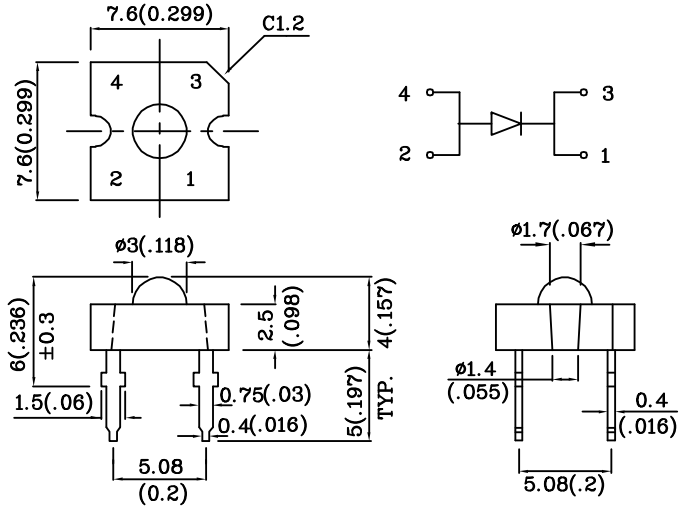


Features

- SUPER FLUX OUTPUT.
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ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES



Notes:

1. All dimensions are in millimeters (inches).
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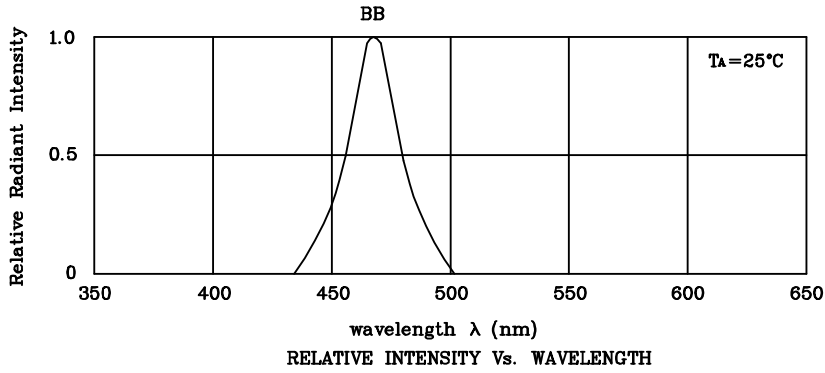
Absolute maximum ratings ($T_A=25^\circ\text{C}$)		BB (InGaN)	Unit
Reverse voltage	V_R	5	V
Forward current	I_F	30	mA
Forward current (peak) 1/10Duty cycle 0.1ms pulse width	i_{FS}	160	mA
Power dissipation	P_T	102	mW
Operating temperature	T_A	-40 ~ +85	°C
Storage temperature	T_{stg}	-40 ~ +85	
Lead solder temperature [2mm below package base]	260°C For 5 Seconds		

Operating Characteristics ($T_A=25^\circ\text{C}$)		BB (InGaN)	Unit
Forward voltage (typ.) ($I_F=20\text{mA}$)	V_F	3.65	V
Forward voltage (max.) ($I_F=20\text{mA}$)	V_F	4.2	V
Reverse current ($V_R=5\text{V}$)	I_R	10	μA
Wavelength at peak emission ($I_F=20\text{mA}$)	λ_{peak}	468	nm
Wavelength at Dominate emission ($I_F=20\text{mA}$)	λ_D	470	nm
Spectral Line half-width ($I_F=20\text{mA}$)	$\Delta\lambda$	25	nm
Capacitance ($V_F=0\text{V}$, $f=1\text{MHz}$)	C	65	pF

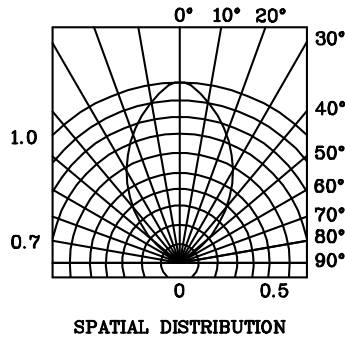
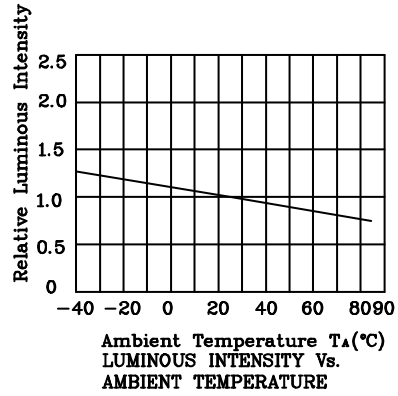
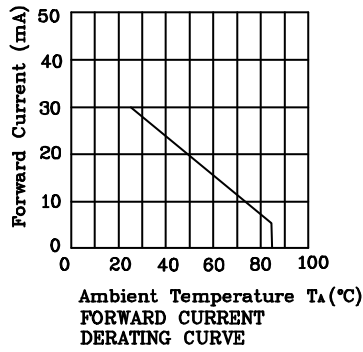
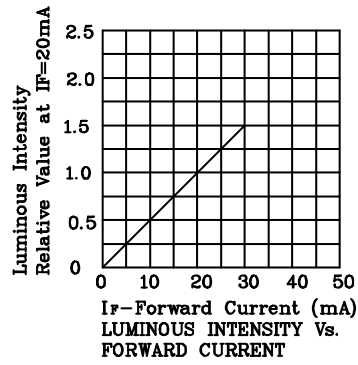
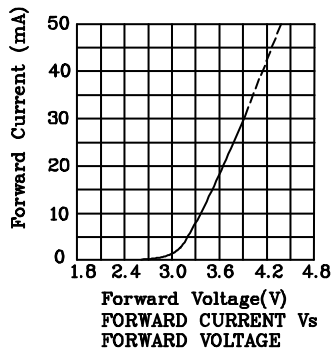
Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity ($I_F=20\text{mA}^*70\text{mA}$) mcd		Viewing Angle $2\theta_{1/2}$
				min.	typ.	
XSBB83W	Blue	InGaN	Water Clear	70 *180	140 *390	70°

Notes:

1. $\theta_{1/2}$ is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. * Luminous intensity with asterisk is measured at 70mA under 40ms pulse width.
3. Drive current between 10mA and 30mA are recommended for long term performance.
4. Operation at current below 10mA is not recommended.



❖ **BB**

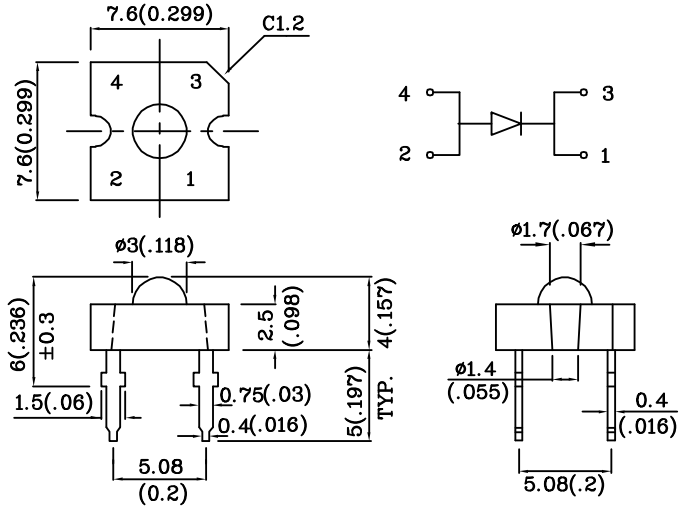


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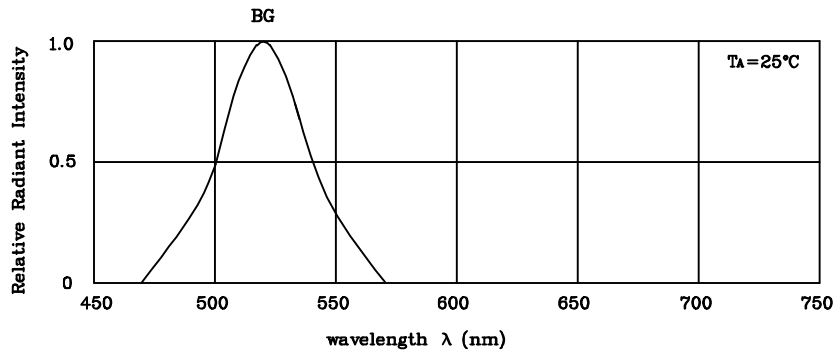
Absolute maximum ratings (TA=25°C)		BG (InGaN)	Unit
Reverse voltage	V _R	5	V
Forward current	I _F	30	mA
Forward current (peak) 1/10Duty cycle 0.1ms pulse width	i _{FS}	150	mA
Power dissipation	P _T	105	mW
Operating temperature	T _A	-40 ~ +85	°C
Storage temperature	T _{stg}	-40 ~ +85	
Lead solder temperature [2mm below package base]	260°C For 5 Seconds		

Operating Characteristics (TA=25°C)		BG (InGaN)	Unit
Forward voltage (typ.) (I _F =20mA)	V _F	3.5	V
Forward voltage (max.) (I _F =20mA)	V _F	4.5	V
Reverse current (V _R =5V)	I _R	10	uA
Wavelength at peak emission (I _F =20mA)	λ peak	520	nm
Wavelength at Dominate emission (I _F =20mA)	λ D	525	nm
Spectral Line half- width (I _F =20mA)	Δλ	38	nm
Capacitance (V _F =0V, f=1MHz)	C	45	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity (I _F =20mA*70mA) mcd		Viewing Angle 2θ 1/2
				min.	typ.	
XSBG83W	Green	InGaN	Water Clear	180 *480	390 *890	70°

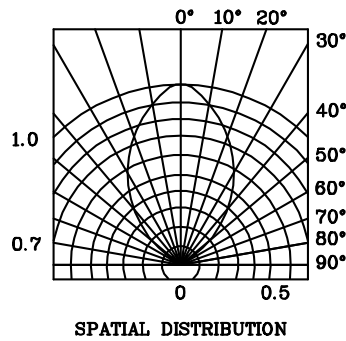
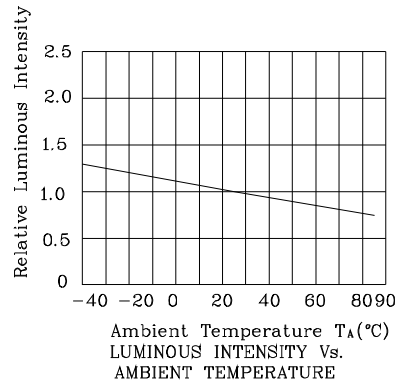
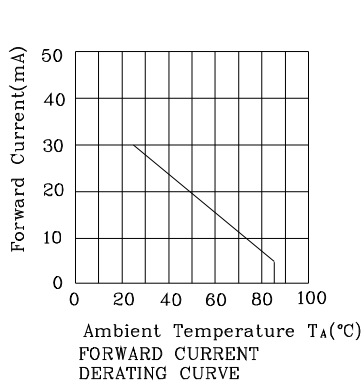
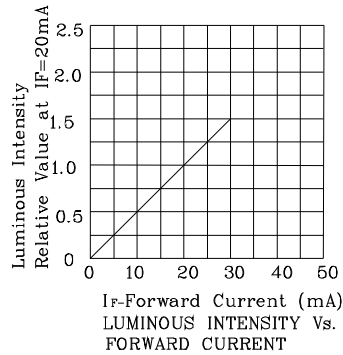
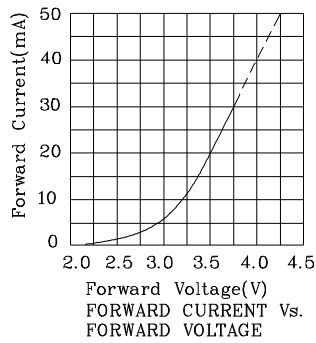
Notes:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. * Luminous intensity with asterisk is measured at 70mA under 40ms pulse width.
3. Drive current between 10mA and 30mA are recommended for long term performance.
4. Operation at current below 10mA is not recommended.



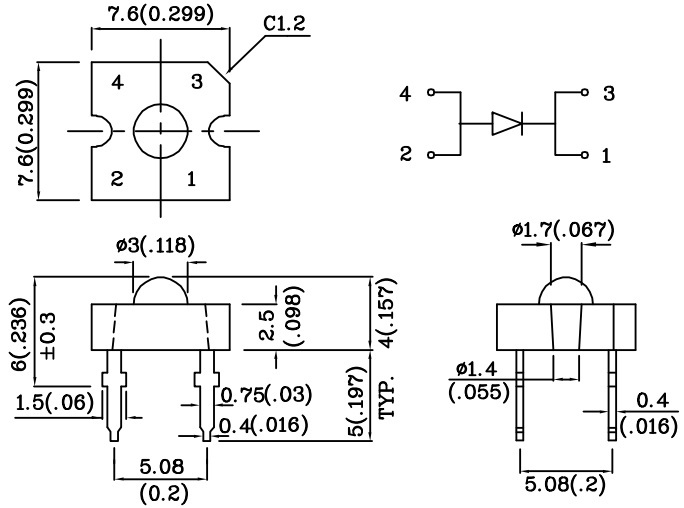
RELATIVE INTENSITY Vs. WAVELENGTH

◆ **BG**



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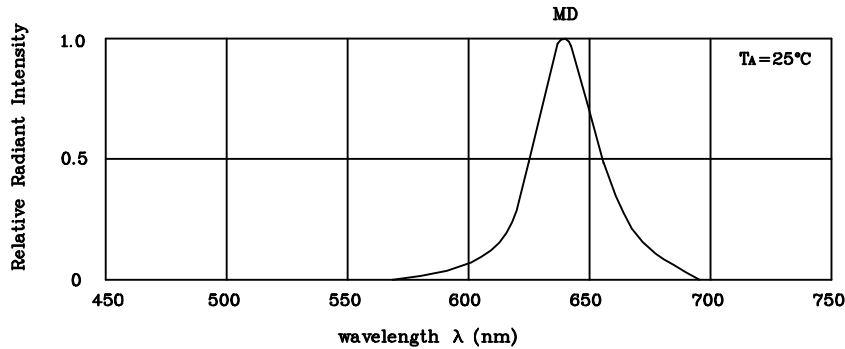
Absolute maximum ratings (TA=25°C)		MD (InGaAlP)	Unit
Reverse voltage	VR	5	V
Forward current	IF	30	mA
Forward current (peak) 1/10Duty cycle 0.1ms pulse width	iFS	185	mA
Power dissipation	PT	170	mW
Operating temperature	TA	-40 ~ +85	°C
Storage temperature	Tstg	-40 ~ +85	
Lead solder temperature [2mm below package base]	260°C For 5 Seconds		

Operating Characteristics (TA=25°C)		MD (InGaAlP)	Unit
Forward voltage (typ.) (IF=20mA)	VF	1.9	V
Forward voltage (max.) (IF=20mA)	VF	2.5	V
Reverse current (VR=5V)	IR	10	uA
Wavelength at peak emission (IF=20mA)	λ peak	640	nm
Wavelength at Dominate emission (IF=20mA)	λ D	628	nm
Spectral Line half- width (IF=20mA)	$\Delta\lambda$	27	nm
Capacitance (VF=0V, f=1MHz)	C	45	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity (IF=20mA*70mA) mcd		Viewing Angle 2 θ 1/2
				min.	typ.	
XSMD83W	Red	InGaAlP	Water Clear	280	490	70°
				*480	*990	

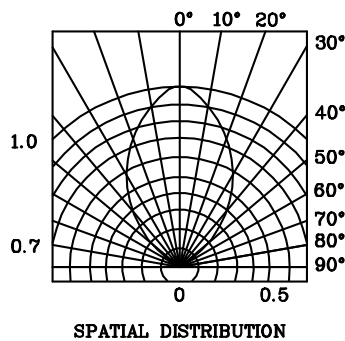
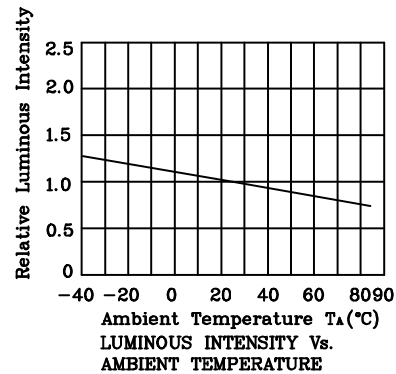
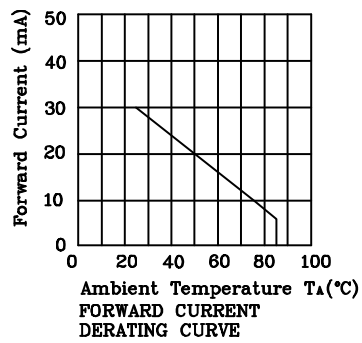
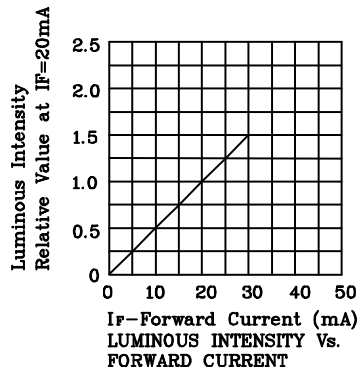
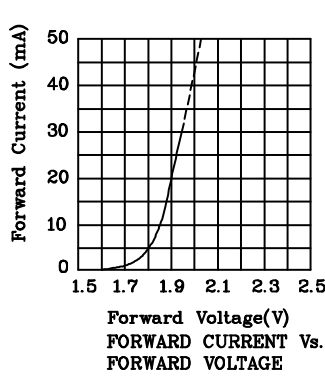
Notes:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. * Luminous intensity with asterisk is measured at 70mA under 40ms pulse width.
3. Drive current between 10mA and 30mA are recommended for long term performance.
4. Operation at current below 10mA is not recommended.



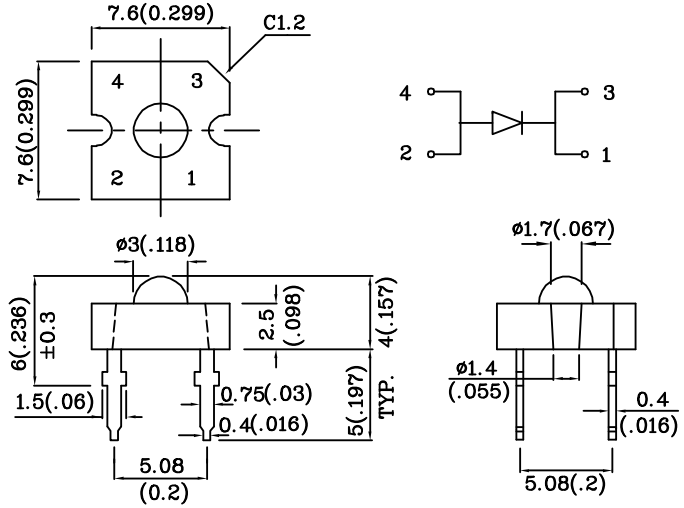
RELATIVE INTENSITY Vs. WAVELENGTH

❖ MD



Features

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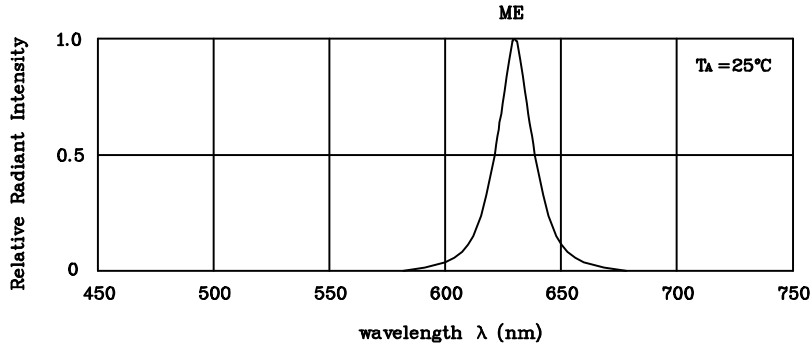
Absolute maximum ratings (TA=25°C)		ME (InGaAlP)	Unit
Reverse voltage	V _R	5	V
Forward current	I _F	30	mA
Forward current (peak) 1/10Duty cycle 0.1ms pulse width	i _{FS}	195	mA
Power dissipation	P _T	150	mW
Operating temperature	T _A	-40 ~ +85	°C
Storage temperature	T _{stg}	-40 ~ +85	
Lead solder temperature [2mm below package base]	260°C For 5 Seconds		

Operating Characteristics (TA=25°C)		ME (InGaAlP)	Unit
Forward voltage (typ.) (I _F =20mA)	V _F	2.0	V
Forward voltage (max.) (I _F =20mA)	V _F	2.5	V
Reverse current (V _R =5V)	I _R	10	uA
Wavelength at peak emission (I _F =20mA)	λ peak	630	nm
Wavelength at Dominate emission (I _F =20mA)	λ D	621	nm
Spectral Line half-width (I _F =20mA)	Δλ	20	nm
Capacitance (V _F =0V, f=1MHz)	C	25	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity (I _F =20mA*70mA) mcd		Viewing Angle 2θ 1/2
				min.	typ.	
XSME83W	Red	InGaAlP	Water Clear	480 *1500	790 *2790	70°

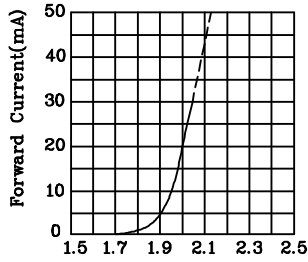
Notes:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
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3. Drive current between 10mA and 30mA are recommended for long term performance.
4. Operation at current below 10mA is not recommended.

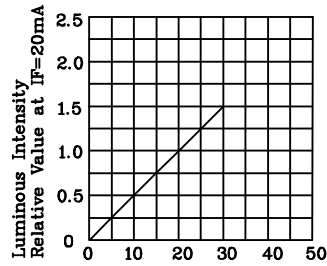


RELATIVE INTENSITY Vs. WAVELENGTH

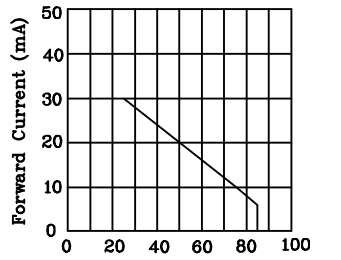
❖ ME



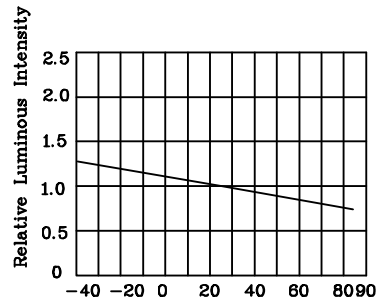
FORWARD CURRENT Vs. FORWARD VOLTAGE



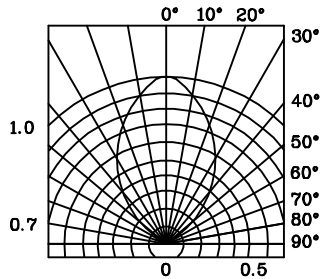
LUMINOUS INTENSITY Vs. FORWARD CURRENT



FORWARD CURRENT DERATING CURVE



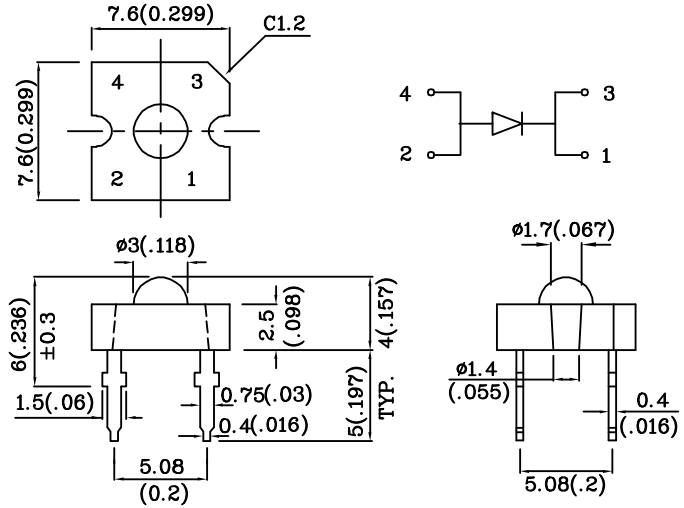
LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

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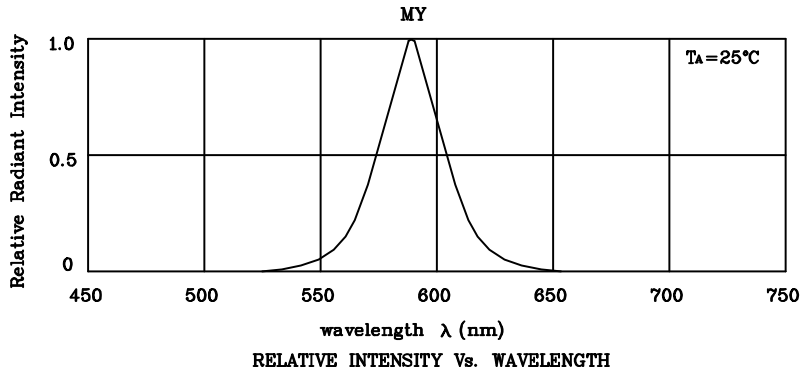
Absolute maximum ratings (TA=25°C)		MY (InGaAlP)	Unit
Reverse voltage	VR	5	V
Forward current	IF	30	mA
Forward current (peak) 1/10Duty cycle 0.1ms pulse width	iFS	150	mA
Power dissipation	PT	125	mW
Operating temperature	TA	-40 ~ +85	°C
Storage temperature	Tstg	-40 ~ +85	
Lead solder temperature [2mm below package base]	260°C For 5 Seconds		

Operating Characteristics (TA=25°C)		MY (InGaAlP)	Unit
Forward voltage (typ.) (IF=20mA)	VF	2.0	V
Forward voltage (max.) (IF=20mA)	VF	2.5	V
Reverse current (VR=5V)	IR	10	uA
Wavelength at peak emission (IF=20mA)	λ peak	590	nm
Wavelength at Dominate emission (IF=20mA)	λ D	588	nm
Spectral Line half- width (IF=20mA)	$\Delta\lambda$	28	nm
Capacitance (VF=0V, f=1MHz)	C	25	pF

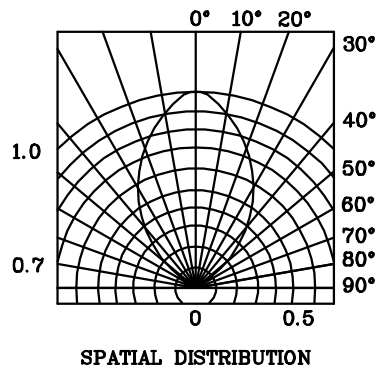
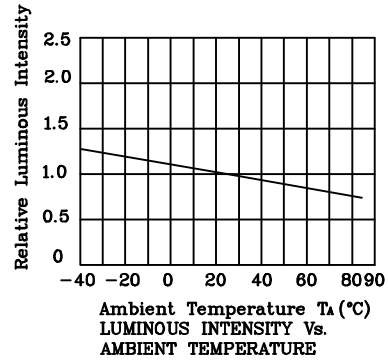
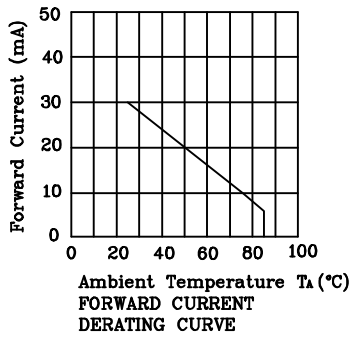
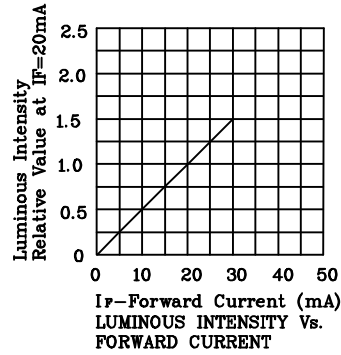
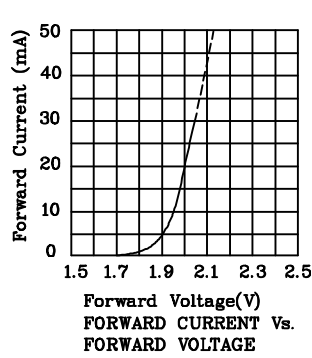
Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity (IF=20mA*70mA) mcd		Viewing Angle 2 θ 1/2
				min.	typ.	
XSMY83W	Yellow	InGaAlP	Water Clear	180 *280	390 *690	70°

Notes:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. * Luminous intensity with asterisk is measured at 70mA under 40ms pulse width.
3. Drive current between 10mA and 30mA are recommended for long term performance.
4. Operation at current below 10mA is not recommended.

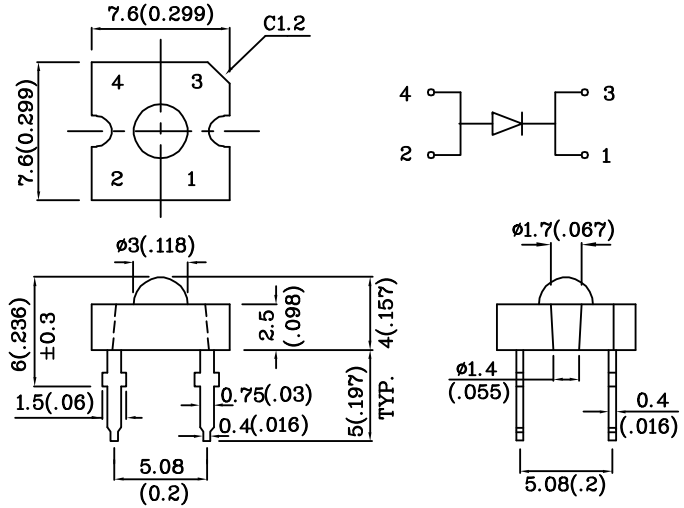


❖ MY



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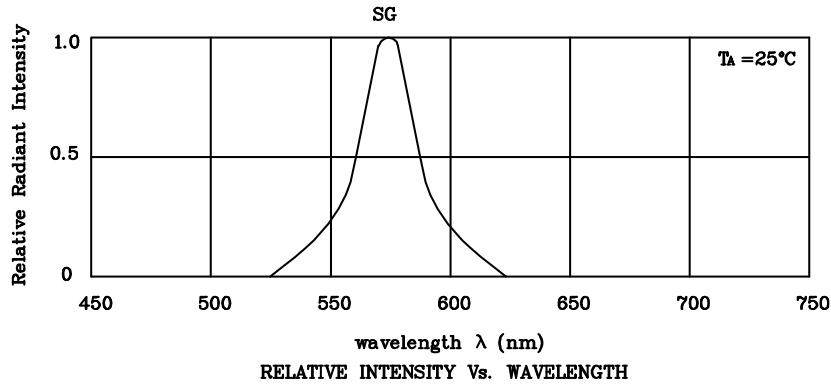
Absolute maximum ratings (TA=25°C)		SG (InGaAlP)	Unit
Reverse voltage	V _R	5	V
Forward current	I _F	30	mA
Forward current (peak) 1/10Duty cycle 0.1ms pulse width	i _{FS}	150	mA
Power dissipation	P _T	105	mW
Operating temperature	T _A	-40 ~ +85	°C
Storage temperature	T _{stg}	-40 ~ +85	
Lead solder temperature [2mm below package base]	260°C For 5 Seconds		

Operating Characteristics (TA=25°C)		SG (InGaAlP)	Unit
Forward voltage (typ.) (I _F =20mA)	V _F	2.1	V
Forward voltage (max.) (I _F =20mA)	V _F	2.5	V
Reverse current (V _R =5V)	I _R	10	uA
Wavelength at peak emission (I _F =20mA)	λ peak	574	nm
Wavelength at Dominate emission (I _F =20mA)	λ D	568	nm
Spectral Line half- width (I _F =20mA)	Δλ	26	nm
Capacitance (V _F =0V, f=1MHz)	C	20	pF

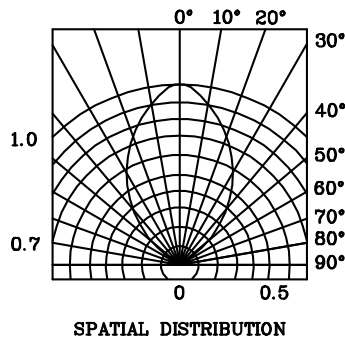
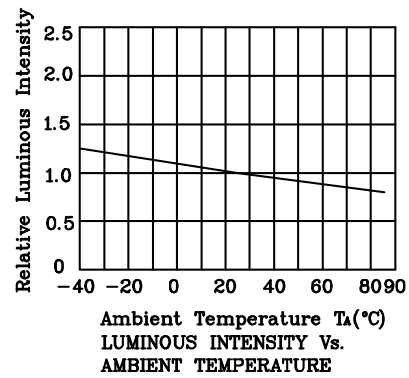
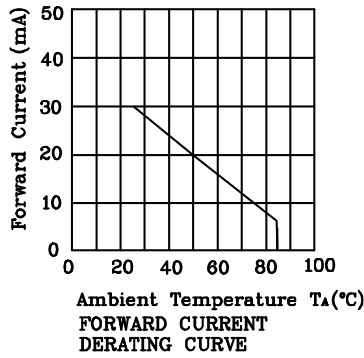
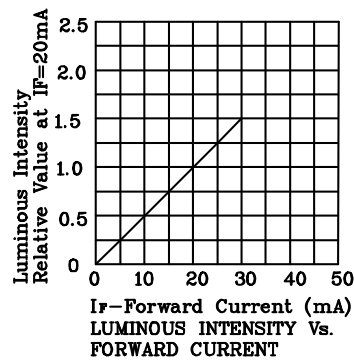
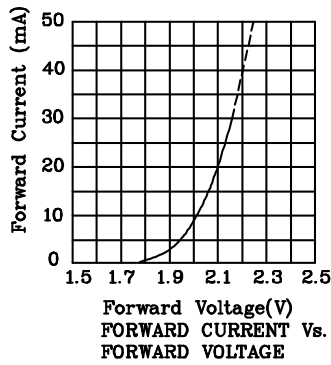
Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity (I _F =20mA*70mA) mcd		Viewing Angle 2θ 1/2
				min.	typ.	
XSSG83W	Green	InGaAlP	Water Clear	110 *380	240 *590	70°

Notes:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. * Luminous intensity with asterisk is measured at 70mA under 40ms pulse width.
3. Drive current between 10mA and 30mA are recommended for long term performance.
4. Operation at current below 10mA is not recommended.

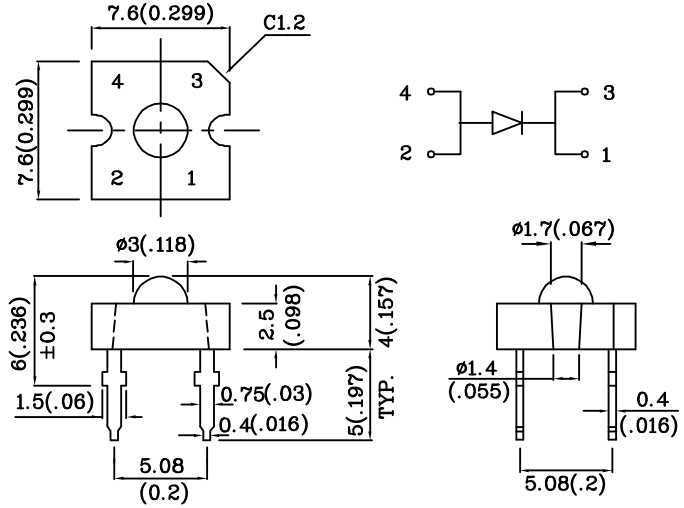


◆ SG



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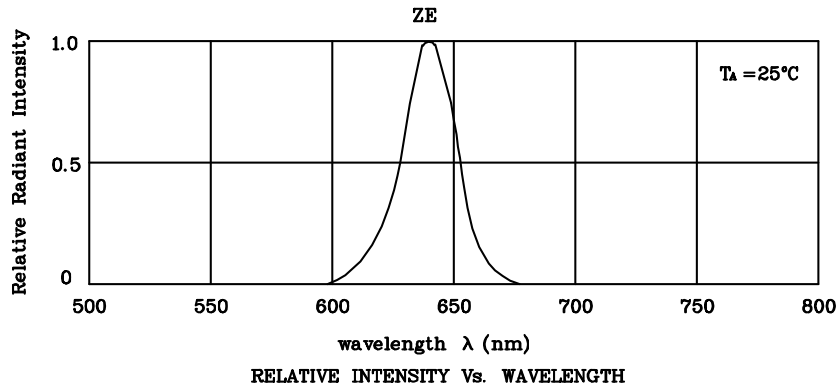
Absolute maximum ratings ($T_A=25^\circ\text{C}$)		ZE (InGaAlP)	Unit
Reverse voltage	V_R	5	V
Forward current	I_F	70	mA
Forward current (peak) 1/10Duty cycle 0.1ms pulse width	i_{FS}	150	mA
Power dissipation	P_T	196	mW
Operating temperature	T_A	-40 ~ +85	°C
Storage temperature	T_{stg}	-40 ~ +85	
Lead solder temperature [2mm below package base]	260°C For 5 Seconds		

Operating Characteristics ($T_A=25^\circ\text{C}$)		ZE (InGaAlP)	Unit
Forward voltage (typ.) ($I_F=20\text{mA}$)	V_F	2.2	V
Forward voltage (max.) ($I_F=20\text{mA}$)	V_F	2.8	V
Reverse current ($V_R=5\text{V}$)	I_R	10	μA
Wavelength at peak emission ($I_F=20\text{mA}$)	λ_{peak}	640	nm
Wavelength at Dominate emission ($I_F=20\text{mA}$)	λ_D	630	nm
Spectral Line half-width ($I_F=20\text{mA}$)	$\Delta\lambda$	25	nm
Capacitance ($V_F=0\text{V}$, $f=1\text{MHz}$)	C	27	pF

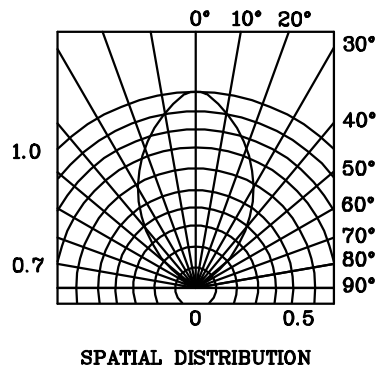
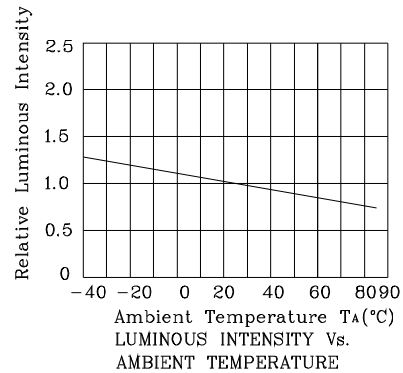
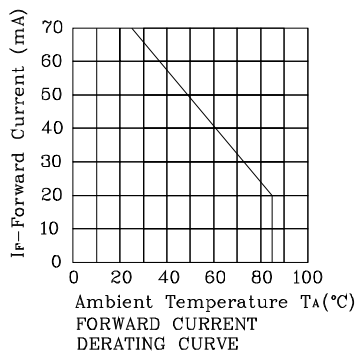
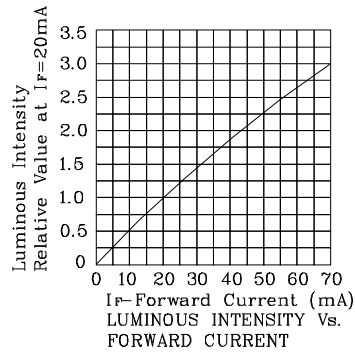
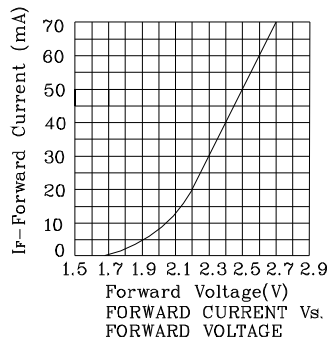
Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity ($I_F=20\text{mA}^*70\text{mA}$) mcd		Viewing Angle $2\theta_{1/2}$
				min.	typ.	
XSZE83W	Orange	InGaAlP	Water Clear	1500 *4700	1790 *6990	70°

Notes:

1. $\theta_{1/2}$ is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. * Luminous intensity with asterisk is measured at 70mA under 40ms pulse width.
3. Drive current between 10mA and 30mA are recommended for long term performance.
4. Operation at current below 10mA is not recommended.

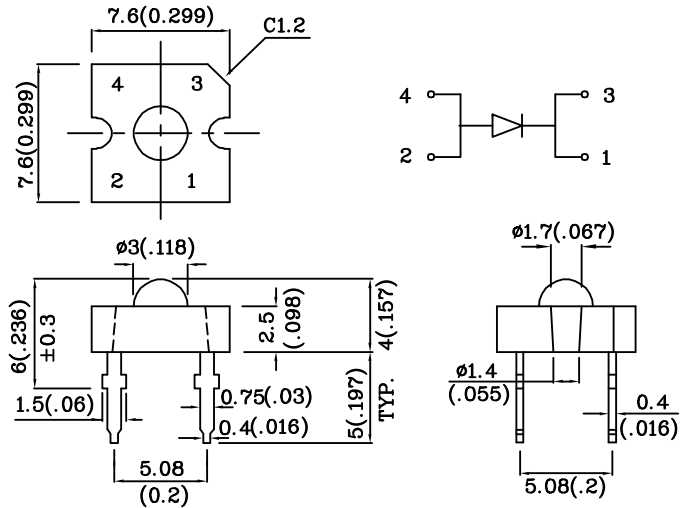


❖ **ZE**



Features

- SUPER FLUX OUTPUT.
- DESIGN FOR HIGH CURRENT OPERATION.
- OUTSTANDING MATERIAL EFFICIENCY.
- RELIABLE AND RUGGED.



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25(0.01)$ " unless otherwise noted.

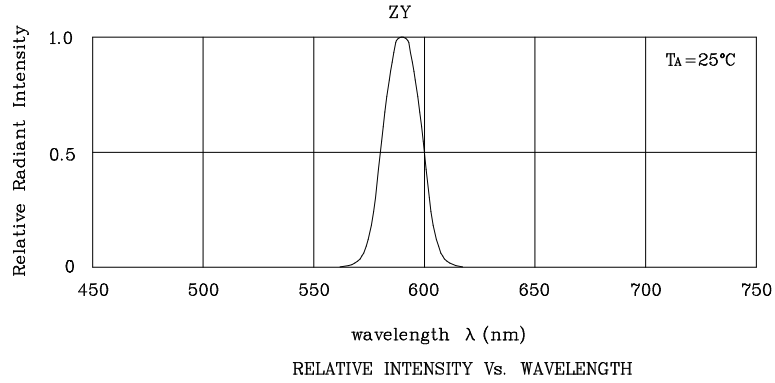
Absolute maximum ratings (TA=25°C)		ZY (InGaAlP)	Unit
Reverse voltage	VR	5	V
Forward current	IF	70	mA
Forward current (peak) 1/10Duty cycle 0.1ms pulse width	iFS	140	mA
Power dissipation	PT	196	mW
Operating temperature	TA	-40 ~ +85	°C
Storage temperature	Tstg	-40 ~ +85	
Lead solder temperature [2mm below package base]	260°C For 5 Seconds		

Operating Characteristics (TA=25°C)		ZY (InGaAlP)	Unit
Forward voltage (typ.) (IF=20mA)	VF	2.3	V
Forward voltage (max.) (IF=20mA)	VF	2.8	V
Reverse current (VR=5V)	IR	10	uA
Wavelength at peak emission (IF=20mA)	λ peak	590	nm
Wavelength at Dominate emission (IF=20mA)	λ D	589	nm
Spectral Line half-width (IF=20mA)	$\Delta\lambda$	20	nm
Capacitance (VF=0V, f=1MHz)	C	45	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity (IF=20mA*70mA) mcd		Viewing Angle 2 θ 1/2
				min.	typ.	
XSZY83W	Yellow	InGaAlP	Water Clear	280 *480	440 *1090	70°

Notes:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. * Luminous intensity with asterisk is measured at 70mA under 40ms pulse width.
3. Drive current between 10mA and 30mA are recommended for long term performance.
4. Operation at current below 10mA is not recommended.



❖ ZY

