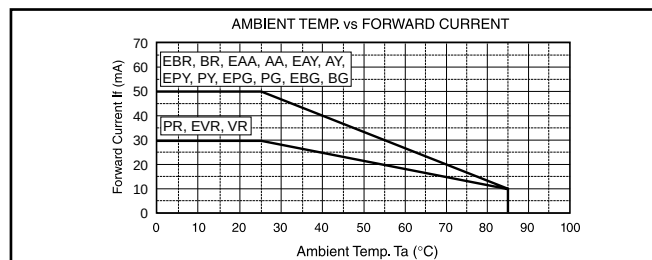
*The viewing angle is an average and will vary by color (Ta=25°C)

Part No.	Material	Emitted Color	Lens Color	Luminous Intensity I _V			Wavelength Spectral Line Dominant Half Width				Forward Voltage V _F			Reverse Current I _R		Viewing Angle (2 θ 1/2)	
				MIN.	TYP.	I _F	Peak λ _P TYP.	Dominant λ _D TYP.	Δλ TYP.	I _F	TYP.	MAX.	I _F	MAX.	V _R		
EBR/BR5334S	GaAlAs	Red	Diffused Red	20/10	30/20	20	660	647	30	20	1.7	2.0	20	100	4	30°	
PR5334S	GaP			3	6	10	700	635	100	10	2.1	2.5	10	100	4		
EVR/VR5334S	GaAsP			16/8	24/16	20	630	624	30	20	2.0	2.5	20	100	4		
EAA/AA5334S	GaAsP	Orange	Diffused Orange	16/8	24/16	20	605	606	30	20	2.2	2.5	20	100	4		
EAY/AY5334S	GaAsP	Yellow	Diffused Yellow	16/8	24/16	20	580	590	30	20	2.2	2.5	20	100	4		
EPY/PY5334S	GaP	Yellow Green		30/15	45/30	20	570	572	30	20	2.1	2.5	20	100	4		
EPG/PG5334S	GaP	Green	Diffused Green	24/12	36/24	20	560	567	30	20	2.1	2.5	20	100	4		
EBG/BG5334S	GaP	Pure Green		10/5	15/10	20	555	558	30	20	2.1	2.5	20	100	4		
Units				mcd		mA	mcd		mA		V		mA		μA	V	Deg.

Spatial Distribution (x)



Operation Current Derating Chart





SINGLE COLOR LED

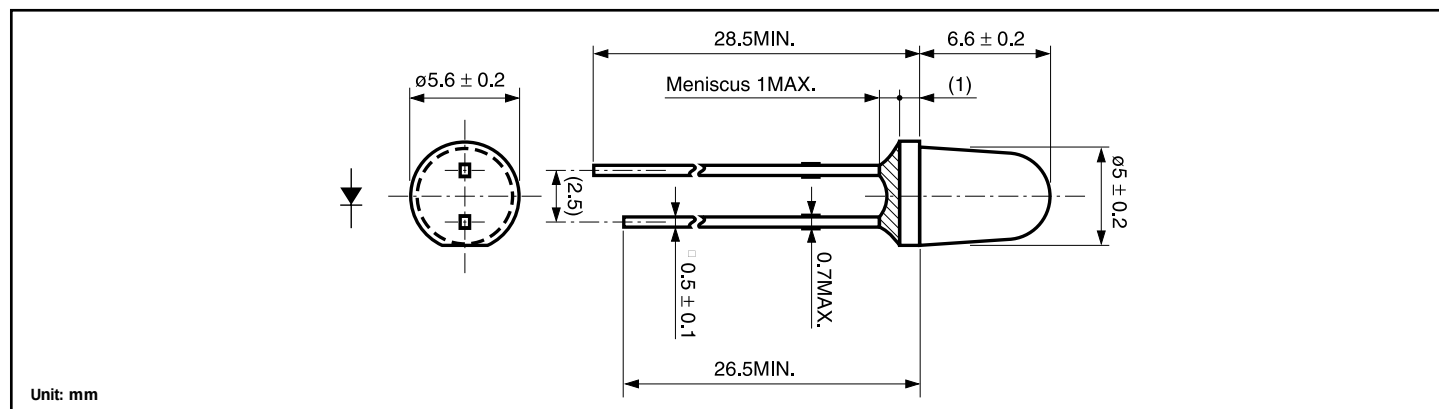
Φ 5mm Round Shape



5305S Series

S T A N D A R D C O L O R

Outline Dimensions



Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Red			Orange	Yellow	Yellow Green	Green	Pure Green	Units
		EBR, BR	PR	EVR, VR	EAA, AA	EAY, AY	EPY, PY	EPG, PG	EBG, BG	
Power Dissipation	Pd	100	75	75	125	125	125	125	125	mW
Forward Current	IF	50	30	30	50	50	50	50	50	mA
Peak Forward Current	IFM	300	100	100	100	100	100	100	100	mA
Reverse Voltage	VR	4	4	4	4	4	4	4	4	V
Operating Temperature	Topr	-30 to +85								°C
Storage Temperature	Tstg	-30 to +100								°C
Derating (DC)*	ΔIF	0.67	0.33			0.67				mA/°C

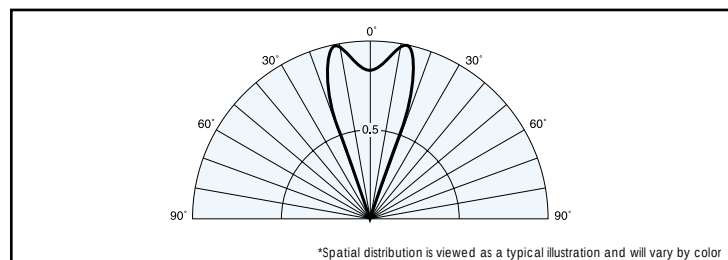
* Ta=25°C, I_{FM} applies for the pulse width ≤ 1msec. and duty cycle ≤ 1/20
The current derating for operation applies when the temperature is above 25°C

Electro-Optical Characteristics

*The viewing angle is an average and will vary by color (Ta=25°C)

Part No.	Material	Emitted Color	Lens Color	Luminous Intensity I _V			Wavelength Spectral Line				Forward Voltage V _F			Reverse Current I _R		Viewing Angle (2 θ 1/2)	
				MIN.	TYP.	I _F	Peak λ _p	Dominant λ _d	Half Width Δλ	I _F	TYP.	MAX.	I _F	MAX.	V _R		
							TYP.	TYP.	TYP.								
EBR/BR5305S	GaAlAs	Red	Water Clear	20/10	30/20	20	660	647	30	20	1.7	2.0	20	100	4	50°	
PR5305S	GaP			4	8	10	700	635	100	10	2.1	2.5	10	100	4	35°	
EVR/VR5305S	GaAsP			20/10	30/20	20	630	624	30	20	2.0	2.5	20	100	4		
EAA/AA5305S	GaAsP	Orange		30/15	45/30	20	605	606	30	20	2.2	2.5	20	100	4		
EAY/AY5305S	GaAsP	Yellow		30/15	45/30	20	580	590	30	20	2.2	2.5	20	100	4		
EPY/PY5305S	GaP	Yellow Green		50/25	75/50	20	570	572	30	20	2.1	2.5	20	100	4		
EPG/PG5305S	GaP	Green		40/20	60/40	20	560	567	30	20	2.1	2.5	20	100	4		
EBG/BG5305S	GaP	Pure Green		12/6	18/12	20	555	558	30	20	2.1	2.5	20	100	4		
Units				mcd		mA	nm		mA		V		mA		μA	V	Deg.

Spatial Distribution (x)



Operation Current Derating Chart

