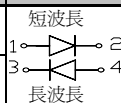
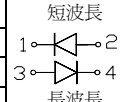
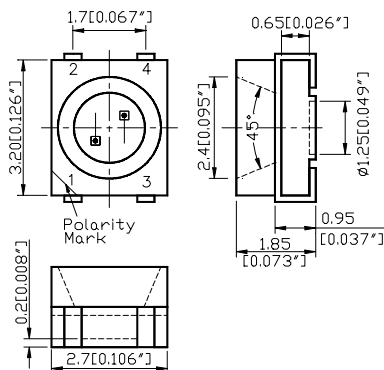


**◎ REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDS**
**反射蓋灌注型高效率發光二極體**

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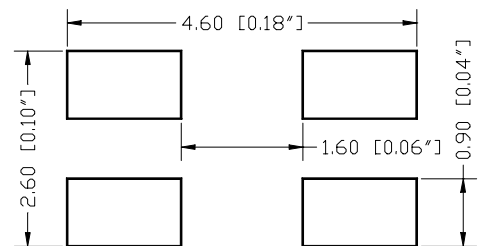
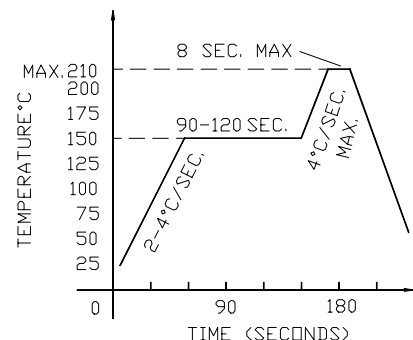
GH-2030 Multi-Color Series Electro-Optical Characteristics:									
Code for parts GH-XXXXX	Lighting Color	Material	V <sub>F</sub> (V)		λ (nm)			I <sub>V</sub> (mcd)	Internal Circuit
			Typ	Max	λ <sub>D</sub>	λ <sub>P</sub>	Δλ	Typ	
MBA330TZ-WSE	Red	GaAlAs	1.80	2.30	643	660	25	22	
	Green	GaP	2.10	2.50	572	565	32	15	
MBB930TZ-WPG	Red	AlGaInP	1.90	2.40	631	640	23	60	
	Green	AlGaInP	2.10	2.60	578	575	18	43	
MBAT30TZ-WPE	Orange	GaAsP	2.00	2.50	622	635	44	12	
	Green	GaP	2.20	2.70	570	565	30	18	
MBB230TZ-WPE	Amber	GaAsP	2.00	2.50	603	610	40	13	
	Green	GaP	2.20	2.70	570	565	30	18	
MBB430TZ-WPE	Red	GaAlAs	1.80	2.30	643	660	24	23	
	Green	GaP	2.25	2.70	566	560	29	13	
MBA230TZ-WPE	Red	GaAlAs	1.80	2.30	643	660	24	23	
	Green	GaP	2.20	2.60	572	565	31	17	
MBBH30TZ-WPH	Green	InGaN	3.20	3.60	527	525	40	138	
	Blue	GaN	3.40	4.00	468	460	36	60	


**◎ Package Outline Drawing:**


- NOTES:**
- All dimensions are in millimeters (inches);
  - Tolerances are ±0.2mm (0.008inch) unless otherwise noted;
  - Resin color: water clear.

**\* Soldering iron**

Basic spec is ≤ 5sec when 260°C. If temperature is higher, time should be shorter (+10°C → -1sec). Power dissipation of iron should be smaller than 15W, and temperatures should be controllable. Surface temperature of the device should be under 230°C.

**\* Recommended Soldering Pattern For Reflow Soldering**

**\* Recommended Reflow Soldering Profile.**

**◎ Absolute Maximum Ratings:**

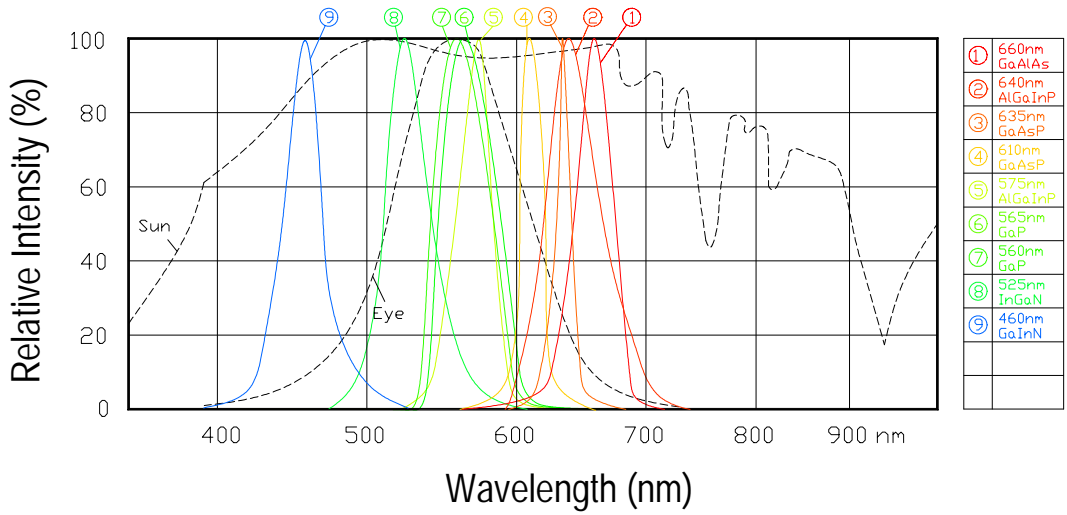
Series	I <sub>F</sub> (mA)	*I <sub>FP</sub> (mA)	V <sub>R</sub> (V)	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)
GH-2030 Multi-Color Series	30	120	5	-20~+80	-20~+100

\*Condition for I<sub>FP</sub> is pulse of 1/10 duty and 0.1msec width

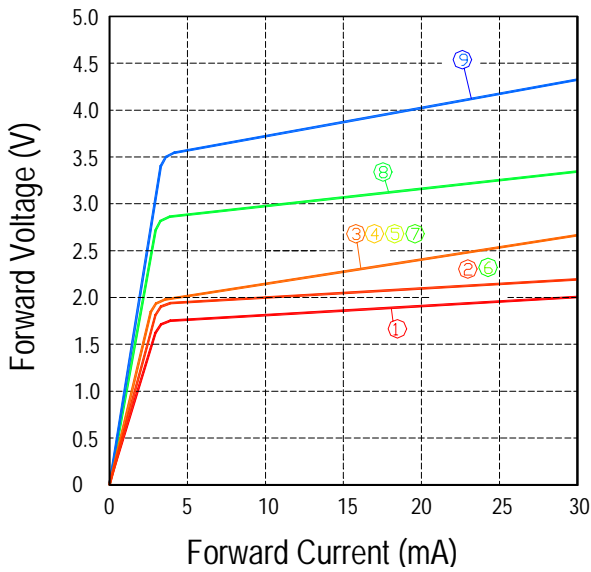
## \*Optical Characteristic Curves Of GH-2030 Multi-Color Series

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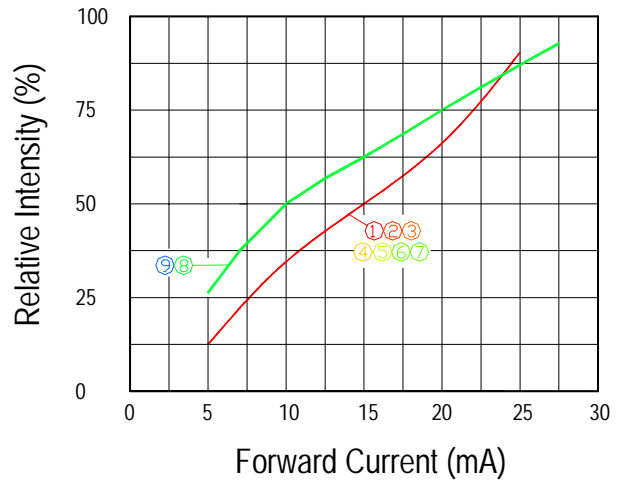
### Relative Intensity vs. Wavelength



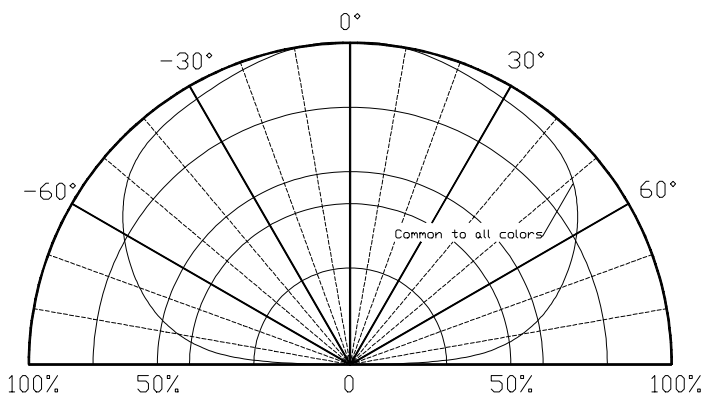
### Forward Voltage vs. Forward Current



### Relative Intensity vs. Forward Current

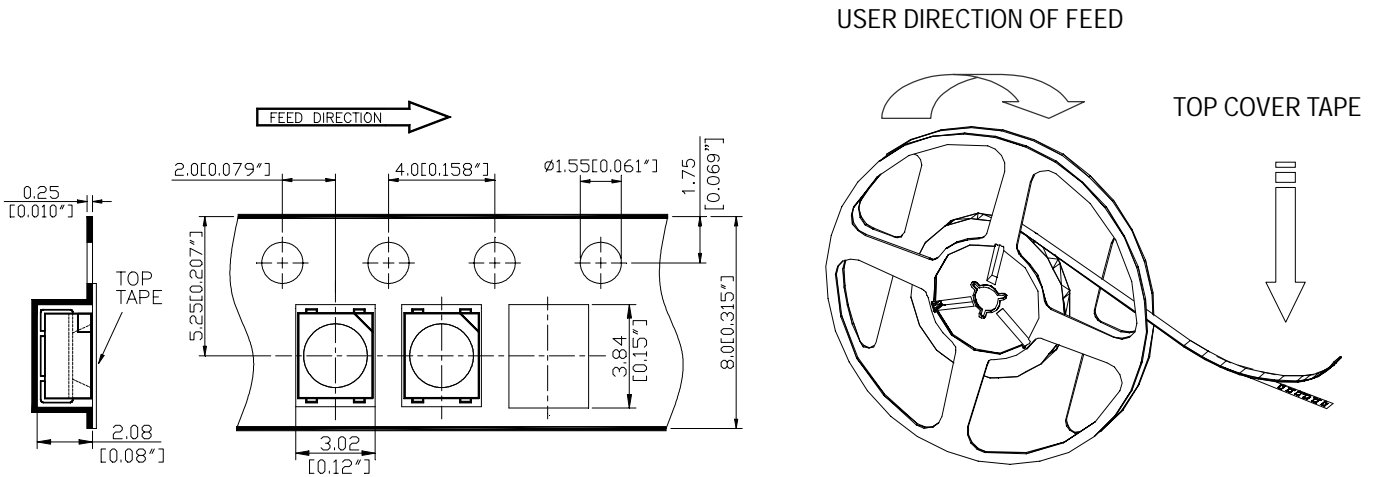


### Directive Characteristics

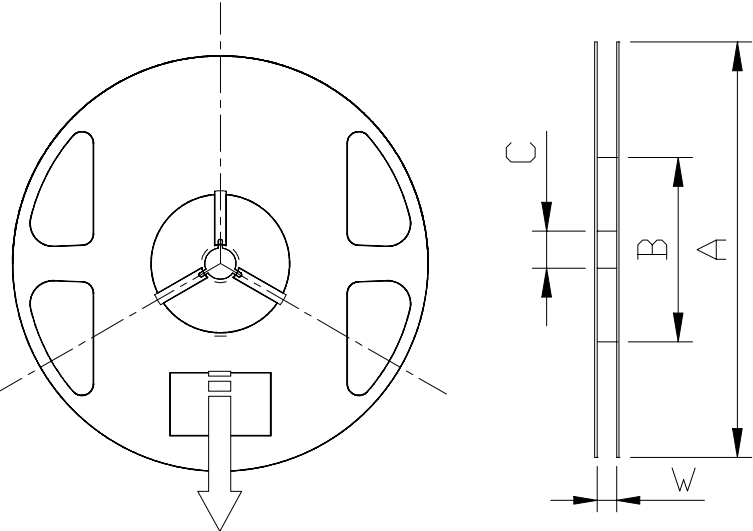



## \*Tape And Reel Of GH-2030 Multi-Color Series

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Dimensions per ANSI/EIA Standard RS-481 All dimensions are in Millimeters (inches).	
A	180[7.09]
B	60[2.36]
C	13.5[0.53]
W	8.4[0.33]
Thickness of top cover tape 0.1[0.004"] MAX	



 GRAND HALO ELECTRONIC LTD	
PART NO.	
LOT NO.	
QUANTITY	
DATE	
DATA	

### NOTES:

1. Empty component pockets are sealed with top cover tape;
2. Minimum leader length at both ends of the tape is 450 mm;
3. The maximum number of missing lamps is two;
4. 2000pcs/Reel