

TECHNICAL DATA

Absolute maximum ratings (T _A =25°C)		E, I Hi.Eff.Red Orange (GaAsP/GaP)	H Bright Red (GaP)	SR Super Bright Red (GaAlAs)	SR-J4 Super Bright Red (AlGaInP)	SURK Hyper Red (AlGaInP)	SURK-T Hyper Red (AlGaInP)	SUR-E Hyper Red (AlGaInP)	Unit
Reverse voltage	V _R	●	●	●	●	●	●	●	V
Forward current	I _F	5	5	5	5	5	5	5	mA
Forward current (Peak) 1/10 Duty Cycle, 0.1ms Pulse Width	i _{FS}	30	25	30	30	30	30	30	mA
Power dissipation	P _D	160	130	155	150	185	150	200	mW
LED LAMPS:									
Operating temperature	T _A	75	62.5	75	75	75	75	75	°C
Storage temperature	T _{STG}	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C
LED DISPLAYS:									
Operating temperature	T _A	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C
Storage temperature	T _{STG}	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C

Operating Characteristics		E, I Hi.Eff.Red Orange (GaAsP/GaP)	H Bright Red (GaP)	SR Super Bright Red (GaAlAs)	SR-J4 Super Bright Red (AlGaInP)	SURK Hyper Red (AlGaInP)	SURK-T Hyper Red (AlGaInP)	SUR-E Hyper Red (AlGaInP)	Unit
Forward voltage (typ.) I _F =20mA	V _F	●	●	●	●	●	●	●	V
I _F =10mA		2.0	2.25	1.85	2.1	1.95	2.0	1.9	
I _F =2mA		1.9	2.05	1.8	1.8	1.85	1.85	1.8	
Forward voltage (max.) I _F =20mA	V _F	1.7	1.85	1.65	1.65	1.75	1.75	1.7	V
I _F =10mA		2.5	2.5	2.5	2.5	2.5	2.5	2.5	
I _F =2mA		2.3	2.45	2.3	2.3	2.35	2.25	2.35	
Reverse current V _R =5V	I _R	2.1	2.25	2.1	2.1	2.2	2.15	2.2	uA
Peak Emission Wavelength I _F =20mA, 10mA, 2mA	λ _p	10	10	10	10	10	10	10	nm
Dominant Wavelength I _F =20mA, 10mA, 2mA	λ _D	627	700	655	660	645	645	645	nm
Spectral line half-width I _F =20mA, 10mA, 2mA	Δλ _{1/2}	617	635	640	640	630	630	630	nm
Capacitance V _F =0V, f=1MHZ	C	45	45	20	20	28	20	25	nm
		15	40	45	45	35	35	45	pF

TECHNICAL DATA

Absolute maximum ratings (T _A =25°C)		SEK-J3 Hyper Red	SE-J3 Hyper Red	SE-E Hyper Red	SE-H Hyper Red	SEK-J4 Super Bright Orange	N Pure Orange	SEK Super Bright Orange	Unit
		(AlGaInP)	(AlGaInP)	(AlGaInP)	(AlGaInP)	(AlGaInP)	(GaAsP/GaP)	(AlGaInP)	
Reverse voltage	V _R	●	●	●	●	●	●	●	V
Forward current	I _F	30	30	30	30	30	25	30	mA
Forward current (Peak) 1/10 Duty Cycle, 0.1ms Pulse Width	I _{FS}	150	150	195	150	150	145	195	mA
Power dissipation	P _D	84	84	75	84	84	62.5	75	mW
LED LAMPS:									
Operating temperature	T _A	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C
Storage temperature	T _{STG}	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C
LED DISPLAYS:									
Operating temperature	T _A	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C
Storage temperature	T _{STG}	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C

Operating Characteristics		SEK-J3 Hyper Red	SE-J3 Hyper Red	SE-E Hyper Red	SE-H Hyper Red	SEK-J4 Super Bright Orange	N Pure Orange	SEK Super Bright Orange	Unit
		(AlGaInP)	(AlGaInP)	(AlGaInP)	(AlGaInP)	(AlGaInP)	(GaAsP/GaP)	(AlGaInP)	
Forward voltage (typ.) I _F =20mA	V _F	●	●	●	●	●	●	●	V
I _F =10mA		2.2	2.2	2.0	2.2	2.2	2.05	2.1	
I _F =2mA		2.0	2.0	1.9	2.05	2.0	1.95	2.0	
Forward voltage (max.) I _F =20mA	V _F	●	●	●	●	●	●	●	V
I _F =10mA		1.8	1.8	1.8	1.85	1.8	1.85	1.85	
I _F =2mA		2.8	2.8	2.5	2.8	2.8	2.5	2.5	
Reverse current V _R =5V	I _R	2.3	2.3	2.3	2.4	2.4	2.3	2.35	V
Peak Emission Wavelength I _F =20mA, 10mA, 2mA	λ _P	2.15	2.15	2.1	2.2	2.2	2.1	2.2	V
Dominant Wavelength I _F =20mA, 10mA, 2mA	λ _D	10	10	10	10	10	10	10	uA
Spectral line half-width I _F =20mA, 10mA, 2mA	Δλ _{1/2}	640	640	630	635	611	607	610	nm
Capacitance V _F =0V, f=1MHZ	C	625	625	621	625	605	602	605	nm
		20	25	20	25	17	35	29	nm
		27	27	25	27	27	15	15	pF

TECHNICAL DATA

Absolute maximum ratings (T _A =25°C)		SEK-T Super Bright Orange	G,SG Green, Super Bright Green	CG-KA Green	CGK Green	CGK-T Green	ZGK Green	ZG Green	Unit
		(AlGaInP)	(GaP)	(AlGaInP)	(AlGaInP)	(AlGaInP)	(InGaN)	(InGaN)	
Reverse voltage	V _R	5	5	5	5	5	5	5	V
Forward current	I _F	30	25	20	30	30	25	25	mA
Forward current (Peak) 1/10 Duty Cycle, 0.1ms Pulse Width	i _{FS}	150	140	100	150	150	150	150	mA
Power dissipation	P _D	75	62.5	48	75	78	102.5	102.5	mW
LED LAMPS:									
Operating temperature	T _A	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C
Storage temperature	T _{STG}	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C
LED DISPLAYS:									
Operating temperature	T _A	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C
Storage temperature	T _{STG}	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C

Operating Characteristics		SEK-T Super Bright Orange	G,SG Green, Super Bright Green	CG-KA Green	CGK Green	CGK-T Green	ZGK Green	ZG Green	Unit
		(AlGaInP)	(GaP)	(AlGaInP)	(AlGaInP)	(AlGaInP)	(InGaN)	(InGaN)	
Forward voltage (typ.) I _F =20mA	V _F	2.05	2.2	2.05	2.1	2.1	3.3	3.3	V
I _F =10mA		1.95	2.0	2.0	2.0	1.95	3.0	3.0	
I _F =2mA		1.8	1.9	1.92	1.9	1.8	2.65	2.65	
Forward voltage (max.) I _F =20mA	V _F	2.5	2.5	2.4	2.5	2.6	4.1	4.1	V
I _F =10mA		2.3	2.4	2.35	2.45	2.4	3.4	3.4	
I _F =2mA		2.2	2.25	2.25	2.3	2.3	3.1	3.1	
Reverse current V _R =5V	I _R	10	10	10	10	10	50	50	uA
Peak Emission Wavelength I _F =20mA, 10mA, 2mA	λ _p	610	565	573	574	574	515	515	nm
Dominant Wavelength I _F =20mA, 10mA, 2mA	λ _D	601	568	571	570	570	525	525	nm
Spectral line half-width I _F =20mA, 10mA, 2mA	Δλ _{1/2}	17	30	15	20	15	35	30	nm
Capacitance V _F =0V, f=1MHZ	C	15	15	15	15	15	45	45	pF

TECHNICAL DATA

Absolute maximum ratings (T _A =25°C)		ZG-E Green (InGaN)	ZG-G Green (InGaN)	Y Yellow (GaAsP/GaP)	SYK Super Bright Yellow (AlGaInP)	SYK-T Super Bright Yellow (AlGaInP)	SY-H Super Bright Yellow (AlGaInP)	Unit
Reverse voltage	V _R	5	5	5	5	5	5	V
Forward current	I _F	30	30	30	30	30	30	mA
Forward current (Peak) 1/10 Duty Cycle, 0.1ms Pulse Width	I _{FS}	100	100	140	175	150	140	mA
Power dissipation	P _D	120	120	75	75	75	84	mW
LED LAMPS:								
Operating temperature	T _A	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C
Storage temperature	T _{STG}	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C
LED DISPLAYS:								
Operating temperature	T _A	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C
Storage temperature	T _{STG}	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	°C

Operating Characteristics		ZG-E Green (InGaN)	ZG-G Green (InGaN)	Y Yellow (GaAsP/GaP)	SYK Super Bright Yellow (AlGaInP)	SYK-T Super Bright Yellow (AlGaInP)	SY-H Super Bright Yellow (AlGaInP)	Unit
Forward voltage (typ.) I _F =20mA	V _F	3.2	3.2	2.1	2.0	2.05	2.3	V
I _F =10mA		3.05	3.05	1.95	1.95	1.95	2.2	
I _F =2mA		2.8	2.8	1.85	1.85	1.8	2	
Forward voltage (max.) I _F =20mA	V _F	4.0	4.0	2.5	2.5	2.5	2.8	V
I _F =10mA		3.4	3.4	2.4	2.35	2.3	2.6	
I _F =2mA		3.1	3.1	2.2	2.2	2.2	2.3	
Reverse current V _R =5V	I _R	50	50	10	10	10	10	uA
Peak Emission Wavelength I _F =20mA, 10mA, 2mA	λ _P	520	520	590	590	590	590	nm
Dominant Wavelength I _F =20mA, 10mA, 2mA	λ _D	525	525	588	590	590	589	nm
Spectral line half-width I _F =20mA, 10mA, 2mA	Δλ _{1/2}	35	35	35	20	15	20	nm
Capacitance V _F =0V, f=1MHZ	C	100	100	20	20	25	45	pF

TECHNICAL DATA

Absolute maximum ratings (T _A =25°C)		SYK-J3 Super Bright Yellow (AlGaInP)	SY-J3 Super Bright Yellow (AlGaInP)	MB Blue (GaN)	QB-D Blue (InGaN)	VB-D Blue (InGaN)	Unit
Reverse voltage	V _R	●	●	●	●	●	V
Forward current	I _F	30	30	30	30	30	mA
Forward current (Peak) 1/10 Duty Cycle, 0.1ms Pulse Width	i _{FS}	140	140	150	150	100	mA
Power dissipation	P _D	75	75	135	120	120	mW
LED LAMPS:							
Operating temperature	T _A	- 40~+85	- 40~+85	- 40~+85	- 40~+85	- 40~+85	°C
Storage temperature	T _{STG}	- 40~+85	- 40~+85	- 40~+85	- 40~+85	- 40~+85	°C
LED DISPLAYS:							
Operating temperature	T _A	- 40~+85	- 40~+85	- 40~+85	- 40~+85	- 40~+85	°C
Storage temperature	T _{STG}	- 40~+85	- 40~+85	- 40~+85	- 40~+85	- 40~+85	°C

Operating Characteristics		SYK-J3 Super Bright Yellow (AlGaInP)	SY-J3 Super Bright Yellow (AlGaInP)	MB Blue (GaN)	QB-D Blue (InGaN)	VB-D Blue (InGaN)	Unit
Forward voltage (typ.) I _F =20mA	V _F	●	●	●	●	●	V
I _F =10mA		2.0	2.0	3.8	3.3	3.3	
I _F =2mA		1.95	1.95	3.6	3.0	3.0	
Forward voltage (max.) I _F =20mA	V _F	1.85	1.85	3.4	2.65	2.65	V
I _F =10mA		2.5	2.5	4.5	4.0	4.0	
I _F =2mA		2.4	2.4	4.3	3.5	3.4	
Reverse current V _R =5V	I _R	2.2	2.2	3.8	3.1	3.1	uA
Peak Emission Wavelength I _F =20mA, 10mA, 2mA	λ _p	10	10	10	50	50	nm
Dominant Wavelength I _F =20mA, 10mA, 2mA	λ _D	590	590	430	460	465	nm
Spectral line half-width I _F =20mA, 10mA, 2mA	Δλ _{1/2}	590	590	466	465	470	nm
Capacitance V _F =0V, f=1MHZ	C	20	20	60	25	22	nm
		45	45	100	100	100	pF

TECHNICAL DATA 5V/12V/14V WITH INTERNAL RESISTANCE

Absolute maximum ratings (T _A =25°C)		I Hi.Eff.Red (GaAsP/GaP)	SR Super Bright Red (GaAlAs)	G Green (GaP)	Unit
Reverse voltage	V _R	● 5	● 5	● 5	V
Forward voltage (Max.) for 5V	V _F	6	6	6	V
Forward voltage (Max.) for 12V	V _F	14	14	14	V
Forward voltage (Max.) for 14V	V _F	16	16	16	V
Power dissipation for 5V	P _D	85	85	85	mW
Power dissipation for 12V	P _D	120	120	120	mW
Power dissipation for 14V	P _D	160	160	160	mW
LED LAMPS:					
Operating temperature	T _A	-40~+70	-40~+70	-40~+70	°C
Storage temperature	T _{STG}	-40~+85	-40~+85	-40~+85	°C
LED DISPLAYS:					
Operating temperature	T _A	-40~+70	-40~+70	-40~+70	°C
Storage temperature	T _{STG}	-40~+85	-40~+85	-40~+85	°C

Operating Characteristics		I Hi.Eff.Red (GaAsP/GaP)	SR Super Bright Red (GaAlAs)	G Green (GaP)	Unit
Forward current (typ.) V _F =5V	I _F	● 13	● 13	● 11.5	mA
Forward current (typ.) V _F =12V	I _F	8.5	8.5	8.5	mA
Forward current (typ.) V _F =14V	I _F	10.5	10.5	10.5	mA
Forward current (max.) V _F =5V	I _F	17.5	17.5	17.5	mA
Forward current (max.) V _F =12V	I _F	11.5	11.5	11.5	mA
Forward current (max.) V _F =14V	I _F	13.5	13.5	13.5	mA
Reverse current V _R =5V	I _R	10	10	10	uA
Peak Emission Wavelength V _F =5V,12V,14V	λ _p	627	655	565	nm
Dominant Wavelength V _F =5V,12V,14V	λ _D	617	640	568	nm
Spectral line half-width V _F =5V,12V,14V	Δλ _{1/2}	45	20	30	nm

TECHNICAL DATA FOR BLINKING LED LAMPS

Absolute maximum ratings ($T_A=25^{\circ}\text{C}$)		I Hi.Eff.Red (GaAsP/GaP)	H Bright Red (GaP)	SR Super Bright Red (GaAlAs)	Unit
Reverse voltage	V_R	0.5	0.5	0.5	V
Forward voltage (max.)	V_F	14	14	14	V
Total Power dissipation	P_D	310	310	310	mW
Operating temperature	T_A	- 40~+70	- 40~+70	- 40~+70	$^{\circ}\text{C}$
Storage temperature	T_{STG}	- 40~+85	- 40~+85	- 40~+85	$^{\circ}\text{C}$

Operating Characteristics		I Hi.Eff.Red (GaAsP/GaP)	H Bright Red (GaP)	SR Super Bright Red (GaAlAs)	Unit
Forward current (min.) $V_F=3.5\text{V}$	I_F	8	8	8	mA
Forward current (typ.) $V_F=5\text{V}$	I_F	22	22	22	mA
Supply current $V_F=3.5\text{V} \sim 14\text{V}$	I_{SON}	8 ~ 44	8 ~ 44	8 ~ 44	mA
Blink frequency $V_F=3.5\text{V} \sim 14\text{V}$	f	3 ~ 1.5	3 ~ 1.5	3 ~ 1.5	Hz
Peak Emission Wavelength	λ_p	627	700	655	nm
Dominant Wavelength	λ_D	617	635	640	nm
Spectral line half-width	$\Delta\lambda_{1/2}$	45	45	20	nm

TECHNICAL DATA FOR INFRARED

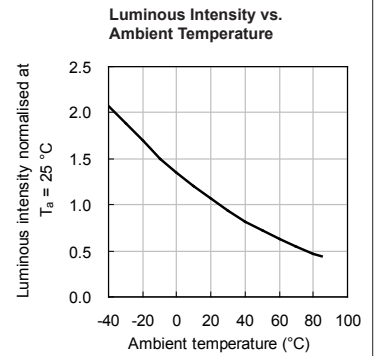
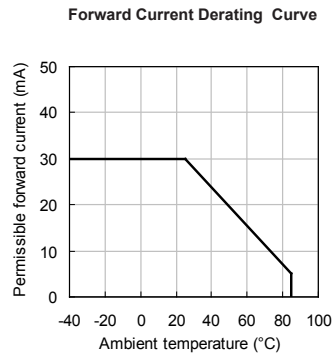
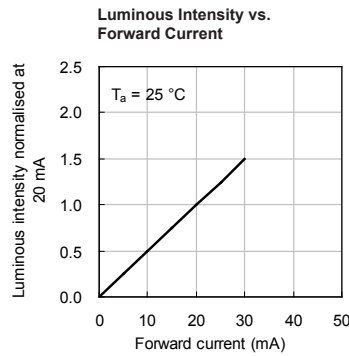
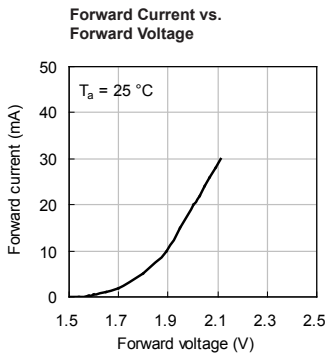
Absolute maximum ratings ($T_A=25^{\circ}\text{C}$)		F3 (GaAs)	SF4 (GaAlAs)	SF6 (GaAlAs)	SF7 (GaAlAs)	Unit
Reverse voltage	V_R	5	5	5	5	V
Forward current	I_F	50	50	50	50	mA
Forward current (Peak) 1/100 Duty Cycle, 10 μs Pulse Width	I_{FS}	1.2	1.2	1	1	A
Power dissipation	P_D	90	85	85	95	mW
LED LAMPS:						
Operating temperature	T_A	-40~+85	-40~+85	-40~+85	-40~+85	$^{\circ}\text{C}$
Storage temperature	T_{STG}	-40~+85	-40~+85	-40~+85	-40~+85	$^{\circ}\text{C}$
LED DISPLAYS:						
Operating temperature	T_A	-40~+85	-40~+85	-40~+85	-40~+85	$^{\circ}\text{C}$
Storage temperature	T_{STG}	-40~+85	-40~+85	-40~+85	-40~+85	$^{\circ}\text{C}$

Operating Characteristics		F3 (GaAs)	SF4 (GaAlAs)	SF6 (GaAlAs)	SF7 (GaAlAs)	Unit
Forward voltage (typ.) $I_F=20\text{mA}$	V_F	1.2	1.3	1.35	1.4	V
Forward voltage (max.) $I_F=20\text{mA}$	V_F	1.6	1.6	1.6	1.6	V
Reverse current $V_R=5\text{V}$	I_R	10	10	10	10	μA
Peak Emission Wavelength $I_F=20\text{mA}$	λ_p	940	880	860	850	nm
Spectral line half-width $I_F=20\text{mA}$	$\Delta\lambda_{1/2}$	50	50	50	50	nm
Capacitance $V_F=0\text{V}, f=1\text{MHZ}$	C	90	90	30	30	pF

TECHNICAL DATA

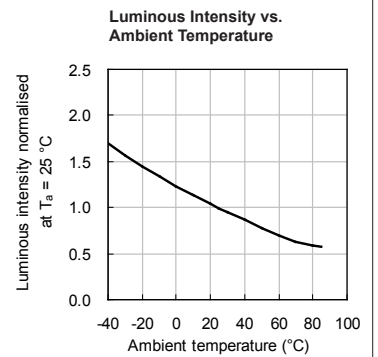
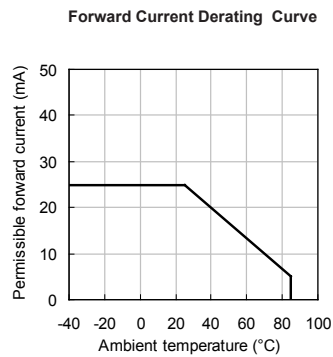
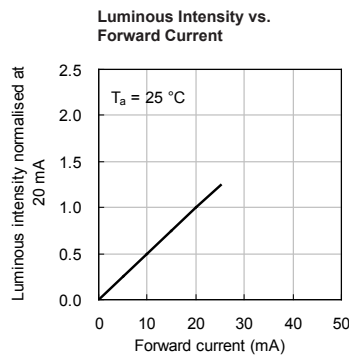
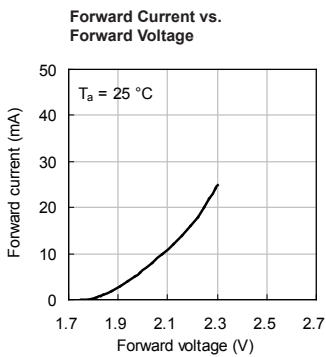
High Efficiency Red, Orange

E, I : GaAsP/GaP



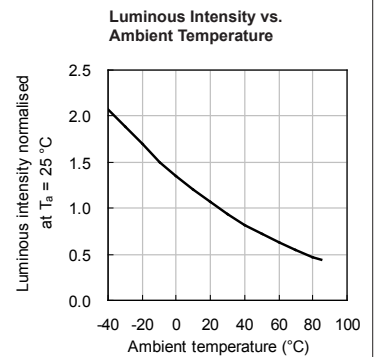
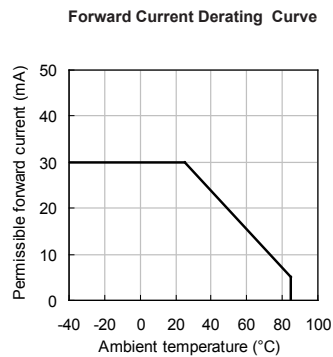
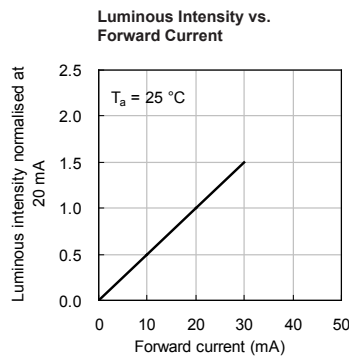
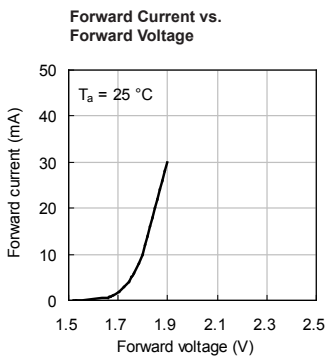
Bright Red

H : GaP



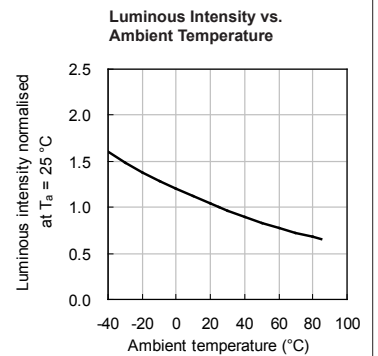
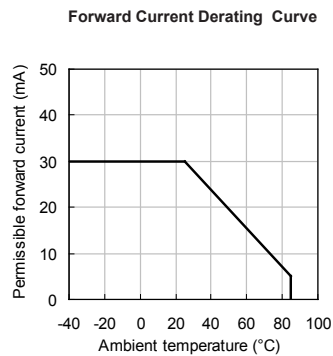
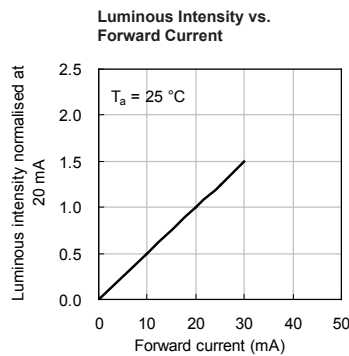
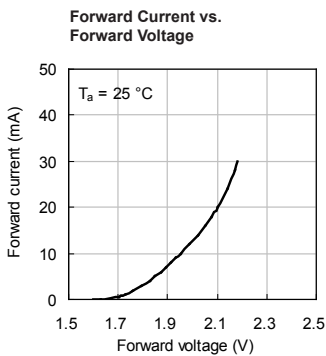
Super Bright Red

SR : GaAlAs



Super Bright Red

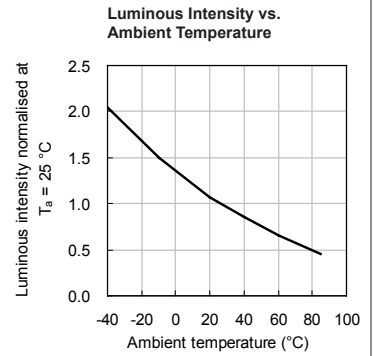
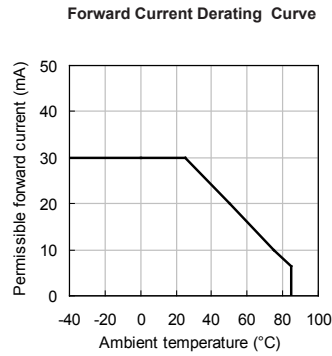
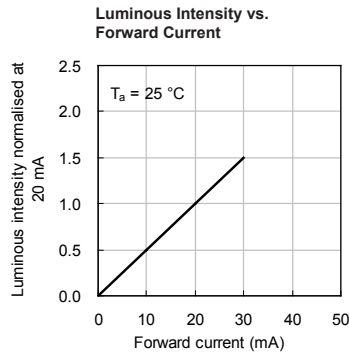
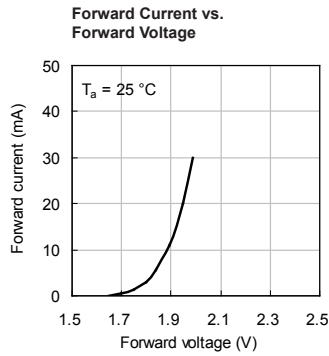
SR-J4 : AlGaInP



TECHNICAL DATA

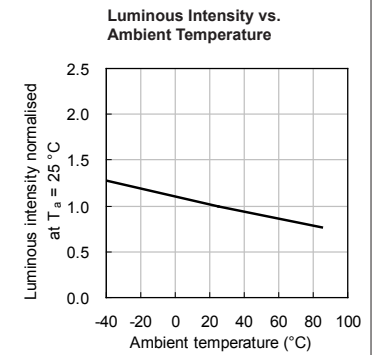
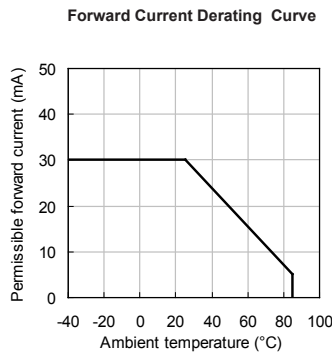
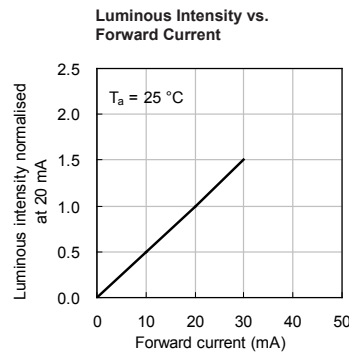
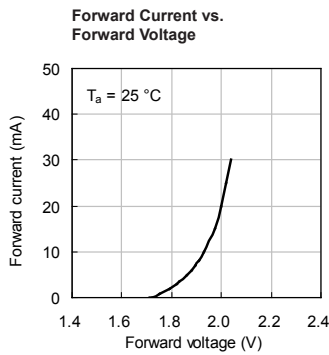
Hyper Red

SURK : AlGaInP



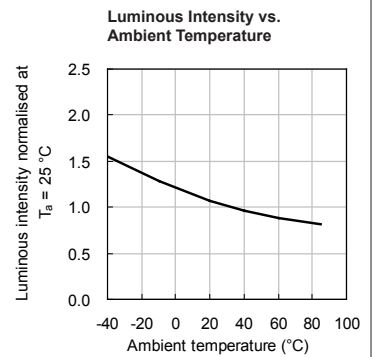
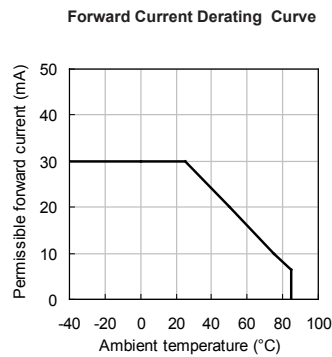
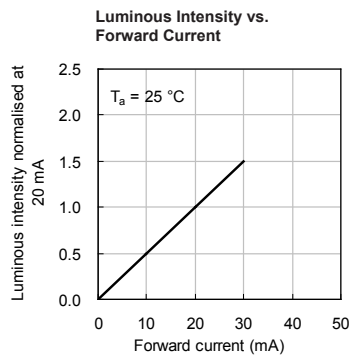
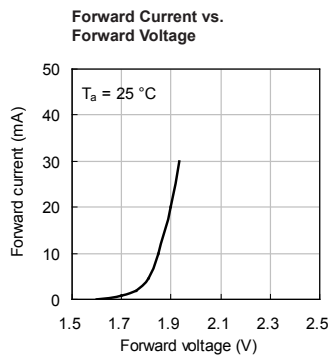
Hyper Red

SURK-T : AlGaInP



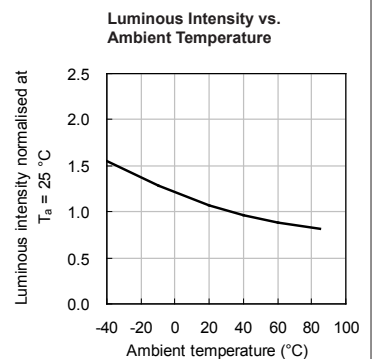
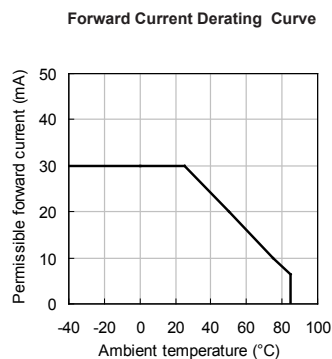
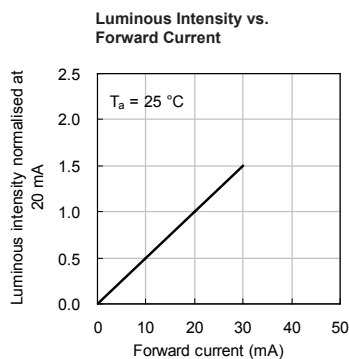
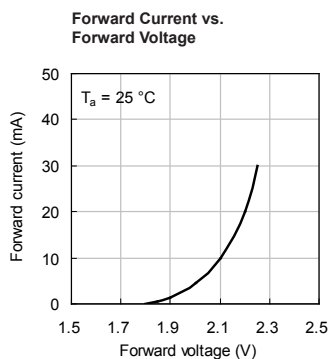
Hyper Red

SUR-E : AlGaInP



Hyper Red

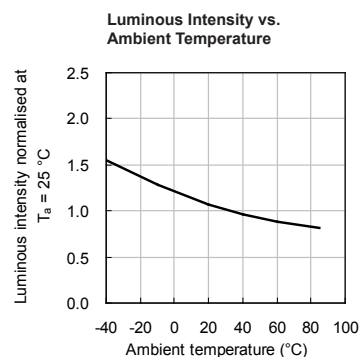
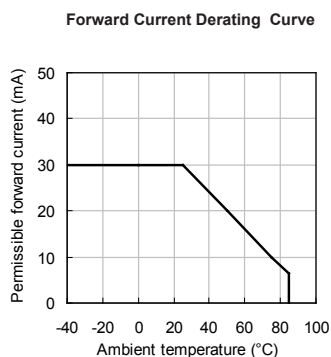
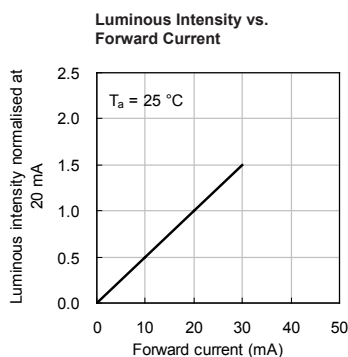
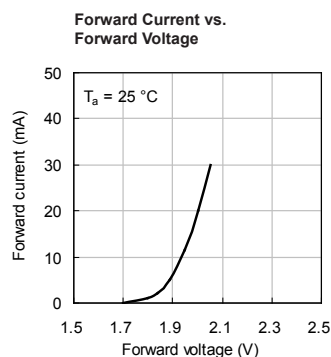
SEK-J3, SE-J3 : AlGaInP



TECHNICAL DATA

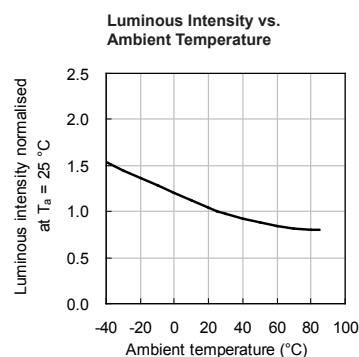
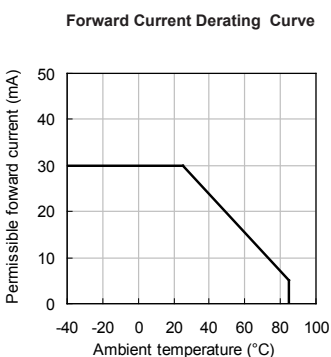
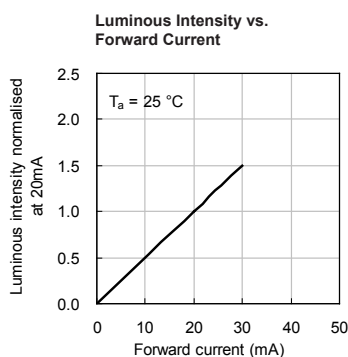
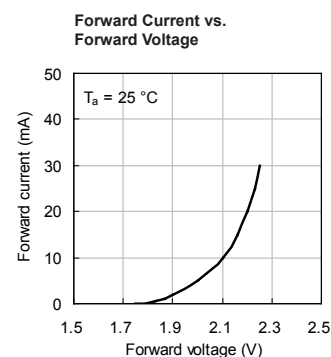
Hyper Red

SE-E : AlGaInP



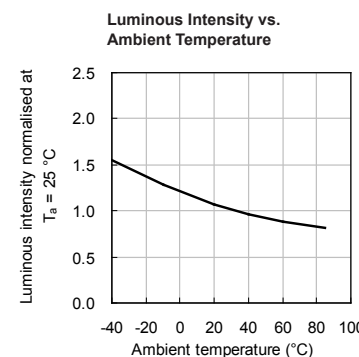
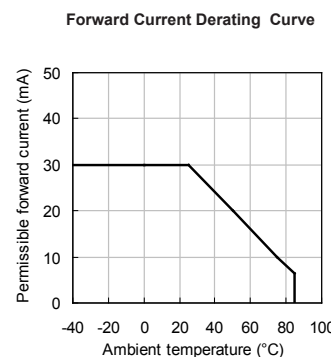
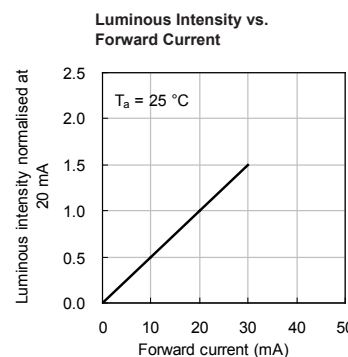
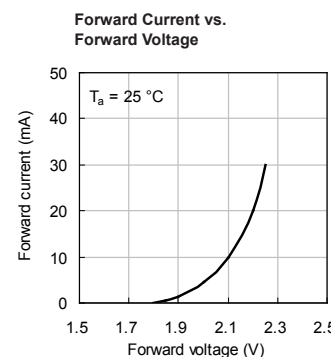
Hyper Red

SE-H : AlGaInP



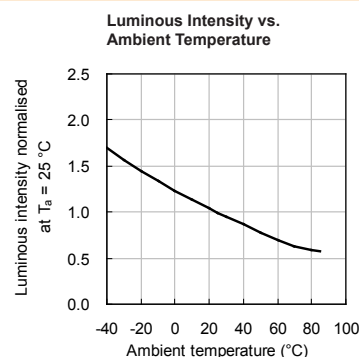
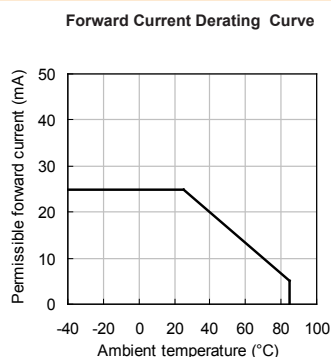
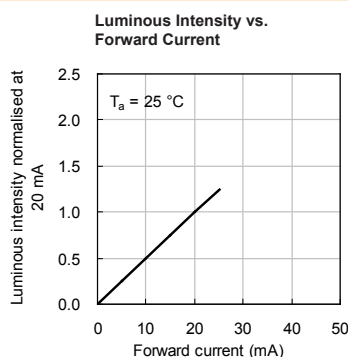
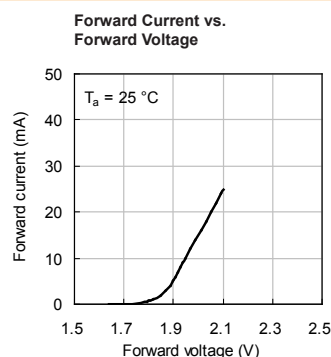
Super Bright Orange

SEK-J4 : AlGaInP



Pure Orange

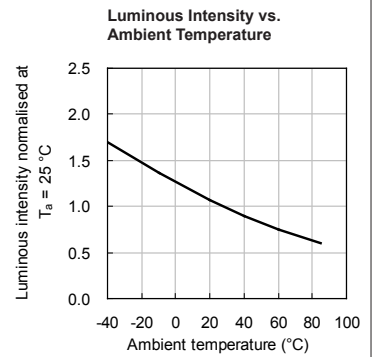
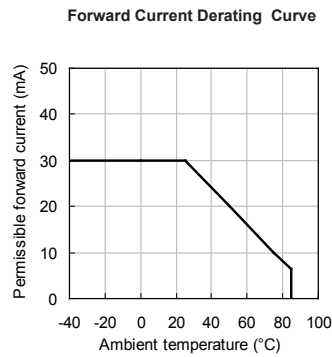
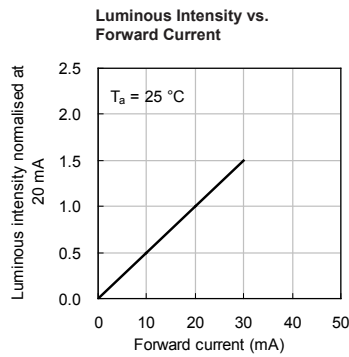
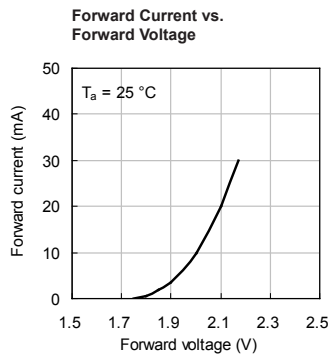
N : GaAsP/GaP



TECHNICAL DATA

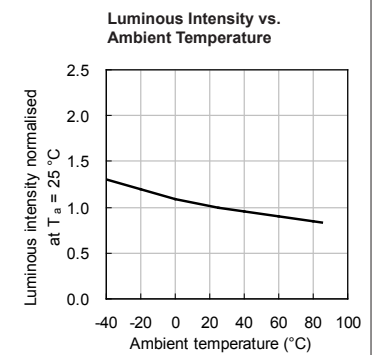
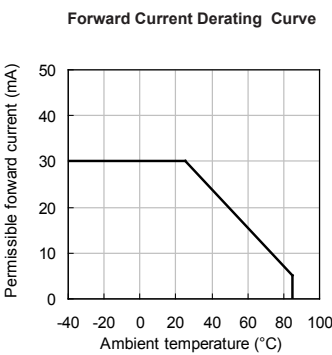
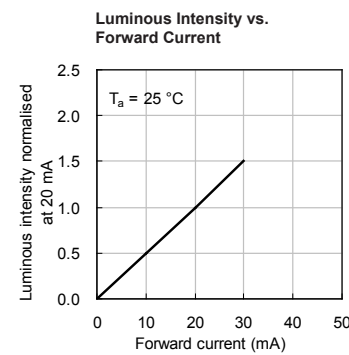
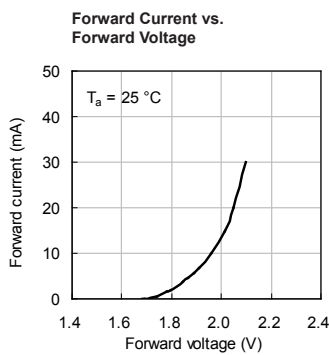
Super Bright Orange

SEK : AlGaInP



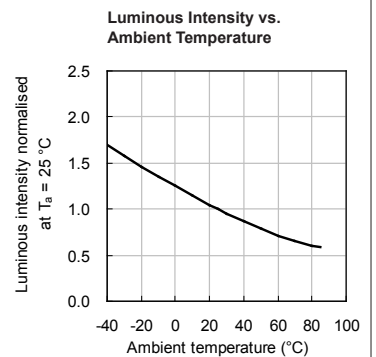
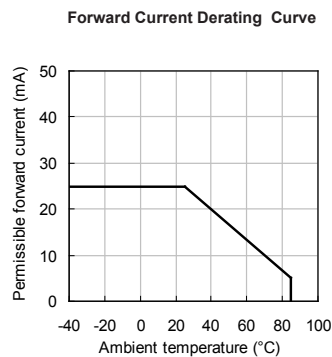
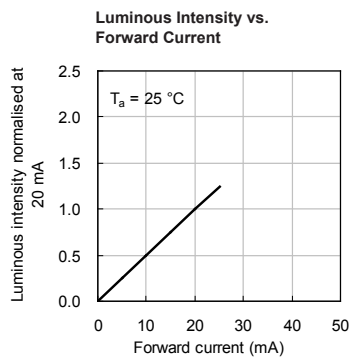
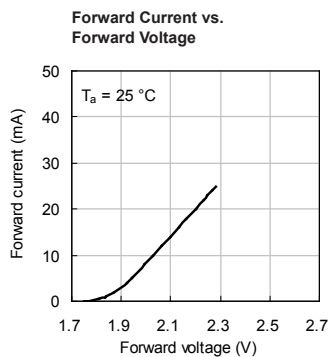
Super Bright Orange

SEK-T : AlGaInP



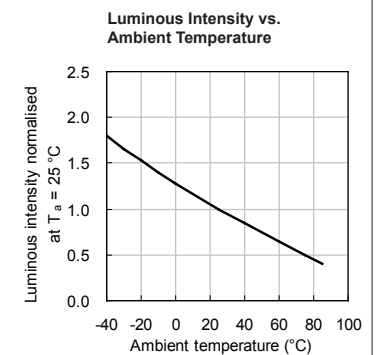
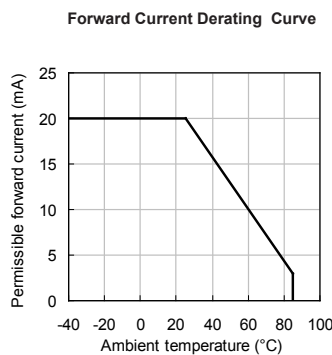
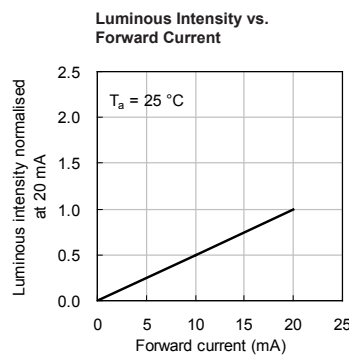
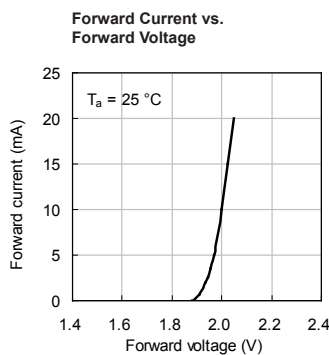
Green/Super Bright Green

G, SG : GaP

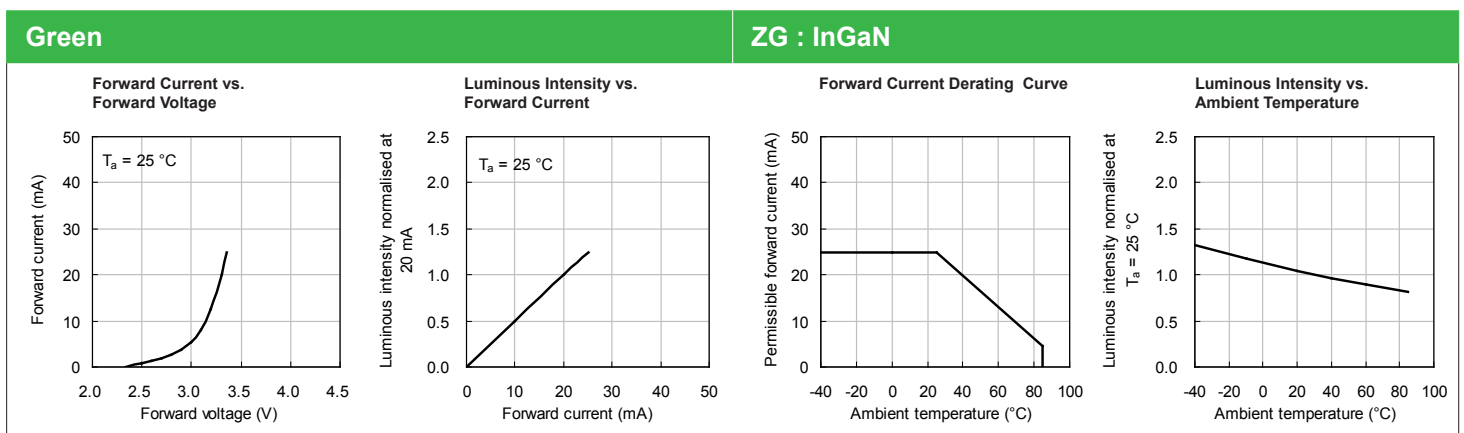
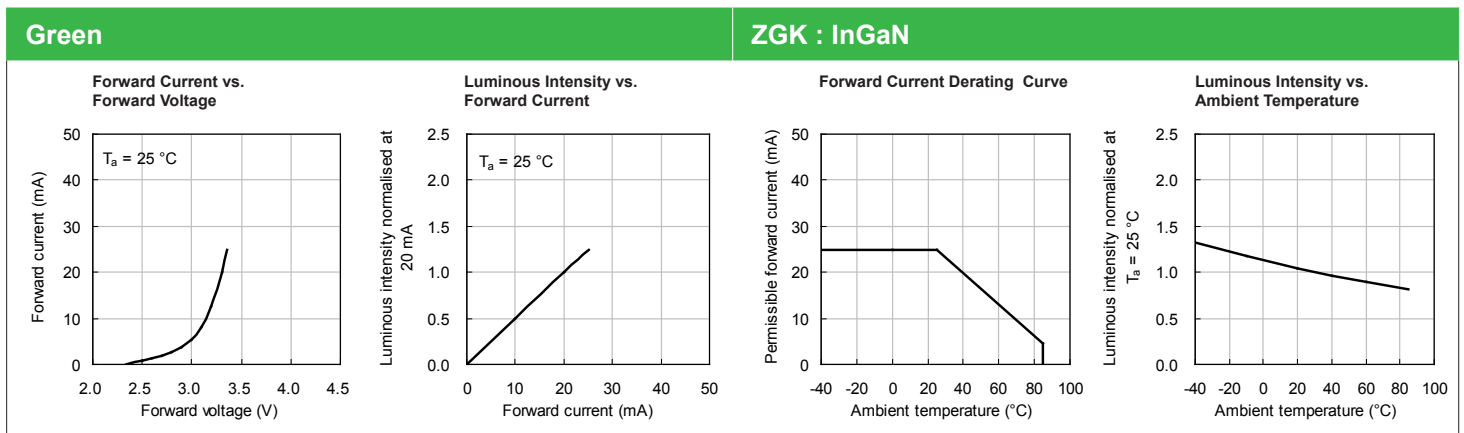
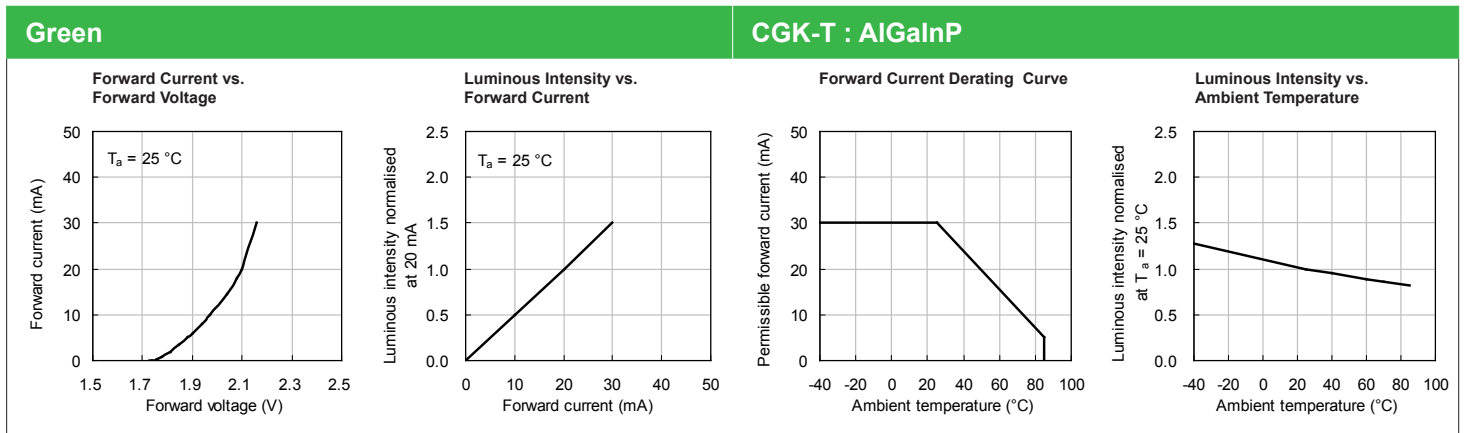
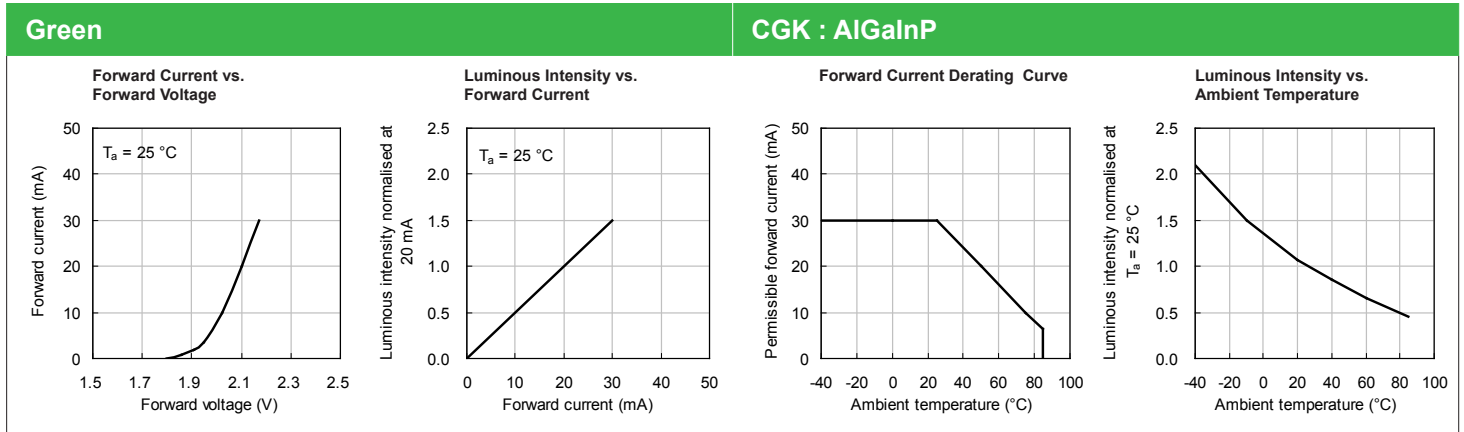


Green

CG-KA : AlGaInP



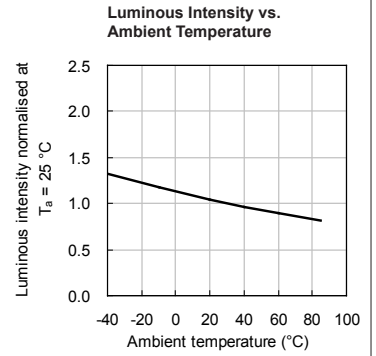
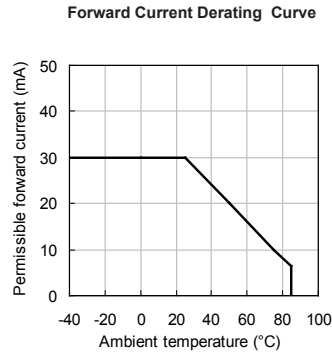
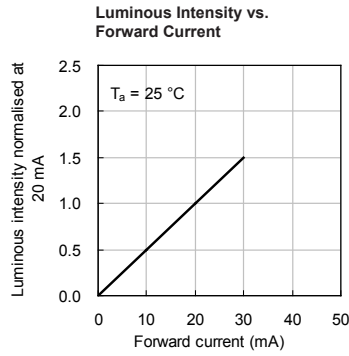
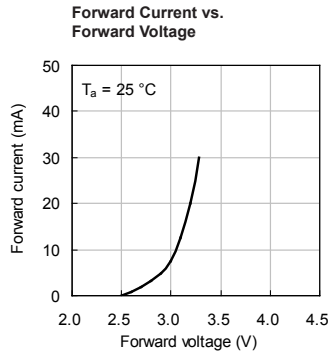
TECHNICAL DATA



TECHNICAL DATA

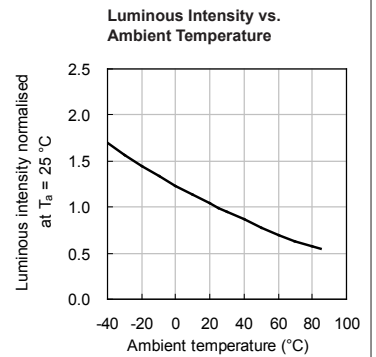
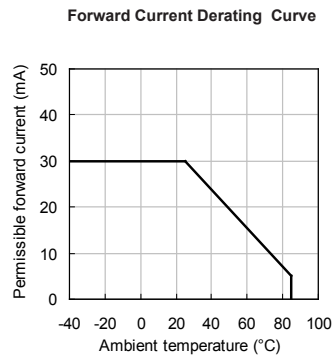
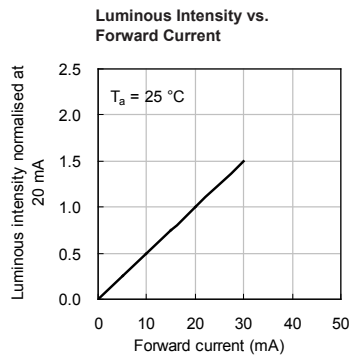
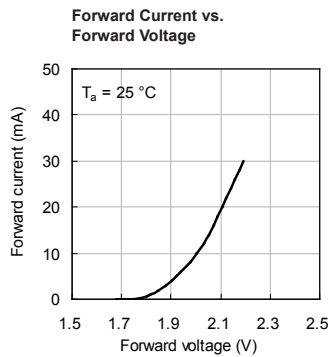
Green

ZG-E, ZG-G : InGaN



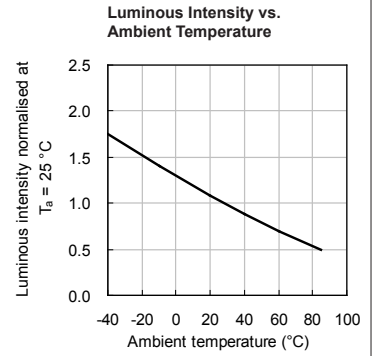
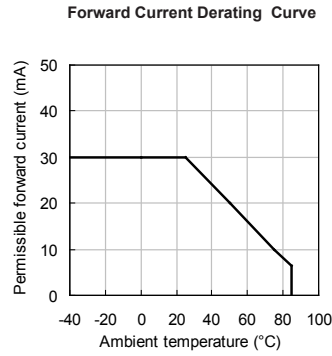
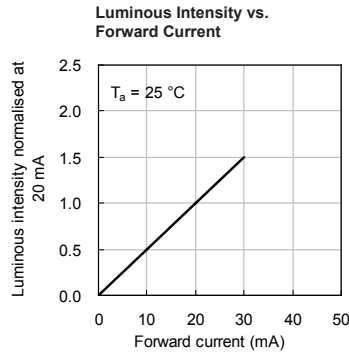
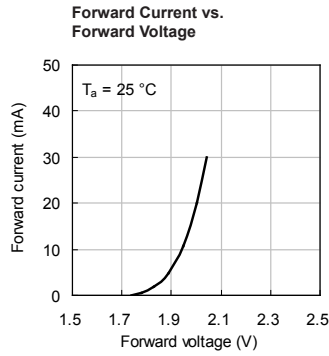
Yellow

Y : GaAsP/GaP



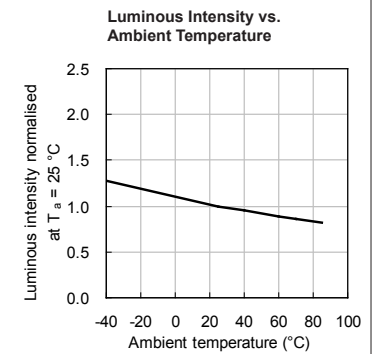
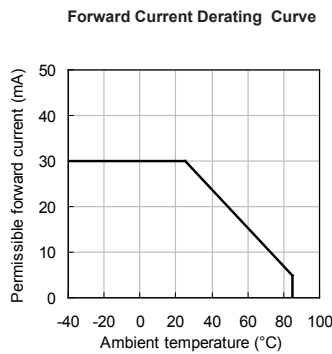
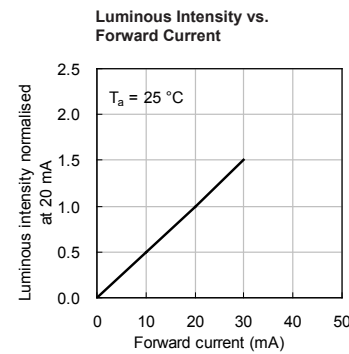
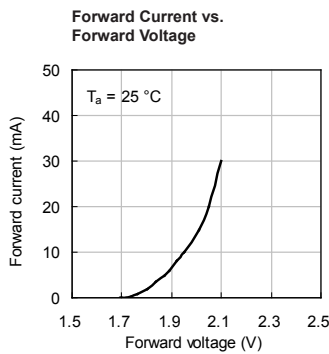
Super Bright Yellow

SYK, SYK-J3, SY-J3 : AlGaInP

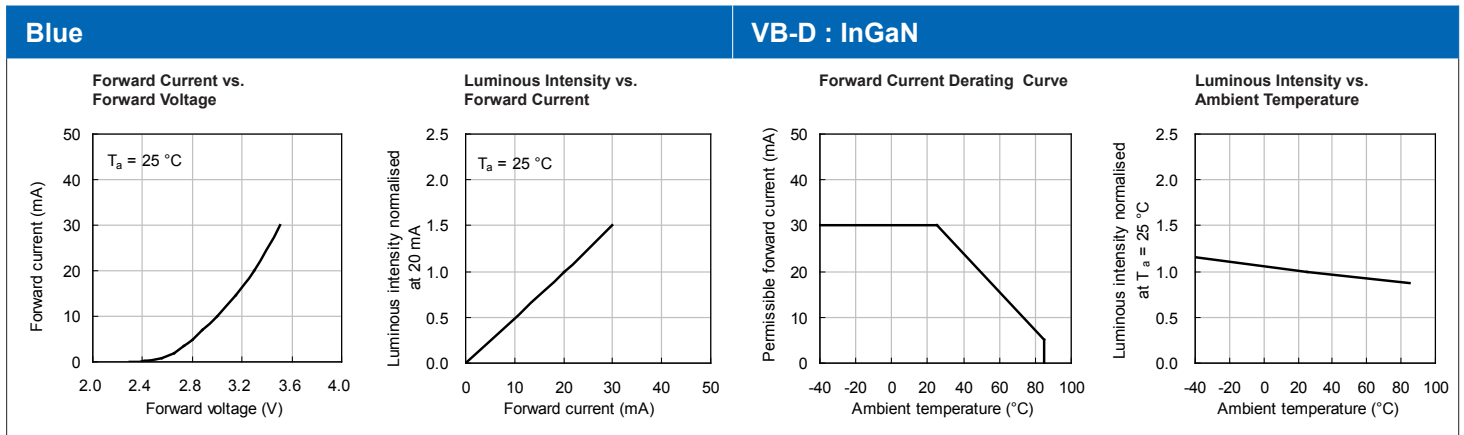
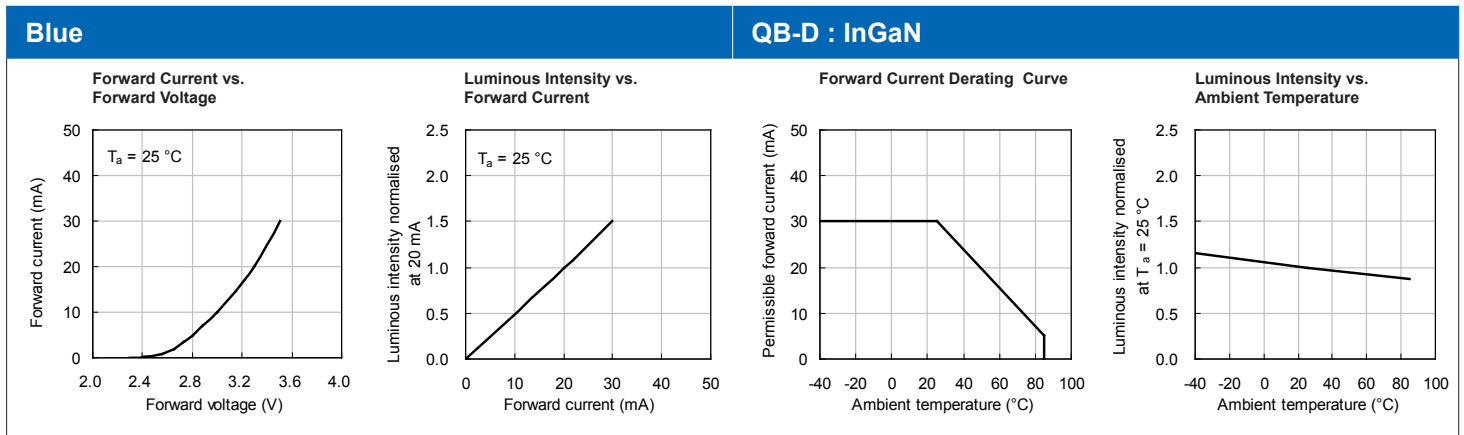
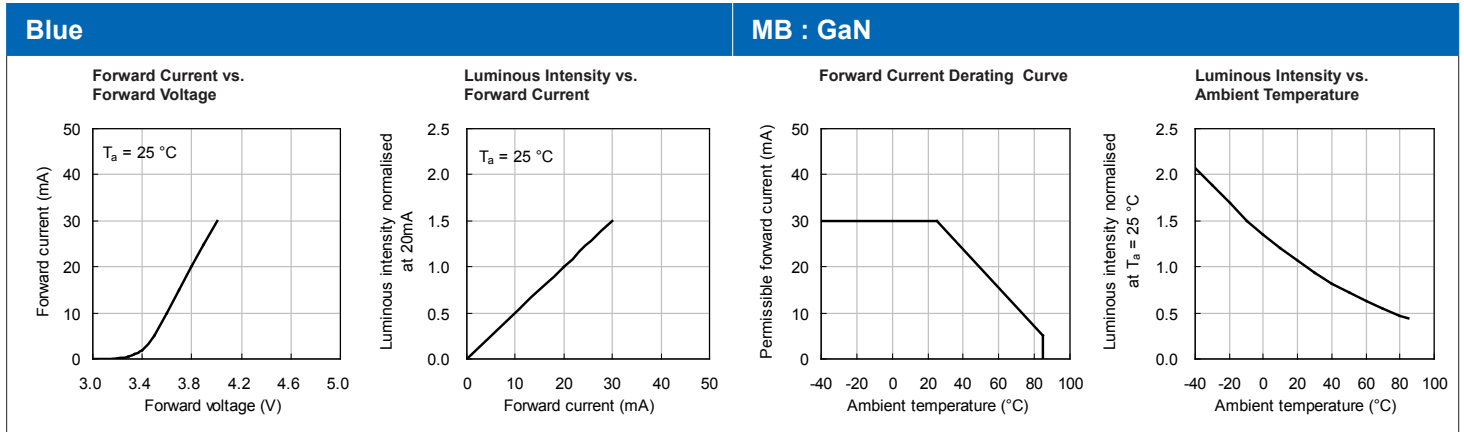


Super Bright Yellow

SYK-T : AlGaInP



TECHNICAL DATA



BIN CODE SYSTEMS

SELECTION CODE FOR STANDARD AND LOW CURRENT LEDs

(T_A=25°C Tolerance +/-15% IF<15mA)

Group	Light intensity in mcd		Group	Light intensity in mcd	
	Min.	Max.		Min.	Max.
F	0.1	0.2	W	120	180
G	0.2	0.35	X	180	250
H	0.35	0.5	Y	250	320
I	0.5	0.8	Z	320	450
K	0.8	1.2	ZA	450	550
L	1.2	2	ZB	550	700
M	2	4	ZC	700	1000
N	4	6	ZD	1000	1600
P	6	10	ZE	1600	2200
Q	10	15	ZF	2200	2800
R	15	20	ZG	2800	3400
S	20	30	ZH	3400	4300
T	30	50	ZM	4300	5200
U	50	80	ZN	5200	6300
V	80	120	ZP	6300	7400

SELECTION CODE FOR NPN PHOTOTRANSISTORS

(T_A=25°C Tolerance +/-15%)

Group	Photocurrent(mA)		Group	Photocurrent(mA)	
	Min.	Max.		Min.	Max.
F	0.1	0.2	L	1.2	2
G	0.2	0.35	M	2	4
H	0.35	0.5	N	4	6
I	0.5	0.8	P	6	10
K	0.8	1.2	-	-	-

SELECTION CODE FOR INFRARED EMITTING DIODES

(T_A=25°C Tolerance +/-15%)

Group	Radiant intensity in mW/sr		Group	Radiant intensity in mW/sr	
	Min.	Max.		Min.	Max.
AK	0.8	1.2	D	8	12
AL	1.2	2	E	12	20
A	2	3	F	20	40
B	3	5	G	40	55
C	5	8	H	55	80

SELECTION CODE FOR SUPER BRIGHT LEDs

(T_A=25°C Tolerance +/-15% IF≥15mA)

Group	Light intensity in mcd		Group	Light intensity in mcd	
	Min.	Max.		Min.	Max.
A	2	3	ZA	3100	3600
B	3	5	ZB	3600	4200
C	5	8	ZC	4200	5000
D	8	12	ZD	5000	6000
E	12	20	ZE	6000	7000
F	20	40	ZF	7000	8000
G	40	55	ZG	8000	9000
H	55	80	ZH	9000	11000
M	80	120	ZM	11000	14000
N	120	200	ZN	14000	18000
P	200	300	ZP	18000	22000
Q	300	400	ZQ	22000	27000
R	400	500	ZR	27000	35000
S	500	700	ZS	35000	43000
T	700	1000	ZT	43000	55000
U	1000	1300	ZU	55000	75000
V	1300	1600	ZV	75000	130000
W	1600	1900	ZW	130000	200000
X	1900	2300	ZX	200000	320000
Y	2300	2700	ZY	320000	490000
Z	2700	3100	ZZ	490000	800000

SELECTION CODE FOR DISPLAYS

(T_A=25°C Tolerance +/-15% IF≤10mA)

Group	Light intensity in ucd		Group	Light intensity in ucd	
	Min.	Max.		Min.	Max.
C	70	140	P	14000	21000
D	140	240	Q	21000	31000
E	240	360	R	31000	52000
F	360	560	S	52000	88000
G	560	900	T	88000	150000
H	900	1400	U	150000	255000
I	1400	2200	V	255000	433000
K	2200	3600	W	433000	736000
L	3600	5600	X	736000	1251000
M	5600	9000	Y	1251000	2126000
N	9000	14000	Z	2126000	3614000

BIN CODE SYSTEMS

SELECTION CODE FOR LUMINOUS FLUX (T _A =25°C; Tolerance: +/-15%)					
Group	Luminous Flux in lm		Group	Luminous Flux in lm	
	Min.	Max.		Min.	Max.
A1	0.5	0.6	B10	50	60
A2	0.6	0.7	B11	60	70
A3	0.7	0.8	B12	70	80
A4	0.8	1	B13	80	90
A5	1	1.2	B14	90	100
A6	1.2	1.4	C1	100	120
A7	1.4	1.7	C2	120	140
A8	1.7	2	C3	140	160
A9	2	2.4	C4	160	180
A10	2.4	2.9	C5	180	210
A11	2.9	3.5	C6	210	240
A12	3.5	4.2	C7	240	280
A13	4.2	5	C8	280	320
A14	5	6	C9	320	370
A15	6	7.2	C10	370	430
A16	7.2	8.6	C11	430	490
A17	8.6	10	C12	490	560
B1	10	12	C13	560	640
B2	12	14	C14	640	740
B3	14	17	C15	740	850
B4	17	20	C16	850	1000
B5	20	24	D1	1000	1200
B6	24	29	D2	1200	1400
B7	29	35	D3	1400	1600
B8	35	42	D4	1600	1800
B9	42	50	D5	1800	2100

COLOR CODE FOR GREEN LEDS + DISPLAYS (T _A =25°C; Tolerance: +/-1nm)				
Group	Dom. Wavelength (nm)			
	Min.	Max.	Min.	Max.
0	556	559	-	-
1	559	561	515	520
2	561	563	520	525
3	563	565	525	530
4	565	567	530	535
5	567	569	535	540
6	569	571	-	-
7	571	573	-	-
8	573	575	-	-

COLOR CODE FOR BLUE LEDS + DISPLAYS (T _A =25°C; Tolerance: +/-1nm)					
Group	Dom. Wavelength (nm)		Group	Dom. Wavelength (nm)	
	Min.	Max.		Min.	Max.
1	445	450	3A	471	473
2	450	455	3B	473	475
3	455	460	4A	475	477
1A	460	463	4B	477	479
1B	463	466	5A	479	481
2A	466	469	5B	481	483
2B	469	471	5C	483	486

COLOR CODE FOR YELLOW LEDS + DISPLAYS (T _A =25°C; Tolerance: +/-1nm)					
Group	Dom. Wavelength (nm)		Group	Dom. Wavelength (nm)	
	Min.	Max.		Min.	Max.
1	581	584	5	590	592
2	584	586	6	592	594
3	586	588	7	594	597
4	588	590	8	597	600

SOLDERING INSTRUCTIONS						
Types	Dip soldering / * wave soldering			Iron soldering (with 1.5mm iron tip)		
	Temperature of the soldering bath	Maximum soldering time	Distance from solder joint to package	Temperature of soldering iron	Maximum soldering time	Distance from solder joint to package
LEDS	<=260°C	3s	>=2mm	<=350°C	3s	>2mm
	<=260°C	5s	>=5mm	<=350°C	5s	>5mm
SMDS	-	-	-	<=350°C	3s (one time only)	-
DISPLAYS	*<=260°C	*3s	*>2mm	<=350°C	3s	>2mm
PHOTOCOUPLER	<=260°C	3s	>2mm	<=310°C	3s	-
	-	-	-	<=260°C	10s	-