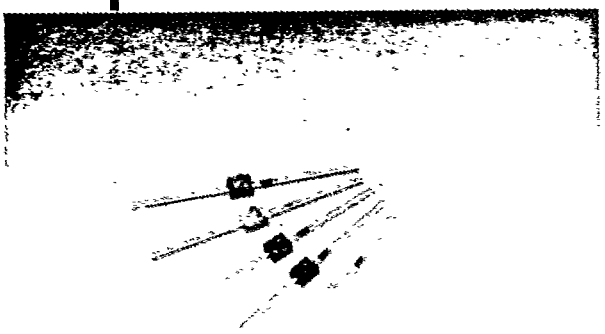
T-41-23

STANLEY

STANLEY SUPER BRIGHT LED LAMP

FLAT PACKAGE TYPE φ1.6(T-5/8)TYPE

2201 | 2221 | 2231 SERIES



■SELECTION GUIDE

COLOR	MATERIAL	PART NUMBER
Red	GaAlAs	(E)SBR 2201, 2221 2231
	GaAsP	SAR 2201, 2221 2231
	GaP	SPR 2201, 2221 2231
Green	GaP	SBG 2201, 2221
	GaP	SPG 2221, 2231
Yellow	GaP	SPY 2201, 2221
	GaAsP/GaP	SAY 2201, 2221
Orange	GaAsP/GaP	SAA 2201, 2221 2231

■FEATURES

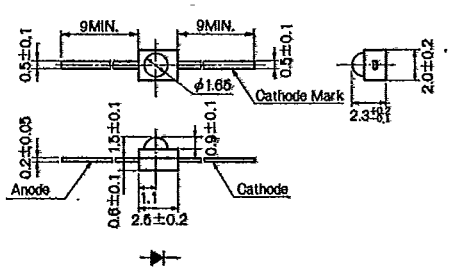
- AVAILABLE IN 4 COLORS; RED, GREEN, YELLOW AND ORANGE
- AXIAL TYPE PACKAGE
- PLACEMENT IN 2.5mm PITCHES (HIGH DENSITY ASSEMBLY)
- CLEAR LIGHT SOURCE
- LOW CURRENT DRIVE, DIRECTLY COMPATIBLE WITH IC
- QUICK RESPONSE, ALLOWING PULSED OPERATION
- HIGH RELIABILITY

■DESCRIPTION

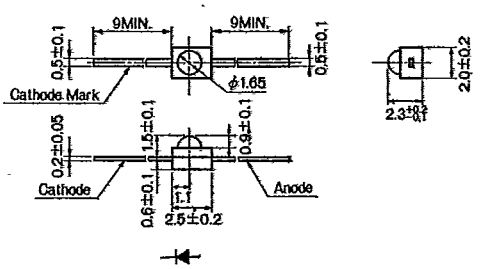
The 2201,2221 and 2231 are flat package LEDs with leads axially encapsulated. These LEDs can be used as mosaic display elements and also for monitor display of PC board. Chips used in these LEDs emit extreme brightness with high efficiency.

■Package Dimensions–Unit in mm

(E) SBR22□1



22□1



■Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Red			Green		Yellow		Orange	Units
		BR	AR	PR	BG	PG	PY	AY	AA	
Forward Current	I_F	40	40	30	40	40	40	40	40	mA
Peak Forward Current	I_{FM}	300	300	100	100	100	100	100	100	mA
Reverse Voltage	V_R	4			4		4		4	V
Power Dissipation	Pd	80	80	75	100	100	100	100	100	mW
Operating Temperature	Topr	−30~+ 85			−30~+ 85		−30~+ 85		-30~+85	°C
Storage Temperature	Tstg	−30~+100			−30~+100		−30~+100		-30~+100	°C
Lead Soldering Temperature		260°C for 5 seconds (3.0mm from body)								

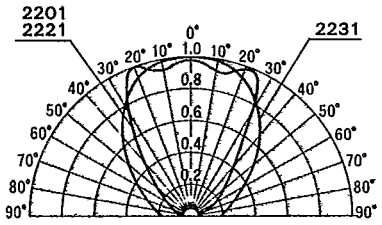
■Electro-Optical Characteristics (Ta=25°C)

Type No.	Chip		Lens	Iv(mcd)		at I_F (mA)	Peak Wave Length λp(nm)	Spectral Line Half Width Δλ(nm)	V_F(V)		at I_F (mA)	at V_R4V I_R(μA)	Capacitance Co(pF)
	Material	Emitted Color		Min.	Typ.				Typ.	Max.			
SBR2201(21)	GaAlAs	Red	W.C (C.C)	2.0	4.0	20	660	30	1.7	2.0	20	100	50
SBR2231	GaAlAs	Red	C.D	2.0	4.0	20	660	30	1.7	2.0	20	100	50
ESBR2201(21)	GaAlAs	Red	W.C (C.C)	4.0	8.0	20	660	30	1.7	2.0	20	100	50
SAR2201(21)	GaAsP	Red	W.C (C.C)	1.0	2.0	20	650	30	1.7	2.0	20	100	40
2231	GaAsP	Red	C.D	0.6	1.2	20	650	30	1.7	2.0	20	100	40
SPR2201(21)	GaP	Red	W.C (C.C)	0.8	1.6	10	700	100	2.1	2.5	10	100	70
2231	GaP	Red	C.D	0.5	1.0	10	700	100	2.1	2.5	10	100	70
SBG2201(21)	GaP	Green	W.C (C.C)	1.0	2.0	20	555	30	2.1	2.5	20	100	50
SPG2221	GaP	Green	C.C	1.5	3.0	20	565	30	2.1	2.5	20	100	40
2231	GaP	Green	C.D	1.0	2.0	20	565	30	2.1	2.5	20	100	40
SPY2201(21)	GaP	Yellow	W.C (C.C)	2.0	4.0	20	570	30	2.1	2.5	20	100	40
SAY2201(21)	GaAsP/GaP	Yellow	W.C (C.C)	1.0	2.0	20	580	30	2.2	2.5	20	100	40
SAA2201(21)	GaAsP/GaP	Orange	W.C (C.C)	1.2	2.4	20	605	30	2.2	2.5	20	100	50
2231	GaAsP/GaP	Orange	C.D	1.2	2.4	20	605	30	2.2	2.5	20	100	50

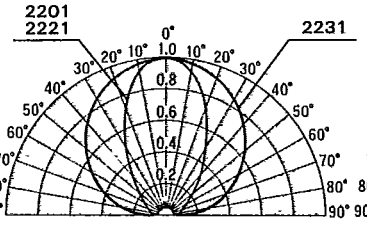
■RED

■SPATIAL DISTRIBUTION

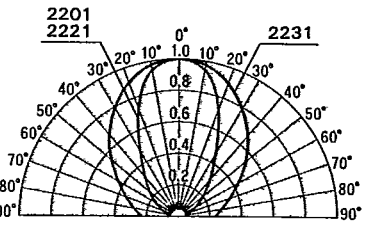
(E) SBR



SAR

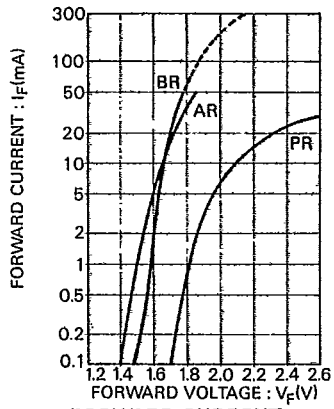


SPR

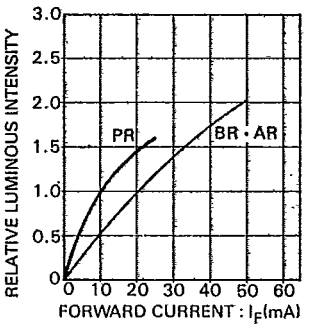


LED LAMP

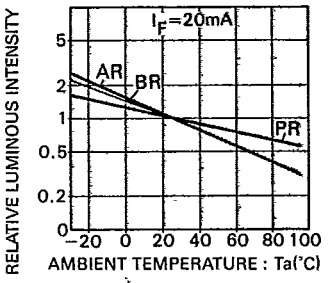
■RED



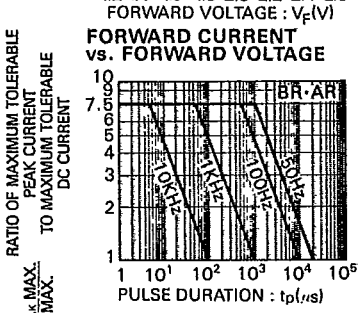
FORWARD CURRENT vs. FORWARD VOLTAGE

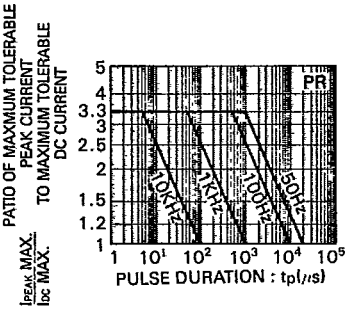


RELATIVE LUMINOUS INTENSITY vs. FORWARD CURRENT

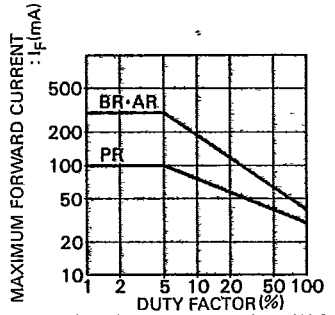


RELATIVE LUMINOUS INTENSITY vs. AMBIENT TEMPERATURE

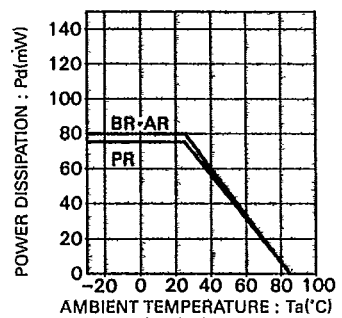




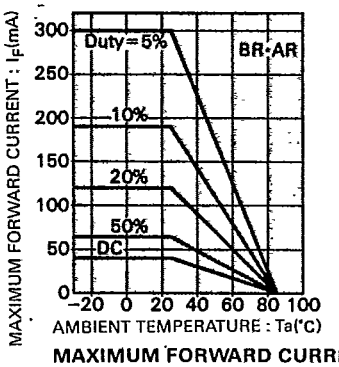
MAXIMUM TOLERABLE PEAK CURRENT vs. PULSE DURATION

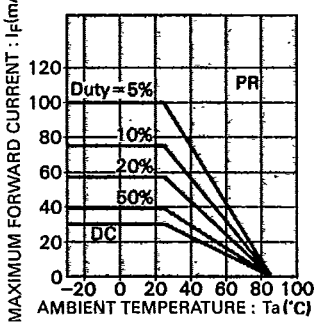


MAXIMUM FORWARD CURRENT vs. DUTY FACTOR

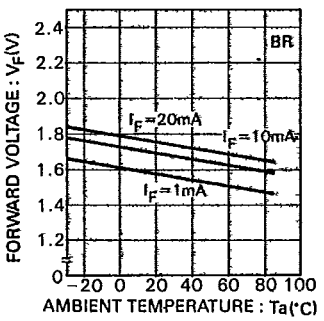


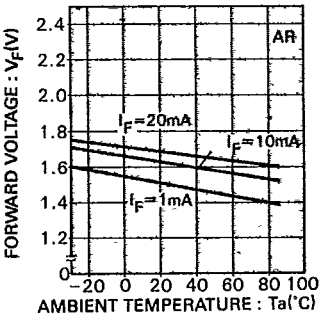
POWER DISSIPATION vs. AMBIENT TEMPERATURE

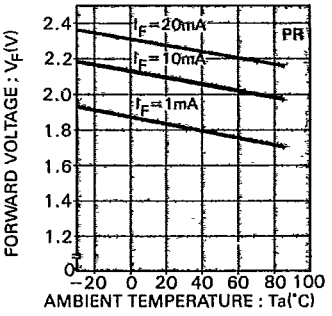




MAXIMUM FORWARD CURRENT vs. AMBIENT TEMPERATURE







FORWARD VOLTAGE vs. AMBIENT TEMPERATURE

■GREEN

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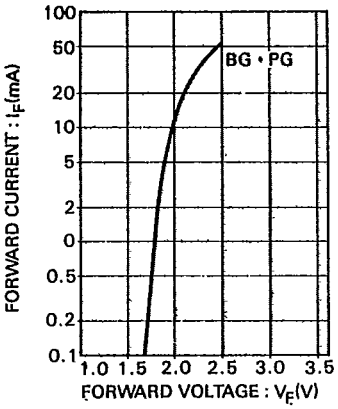
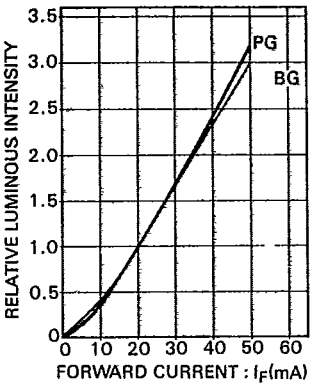
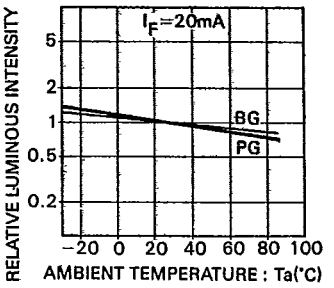


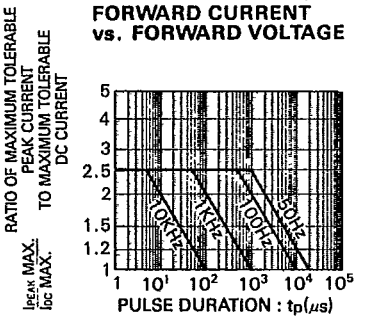
FORWARD CURRENT vs. FORWARD VOLTAGE



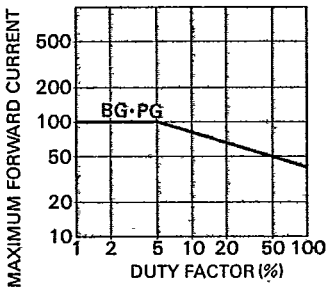
RELATIVE LUMINOUS INTENSITY vs. FORWARD CURRENT



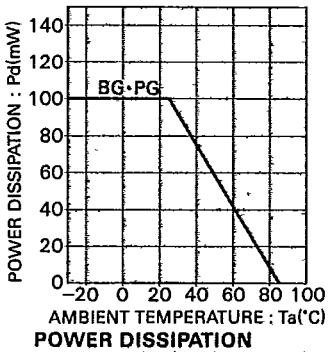
RELATIVE LUMINOUS INTENSITY vs. AMBIENT TEMPERATURE



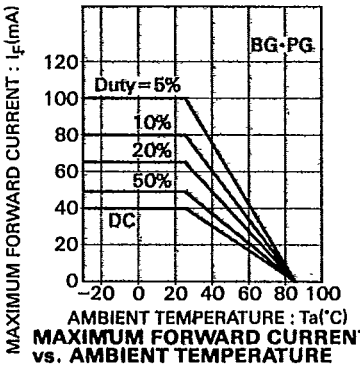
MAXIMUM TOLERABLE PEAK CURRENT vs. PULSE DURATION



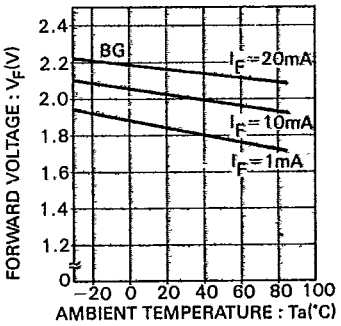
MAXIMUM FORWARD CURRENT vs. DUTY FACTOR

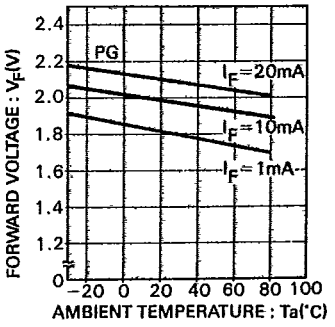


POWER DISSIPATION vs. AMBIENT TEMPERATURE



MAXIMUM FORWARD CURRENT vs. AMBIENT TEMPERATURE

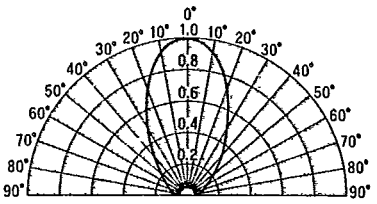




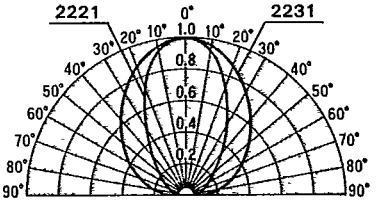
FORWARD VOLTAGE vs. AMBIENT TEMPERATURE

■SPATIAL DISTRIBUTION

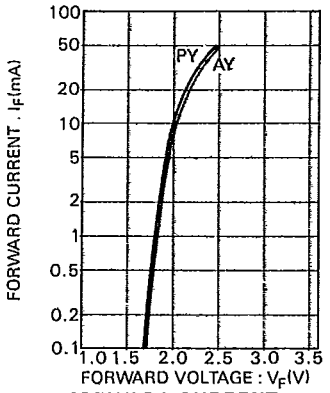
SBG



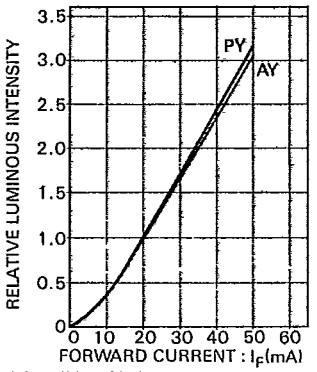
SPG



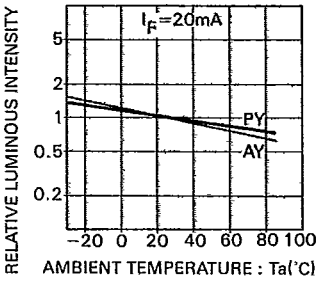
■YELLOW



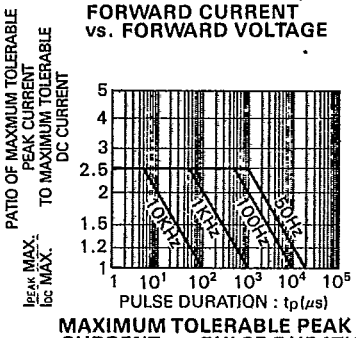
FORWARD CURRENT vs. FORWARD VOLTAGE



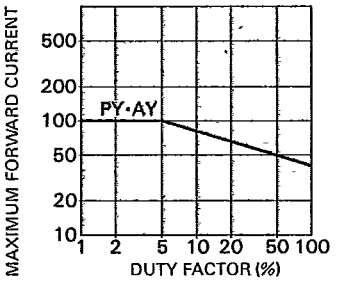
RELATIVE LUMINOUS INTENSITY vs. FORWARD CURRENT



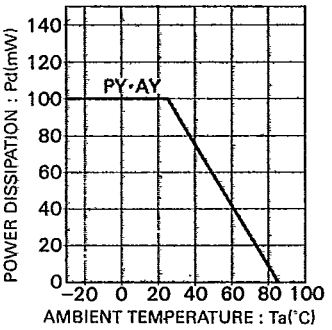
RELATIVE LUMINOUS INTENSITY vs. AMBIENT TEMPERATURE



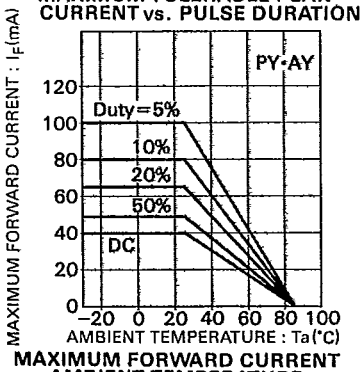
MAXIMUM TOLERABLE PEAK CURRENT vs. PULSE DURATION



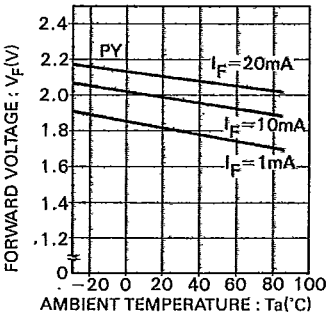
MAXIMUM FORWARD CURRENT vs. DUTY FACTOR

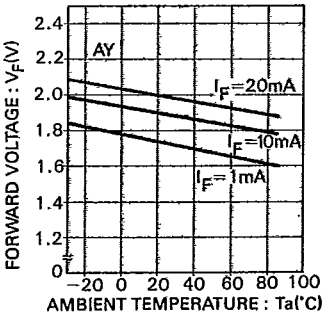


POWER DISSIPATION vs. AMBIENT TEMPERATURE



MAXIMUM FORWARD CURRENT vs. AMBIENT TEMPERATURE

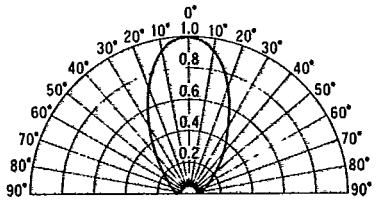




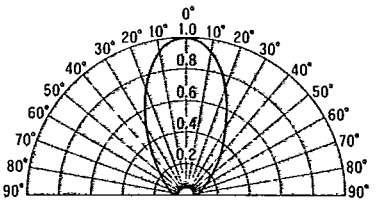
FORWARD VOLTAGE vs. AMBIENT TEMPERATURE

■SPATIAL DISTRIBUTION

SPY



SAY



■ORANGE

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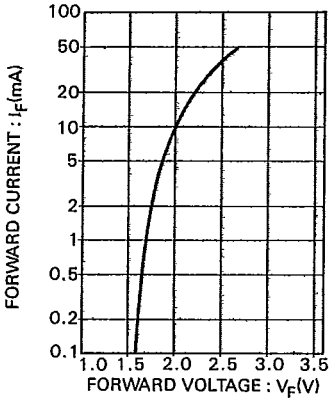
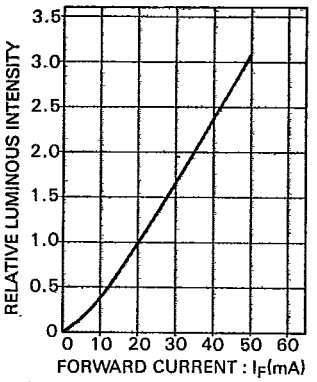
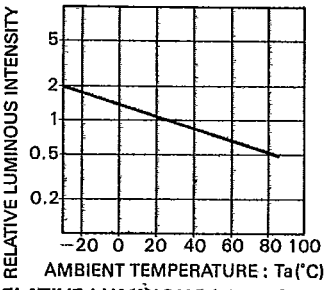


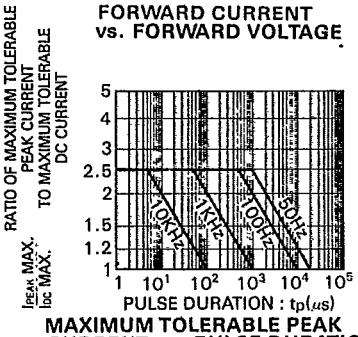
FORWARD CURRENT vs. FORWARD VOLTAGE



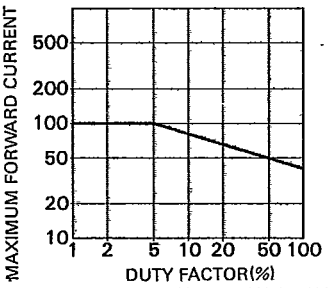
RELATIVE LUMINOUS INTENSITY vs. FORWARD CURRENT



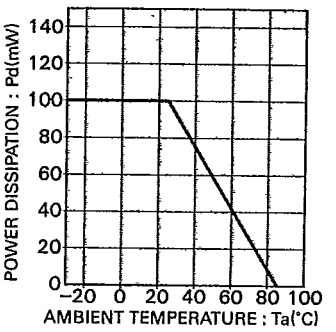
RELATIVE LUMINOUS INTENSITY vs. AMBIENT TEMPERATURE



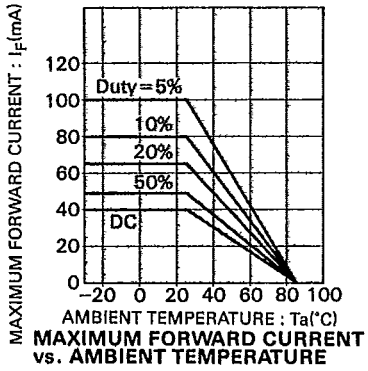
MAXIMUM TOLERABLE PEAK CURRENT vs. PULSE DURATION



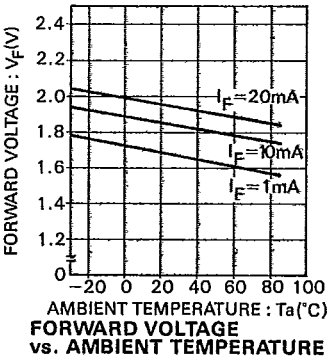
MAXIMUM FORWARD CURRENT vs. DUTY FACTOR



POWER DISSIPATION vs. AMBIENT TEMPERATURE

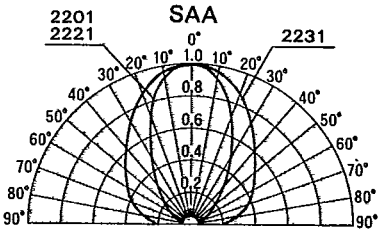


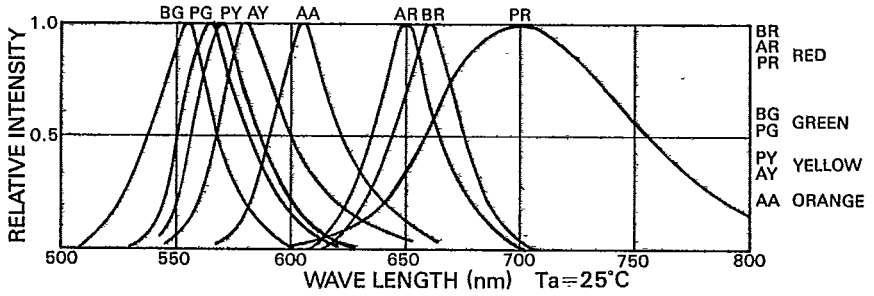
MAXIMUM FORWARD CURRENT vs. AMBIENT TEMPERATURE



FORWARD VOLTAGE vs. AMBIENT TEMPERATURE

■ SPATIAL DISTRIBUTION





RELATIVE INTENSITY vs. WAVE LENGTH

LED LAMP