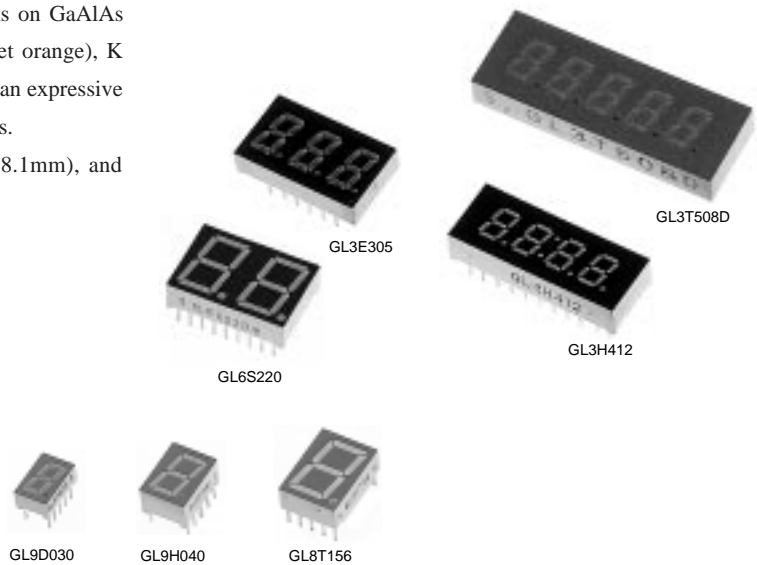


Numeric LED

General Description

Sharp can supply wide color line-up for numeric LEDs-GaAlAs on GaAlAs (double hetero) super-luminosity U series (red), S series (sunset orange), K series (green). In addition to them, dichromatic type has realized an expressive display, changing the emission color according to display contents.

Sharp can also supply various character height (7.62mm to 38.1mm), and various digits type (1digit to 5digits) for your applications.



Numbering system



① Type: internal connection

3	Multi-digits Dynamic drive circuit
6	Multi-digits Cathode common
7	Multi-digits Anode common
8	1-digit Cathode common
9	1-digit Anode common

② Radiation color

Series	Radiation color
P	Red
U	Red(Super-luminosity)
T	Red(High-luminosity)
D	Red
S	Sunset orange
H	Yellow
E	Yellow-green
K	Green
ED	Yellow-green+Red
ET	Yellow-green+Red(High-luminosity)

③ Character size

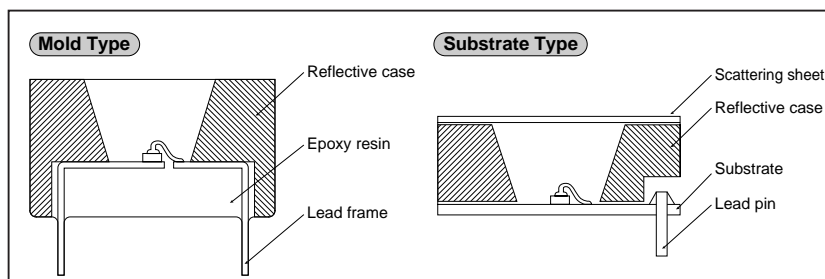
03,030	8.0mm
04,040	10.16mm
156	14.12mm
56	14.22mm
08	20.32mm
100	25.4mm
15	38.1mm

④ No. of digits

2	2-digits
3	3-digits
4	4-digits
5	5-digits

Structure

Numeric LEDs are classified into 2 types ; substrate type and mold type as shown below. Substrate type employs thin package and can save the mount space. Mold type has realized high reliability because it is molded by resin.



Notice In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.
Internet Internet address for Electronic Components Group <http://www.sharp.co.jp/ecg/>

Surface Mount Type Numeric LED

■ General Description

Sharp's GL8D03M series, GL8D04M series, GL8D56M series are 1-digit, thin package surface mount type numeric LEDs. (character height: 8.0/10.16/14.22 mm). It is unnecessary to adjust the mounting height because the thickness of each series is the same. They are suited for measuring equipment and various thin type display systems.



GL9D04M

■ Model Line-up

Type	Character height (mm)	Radiation color Common	D	E	Outline Dimensions	
			Red	Yellow-green	Page	Figure
Mold type	8.0	Anode	GL9D03M	GL9E03M	180	1
		Cathode	GL8D03M	GL8E03M		
	10.16	Anode	GL9D04M	GL9E04M	180	2
		Cathode	GL8D04M	GL8E04M		
	14.22	Anode	GL9D56M	GL9E56M	180	3
		Cathode	GL8D56M	GL8E56M		

■ Absolute Maximum Ratings (Figures shown below are values per segment.)

(Ta=25°C)

Model No.	Forward current I _F (mA)	Peak forward current*1 I _{FM} (mA)	Derating factor		Reverse voltage V _R (V)	Operating temperature T _{opr} (°C)	Storage temperature T _{stg} (°C)
			DC (mA/°C)	Pulse (mA/°C)			
GL9E03M/GL8E03M	Yellow-green	15	50	1.91	6.36	-30 to +70	-40 to +80
GL9D03M/GL8D03M	Red	20	50	2.54	6.36		
GL9E04M/GL8E04M	Yellow-green	15	50	1.91	6.36	-30 to +70	-40 to +80
GL9D04M/GL8D04M	Red	20	50	2.54	6.36		
GL9E56M/GL8E56M	Yellow-green	15	50	1.91	6.36	-30 to +70	-40 to +80
GL9D56M/GL8D56M	Red	20	50	2.54	6.36		

*1 Duty ratio=1/10, pulse width=0.1ms

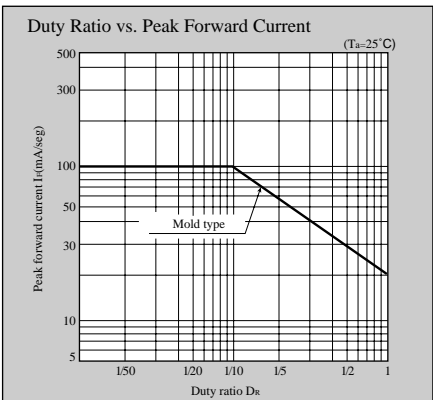
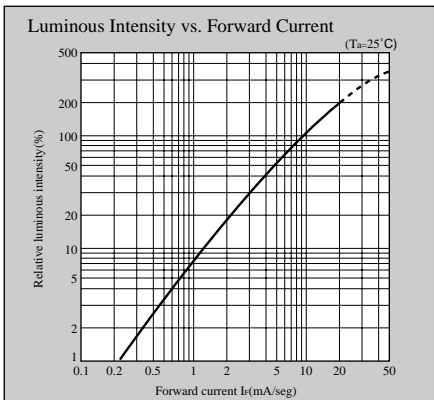
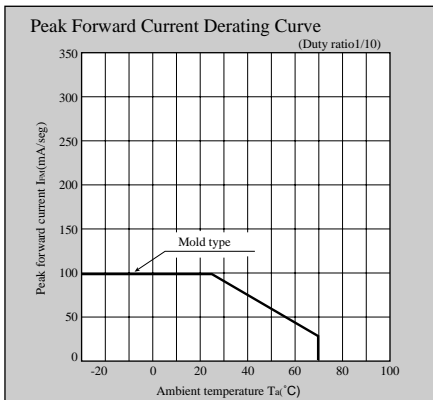
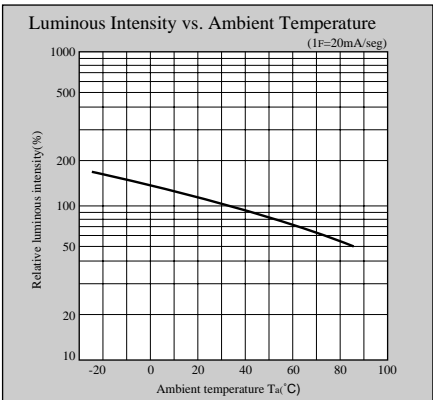
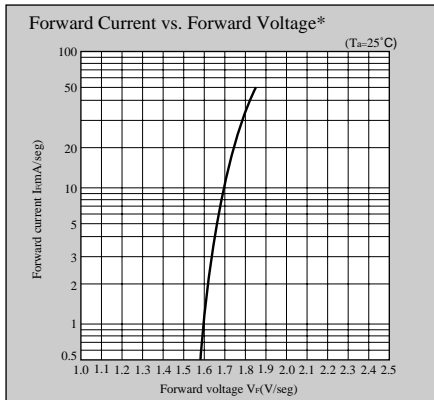
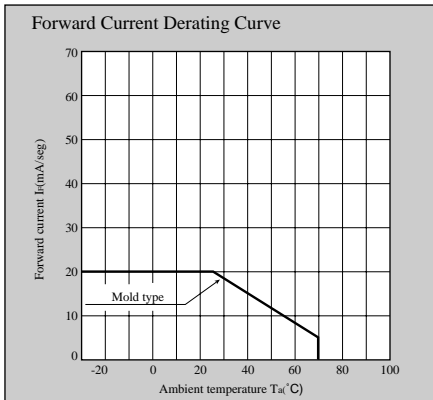
■ Electro-optical Characteristics (Figures shown below are values per segment.)

(Ta=25°C)

Model No.	Forward current V _F (V)	Luminous intensity I _v (mcd)	Peak emission wavelength λ _p (nm)	Spectrum radiation bandwidth		Reverse current			
				Δλ (nm)	I _F (mA)	I _R (μA)	V _R (V)		
								TYP.	MAX.
GL9E03M/GL8E03M	Yellow-green	2.0	2.5	2.5	565	30	10	10	4
GL9D03M/GL8D03M	Red	1.85	2.3	2.3	635	35	10	10	4
GL9E04M/GL8E04M	Yellow-green	2.0	2.5	3.0	565	30	10	10	4
GL9D04M/GL8D04M	Red	1.85	2.3	3.0	635	35	10	10	4
GL9E56M/GL8E56M	Yellow-green	2.0	2.5	4.0	565	30	10	10	4
GL9D56M/GL8D56M	Red	1.85	2.3	4.0	635	35	10	10	4

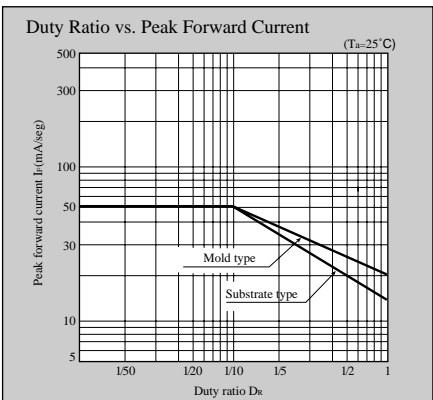
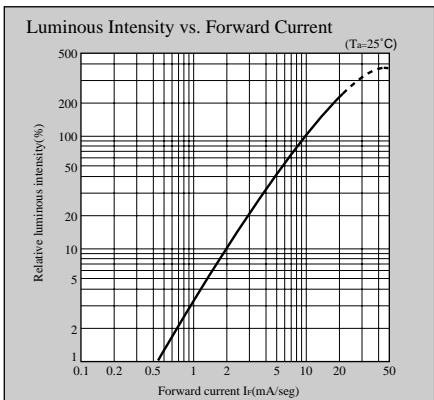
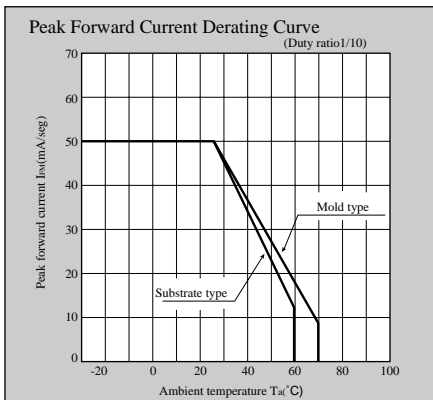
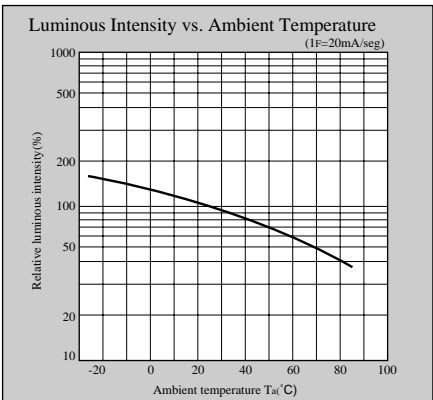
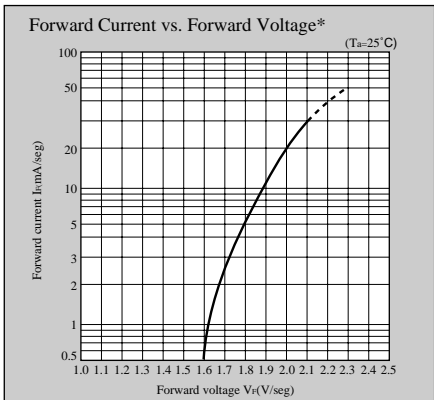
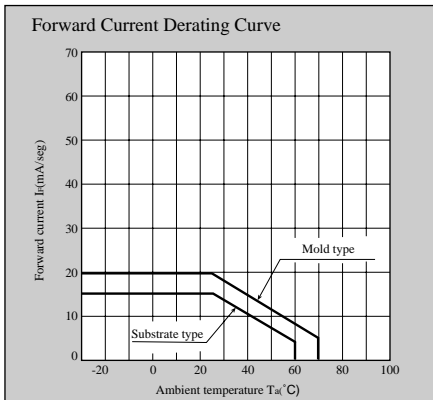
Numeric LED Characteristics Diagrams

T series



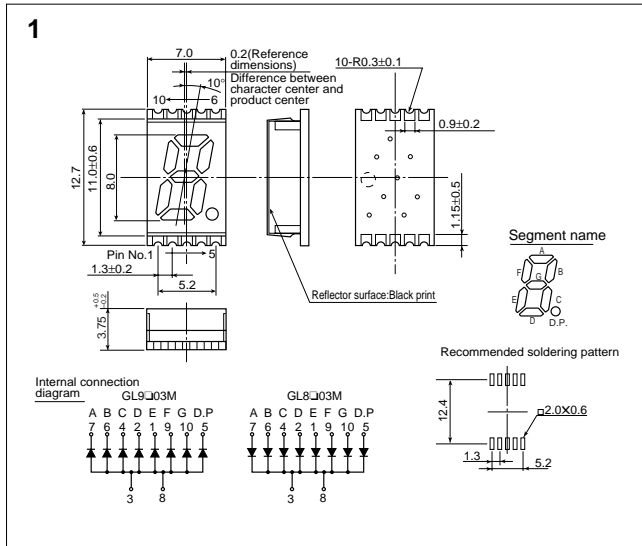
* In case of 25.4mm: value per 1segment 1chip

D series

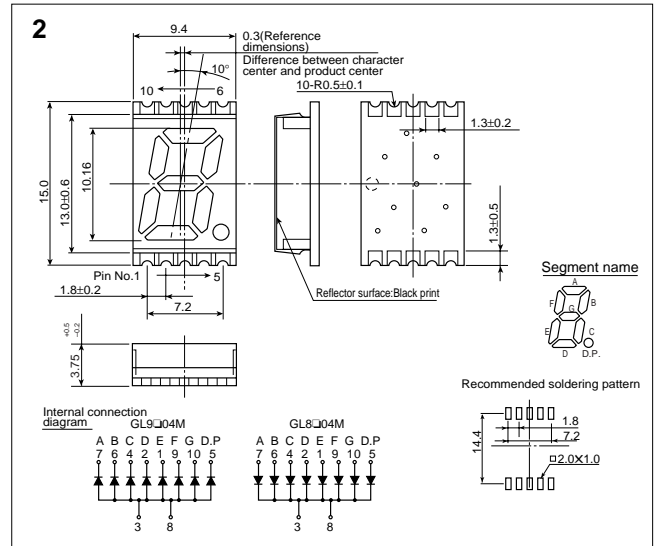


* In case of 25.4mm: value per 1segment 1chip

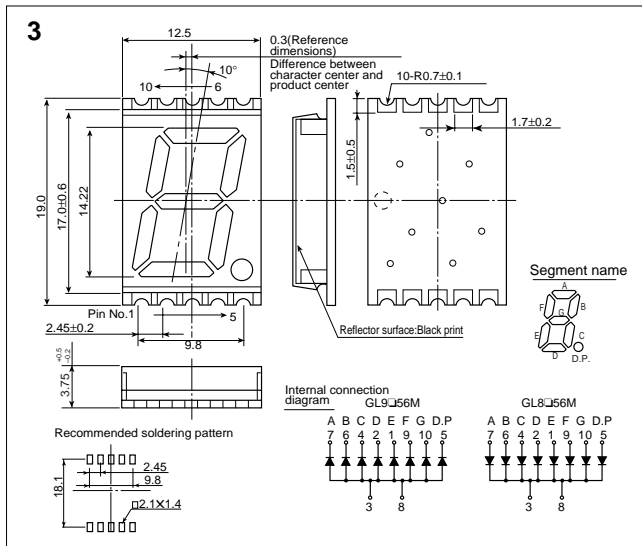
Numeric LED Outline Dimensions(Unit:mm)



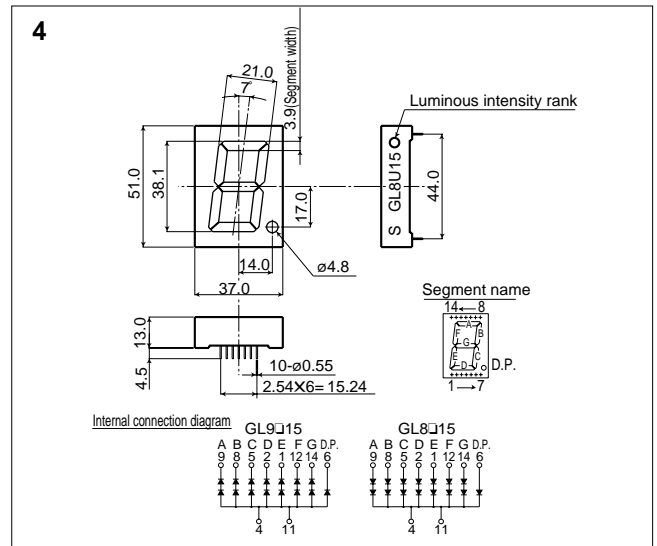
GL9□03M Series GL8□03M Series



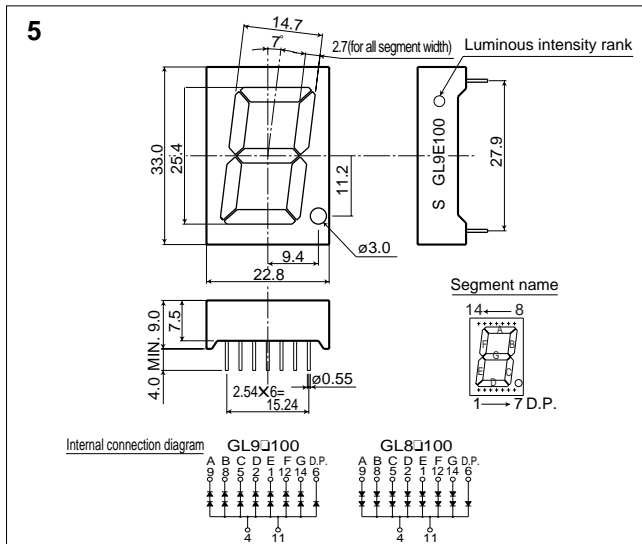
GL9□04M Series GL8□04M Series



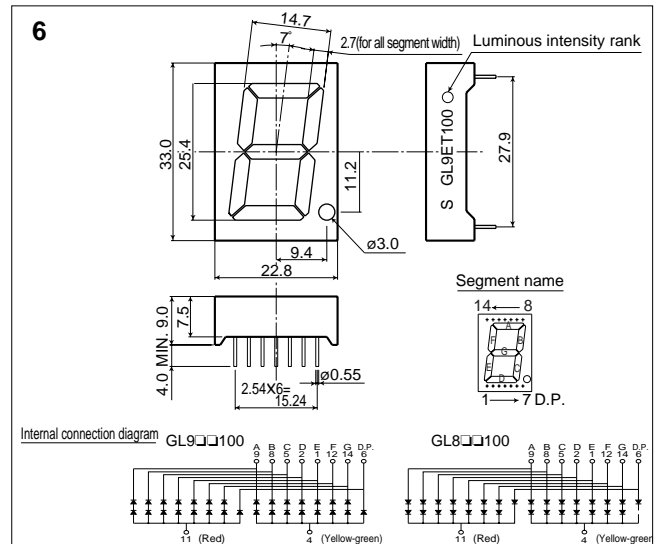
GL9□56M Series GL8□56M Series



GL9□15 Series GL8□15 Series



GL9□100 Series GL8□100 Series



GL9□100 Series GL8□100 Series