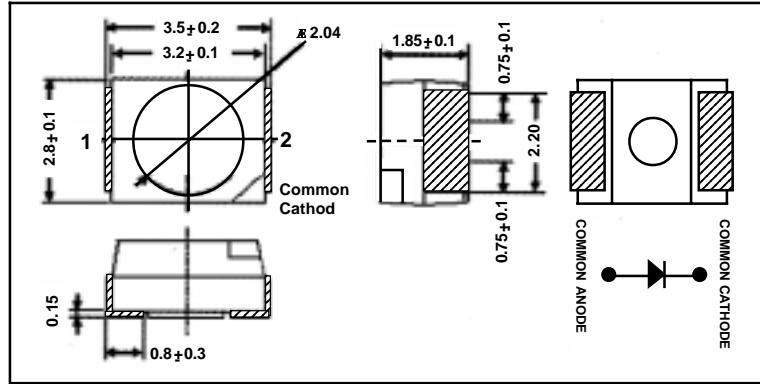


Face Length	MM	3.2
Face Width	MM	2.8
Height	MM	1.8
Pin Spacing	MM	1.5
Row Spacing	MM	3.2
No. of pins	Pins	4
Viewing Angle	2 $\frac{1}{2}$ Deg.	120



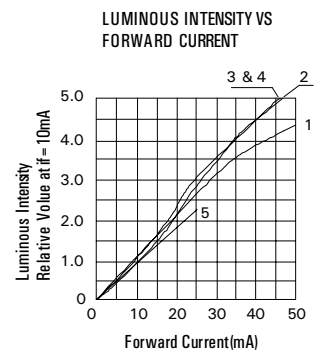
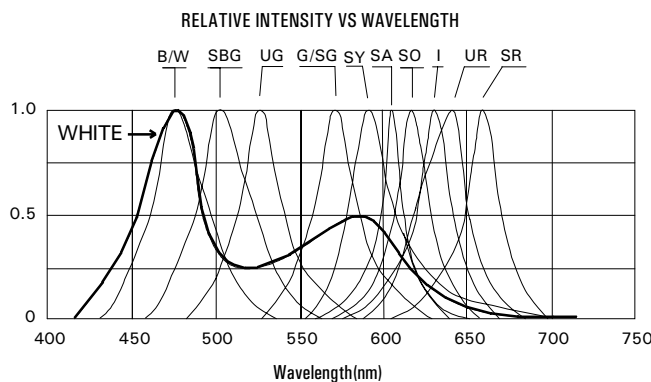
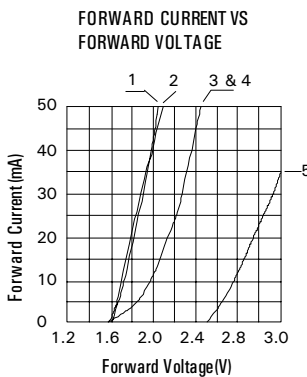
Note : All Dimensions are in mm

Tolerance  $\pm 0.2$  mm

PART NO.			KLSL 3228 I	KLSL 3228 SR	KLSL 3228 G	KLSL 3228 SG	KLSL 3228 SY	KLSL 3228 SA	KLSL 3228 UR	KLSL 3228 SO	KLSL 3228 B/UB	KLSL 3228 BG	KLSL 3228 UG	KLSL 3228 W	
OPERATING CHARACTERISTICS AT 25°C (Bigger Display may have more than one LED chip per segment)		UNITS	SYMBOL	RED I	SUPER RED SR	GREEN G	SUPER GREEN SG	SUPER YELLOW SY	SUPER AMBER SA	ULTRA RED UR	SUPER ORANGE SO	BLUE B/UB	BLUE GREEN BG	ULTRA GREEN UG	WHITE W
Semiconductor Composition				AlGaAs		GaP/AlInGaP		AlInGaP			SiC / GaInN				
Forward Voltage - Typical @ 10mA		V	V <sub>F</sub>	2.10	1.90	2.20	2.20	2.10	2.10	1.90	1.90	3.50	3.50	3.50	3.50
Forward Voltage - Maximum @ 70 mA		V	V <sub>FM</sub>	2.40	2.10	2.60	2.40	2.40	2.40	2.10	2.40	4.50	4.50	4.50	4.50
Reverse Current @ V <sub>R</sub> = 5V		mA	I <sub>R</sub>	100	100	100	100	100	100	100	100	100	100	100	100
Peak Emission Wavelength		nm	$\lambda_P$	630	660	568	568	590	610	645	620	470	502	525	---
Emission Wavelength Half Width		nm	D <sub>1/2</sub>	35	20	30	15	15	15	20	20	25	30	35	---
Luminous Intensity per Segment @ 70mA		mcd	I <sub>V</sub>	3500	6000	4000	6000	7000	7500	13000	13000	6000	7000	17000	---
Lumens Flux @70mA		mIm	$\Phi_V$	-	-	-	-	-	-	-	-	-	-	-	4000
ABSOLUTE MAXIMUM RATINGS AT 25°C		V	V <sub>R</sub>	5	5	5	5	5	5	5	5	5	5	5	5
Reverse Voltage		mA	I <sub>F</sub>	100	100	100	100	100	100	100	100	100	100	100	100
Forward Current (avg) *(NOTE 1)		mA	I <sub>FS</sub>	150	150	150	150	150	150	150	150	150	150	150	150
Peak Forward Current (T<1ms)															
Operating / Storage Temperature Range		-10° C to + 85° C													
Lead Soldering Temperature		< 200° C for 5 Seconds													
Series Resistor to be used per segment : 300 Ohms @ 5V Supply (OR) 50 to 100 Ohms @ 3V Supply															

\*NOTE 1. Use Adequate heatsink (250mm<sup>2</sup> plus) for current above 20mA

ELECTRICAL CHARACTERISTIC CURVES



1. AlGaAs : I, SR

2. GaP : G

3 & 4. AlInGaP : SG, SY, SA, UR, SO

5. GaInN : B, BG, UG, W

KPC/KLSL3228

Rev. 00

1-1-04



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