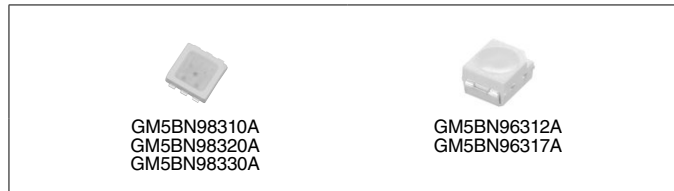


## High-Luminosity White Surface Mount LEDs

(T<sub>c</sub> = 25°C)

Outline dimensions (mm)	Model No.	Color coordinates (x, y) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Luminous intensity (mcd) TYP.
3.2 × 3.1 (t = 0.65)	★GM5BN98310A <sup>*1</sup>	(0.29, 0.28)	3.05	20	2 300
	★GM5BN98320A <sup>*1</sup>		3.05	40	4 500
	★GM5BN98330A <sup>*1</sup>		2.95	45	5 000
3.2 × 2.8 (t = 1.9)	★GM5BN96312A	(0.31, 0.31)	(3.05)	(20)	(2 500)
	★GM5BN96317A	(0.29, 0.28)	(3.05)	(20)	(2 300)

<sup>\*1</sup> Protection elements are embedded in each chips of GM5BN98310A, GM5BN98320A and GM5BN98330A.



## High Luminosity Surface Mount LEDs (RGB 3-Color)

(T<sub>c</sub> = 25°C)

Outline dimensions (mm)	Model No.	Radiation color	Forward voltage (V) TYP.	Forward current (mA) TYP.	Luminous intensity	
					(mcd) TYP.	I <sub>F</sub> (mA)
3.2 × 3.1 (t = 0.65)	GM5WA98330A▲ <sup>*1</sup> ☆GM5WA98332A <sup>*2</sup>	Red	2.2	20	2 300 <sup>*3</sup>	20
		Green	3.2	20		20
		Blue	3.2	20		10
	☆GM5WA98336A <sup>*2</sup>	Red	2.2	20	700	20
		Green	3.2	20	1 500	20
		Blue	3.2	20	600	20

<sup>\*1</sup> Protection elements are embedded in the green and blue chips of GM5WA98330A.

<sup>\*2</sup> Protection elements are embedded in the red, green and blue chips of GM5WA98332A/GM5WA98336A.

<sup>\*3</sup> Mixed color luminous intensity values [Red (I<sub>F</sub> = 20 mA), Green (I<sub>F</sub> = 20 mA), Blue (I<sub>F</sub> = 10 mA)] are measured when simultaneously lit. The model marked with ▲ may not be available in the near future. Contact with SHARP for details before use.



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**■ Pico ZENIGATA LEDs** (ZENIGATA is a registered trademark or a trademark of Sharp Corporation in Japan, the United States and/or other countries.)

**<0.2W class>**
(T<sub>c</sub> = 25°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
2.8 × 2.8 (t = 1.9)	GM2BB27QT1C	2 700	3.0	50	16.8	83
	GM2BB30QT1C	3 000			17.0	
	GM2BB35QT1C	3 500			17.8	
	GM2BB40QT1C	4 000			18.5	
	GM2BB45QT1C	4 500			18.3	
	GM2BB50QT1C	5 000			19.5	
	GM2BB57QT1C	5 700			19.5	
	GM2BB65QT1C	6 500			18.5	
	GM2BB50GT1C	5 000			22.5	
	GM2BB57GT1C	5 700			22.5	
	GM2BB65GT1C	6 500			21.5	

**<0.3W class>**
(T<sub>c</sub> = 25°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
2.8 × 2.8 (t = 1.9)	GM2BB27QB2C	2 700	3.0	100	31.0	83
	GM2BB30QB2C	3 000			32.0	
	GM2BB35QB2C	3 500			33.0	
	GM2BB40QB2C	4 000			35.0	
	GM2BB45QB2C	4 500			36.0	
	GM2BB50QB2C	5 000			37.0	
	GM2BB57QB2C	5 700			37.0	
	GM2BB65QB2C	6 500			35.0	

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**<0.6W class>**

(Tc = 25°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
2.8 × 2.8 (t = 1.9)	GM2BB27QT4C	2 700	5.9	100	58.0	83
	GM2BB30QT4C	3 000			61.0	
	GM2BB35QT4C	3 500			64.0	
	GM2BB40QT4C	4 000			66.5	
	GM2BB45QT4C	4 500			68.0	
	GM2BB50QT4C	5 000			70.0	
	GM2BB57QT4C	5 700			70.0	
	GM2BB65QT4C	6 500			66.5	
	GM2BB50GT4C	5 000			78.0	
	GM2BB57GT4C	5 700			78.0	
	GM2BB65GT4C	6 500	78.0			
	GM2BB27QT4E	2 700	11.8	50	58.0	83
	GM2BB30QT4E	3 000			61.0	
	GM2BB35QT4E	3 500			64.0	
	GM2BB40QT4E	4 000			66.5	
	GM2BB45QT4E	4 500			68.0	
	GM2BB50QT4E	5 000			70.0	
	GM2BB57QT4E	5 700			70.0	
	GM2BB65QT4E	6 500			66.5	
	GM2BB50GT4E	5 000			78.0	
GM2BB57GT4E	5 700	78.0				
GM2BB65GT4E	6 500	73.0				



**Pico ZENIGATA LEDs**  
0.2 to 0.6W class

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### <6W class>

(T<sub>J</sub> = 90°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
15.0 × 12.0 (t = 1.8)	<a href="#">GW6BMG27HED</a>	2 700	34.8	160	580	82
	<a href="#">GW6BMG30HED</a>	3 000			610	
	<a href="#">GW6BMG40HED</a>	4 000			660	
	<a href="#">GW6BMG50HED</a>	5 000			670	
	<a href="#">GW6BMG60HED</a>	6 000			670	93
	<a href="#">GW6BGG27HED</a>	2 700			465	
	<a href="#">GW6BGG30HED</a>	3 000			490	
	<a href="#">GW6BGG40HED</a>	4 000			505	
<a href="#">GW6BGG50HED</a>	5 000	525	90			

### <8W class>

(T<sub>J</sub> = 90°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
15.0 × 12.0 (t = 1.8)	<a href="#">GW6BMW27HED</a>	2 700	34.8	240	825	82
	<a href="#">GW6BMW30HED</a>	3 000			870	
	<a href="#">GW6BMW40HED</a>	4 000			935	
	<a href="#">GW6BMW50HED</a>	5 000			960	
	<a href="#">GW6BMW60HED</a>	6 000			960	93
	<a href="#">GW6BGW27HED</a>	2 700			685	
	<a href="#">GW6BGW30HED</a>	3 000			720	
	<a href="#">GW6BGW40HED</a>	4 000			750	
	<a href="#">GW6BGW50HED</a>	5 000			770	

### <11W class>

(T<sub>J</sub> = 90°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
15.0 × 12.0 (t = 1.8)	<a href="#">GW6BMR27HED</a>	2 700	34.8	320	1 075	82
	<a href="#">GW6BMR30HED</a>	3 000			1 140	
	<a href="#">GW6BMR40HED</a>	4 000			1 230	
	<a href="#">GW6BMR50HED</a>	5 000			1 250	
	<a href="#">GW6BMR60HED</a>	6 000			1 250	93
	<a href="#">GW6BGR27HED</a>	2 700			885	
	<a href="#">GW6BGR30HED</a>	3 000			930	
	<a href="#">GW6BGR40HED</a>	4 000			965	
	<a href="#">GW6BGR50HED</a>	5 000			965	



Mini ZENIGATA LEDs

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### <15W class>

(T<sub>j</sub> = 90°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
15.0 × 12.0 (t = 1.8)	GW6BMS27HED	2 700	34.8	400	1 315	82
	GW6BMS30HED	3 000			1 395	
	GW6BMS40HED	4 000			1 495	
	GW6BMS50HED	5 000			1 530	
	GW6BMS60HED	6 000			1 530	
	GW6BGS27HED	2 700			1 095	
	GW6BGS30HED	3 000			1 160	
	GW6BGS40HED	4 000			1 205	
	GW6BGS50HED	5 000				



### <Natural toning type>

(T<sub>j</sub> = 25°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
15.0 × 12.0 (t = 1.6)	☆GW6NGWJCS0C	2 000	31	50	105	94
		3 000	36.5	350	1 000	92



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### <15W class>

(T<sub>j</sub> = 90°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
24.0 × 20.0 (t = 1.8)	GW6DMA27XFC	2 700	35.5	400	1 410	82
	GW6DMA30XFC	3 000			1 500	
	GW6DMA40XFC	4 000			1 600	
	GW6DMA50XFC	5 000			1 610	

### <25W class>

(T<sub>j</sub> = 90°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
24.0 × 20.0 (t = 1.8)	GW6DMC27XFC	2 700	35	700	2 750	82
	GW6DMC30XFC	3 000			2 900	
	GW6DMC40XFC	4 000			3 100	
	GW6DMC50XFC	5 000			3 110	
	GW6DGC27XFC	2 700			2 290	93
	GW6DGC30XFC	3 000			2 410	
	GW6DGC40XFC	4 000			2 530	
	GW6DGC50XFC	5 000			2 570	

### <35W class>

(T<sub>j</sub> = 90°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
24.0 × 20.0 (t = 1.8)	GW6DMD27XFC	2 700	35	950	3 590	82
	GW6DMD30XFC	3 000			3 800	
	GW6DMD40XFC	4 000			4 060	
	GW6DMD50XFC	5 000			4 080	
	GW6DGD27XFC	2 700			3 030	93
	GW6DGD30XFC	3 000			3 200	
	GW6DGD40XFC	4 000			3 350	
	GW6DGD50XFC	5 000			3 400	



Mega ZENIGATA LEDs

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**<50W class>**

(T<sub>j</sub> = 90°C)

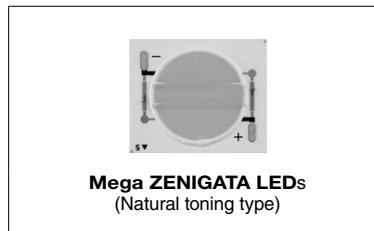
Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
24.0 × 20.0 (t = 1.8)	GW6DME27XFC	2 700	46.7	950	4 540	82
	GW6DME30XFC	3 000			4 800	
	GW6DME40XFC	4 000			5 130	
	GW6DME50XFC	5 000			5 150	
	GW6DGE27XFC	2 700			3 740	93
	GW6DGE30XFC	3 000			4 180	92
	GW6DGE40XFC	4 000			4 380	
	GW6DGE50XFC	5 000			4 430	



**<Natural toning type>**

(T<sub>j</sub> = 25°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
24.0 × 20.0 (t = 1.6)	☆GW6TGBJC50C	2 000	30.4	80	155	94
		3 000	35.8	950	2 860	92



☆ New product  
★ Under development



## ■ Giga ZENIGATA LEDs (ZENIGATA is a registered trademark or a trademark of Sharp Corporation in Japan, the United States and/or other countries.)

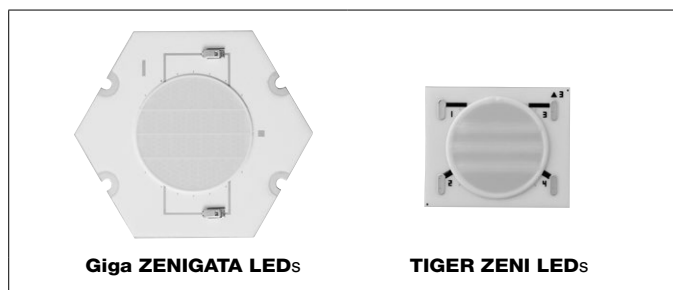
(T<sub>j</sub> = 25°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
75.0 × 65.0 (t = 3.9)	GW7GAP50FGC	5 000	140	700	13 000	70
	GW7GMP30FGC	3 000			10 710	
	GW7GMP40FGC	4 000			11 595	
	GW7GMP50FGC	5 000			11 800	

## ■ TIGER ZENI LEDs

(T<sub>j</sub> = 25°C)

Outline dimensions (mm)	Model No.	Color temperature (K) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Average color rendering index Ra TYP.
24.0 × 20.0 (t = 1.8)	GW6TGCBG40C	2 700	37	700	1 840	96
		5 700	38		2 170	90



## ■ LEDs for Medium- and Small-sized LCD Backlights (High Color Reproduction Models)

(T<sub>c</sub> = 25°C)

Outline dimensions (mm)	Model No.	Color coordinates (x, y) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Color reproduction
3.0 × 0.84 (t = 0.42)	★GM4BN4B5S0A	0.280, 0.270	2.9	20	7.3	sRGB=120% (CIE1976)**1
3.8 × 1.0 (t = 0.6)	☆GM4BN6D5S0A	0.280, 0.270	2.9	20	8.4	

\*1 Evaluated using a general LCD panel. Values may differ depending on specific LCD panel characteristics.



## ■ LEDs for Large-sized LCD Backlights (High Color Reproduction Models)

(T<sub>c</sub> = 25°C)

Outline dimensions (mm)	Model No.	Color coordinates (x, y) TYP.	Forward voltage (V) TYP.	Forward current (mA) TYP.	Total luminous flux (lm) TYP.	Color reproduction
4.2 × 1.4 (t = 0.8)	GM5FV0AP10A	0.295, 0.275	3.0	80	24.3	sRGB=120% (CIE1976)**1
3.7 × 3.5 (t = 0.8)	GM5F22BH20A	0.251, 0.210	6.51	160	86	
7.0 × 2.0 (t = 0.85)	GM5FQ0BH20A	0.266, 0.224	6.11	130	76.5	

\*1 Evaluated using a general LCD panel. Values may differ depending on specific LCD panel characteristics.



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☆ New product  
★ Under development



## ■ Laser Diodes

### ◆ Model Configurations

#### • Laser diodes lineup for applications other than optical discs

Wavelength (nm)	Absolute maximum ratings (mW) <sup>*1</sup>		Oscillation transverse mode <sup>*2</sup>	Package				
	CW (Continuous wave)	Pulse		 ø5.6 mm Can type	 ø3.8 mm Can type	 ø3.3 mm Can type	 ø5.6 mm Eye-safe type	
638 band	185	–	SM	☆GH0631IA2G series	–	–	–	
	160	–	SM	–	★GH0631GA5G series	–	–	
642 band	155	–	SM	GH0641FA2G series	–	–	–	
650 band	200	–	SM	★GH0652AA2G series	–	–	–	
660 band	10	–	SM	–	–	GH06510F4A	–	
	100	250	SM	GH06P25A2C	–	–	–	
750 band	700	2 W	MM	★GH0752WA2G	–	–	–	
	700	–	MM	–	–	–	★GH4757A1TG	
785 band	15	–	SM	GH07815D2K	–	–	–	
	25	–	SM	GH07825D2K	–	–	–	
	155	280	SM	–	–	GH07P28F4C	–	
	2ch	15	–	SM	GH3S215D2B	–	–	–
		25	–	SM	GH3S225D2B	–	–	–
830 band	60	–	SM	GH08360A2A	–	–	–	
	210	–	SM	GH0832BA2C	–	★GH0832BA4C	–	
	700	2 W	MM	★GH0832WA2G	–	–	–	
	700	–	MM	–	–	–	★GH4837A1TG	
850 band	700	2 W	MM	★GH0852WA2G	–	–	–	
	700	–	MM	–	–	–	★GH4857A1TG	
940 band	285	–	MM	★GH0942IA2C	–	–	–	
	500	2 W	MM	★GH0942WA2G	–	–	–	
	500	–	MM	–	–	–	★GH4945A1TG	

\*1 The absolute maximum ratings are the limits that are not to be exceeded under any condition whatsoever, whether in testing or in actual use.




\*2 SM: Single Mode  
MM: Multi Mode

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• Laser diodes lineup for optical disc use\*2

Wavelength (nm)		Absolute maximum ratings (mW)*1		Package		
				 1.8 mm t Frame type	 4.8 mm t Can type	 4.8 mm t Frame type
Dual-wavelength	660 band	90	320	GH33235A8C	–	–
	785 band	160	350		–	–
	660 band	6.3	–	–	GH90505 series	–
	785 band	5.7	–	–		–
785 band		4.3	–	–	–	GH6CD05 series

\*1 The absolute maximum ratings are the limits that are not to be exceeded under any condition whatsoever, whether in testing or in actual use.

\*2 New models for optical disc use are introduced frequently, and it is possible the model you wish to order may no longer be in production. Sample sales may not be available, either. We ask for your understanding in this matter.

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## ◆ Specifications

### • Laser diodes lineup for applications other than optical discs

(T<sub>c</sub> = 25°C)

Model No.	Wave-length (nm)	Absolute maximum ratings*1 (mW)		Features	Applications	Built-in monitor PD	Terminal connections
		CW (Continuous wave)	Pulse				
☆GH0631IA2G series	638 band	185	–	ø5.6 mm CAN package, operating temperature: 65°C MAX.†	Display, etc.	No	9
★GH0631GA5G series		160	–	ø3.8 mm CAN package, operating temperature: 60°C MAX.		No	8
GH0641FA2G series	642 band	155	–	ø5.6 mm CAN package, operating temperature: 40°C MAX.	Display, etc.	No	8
★GH0652AA2G series	650 band	200	–	ø5.6 mm CAN package, operating temperature: 85°C MAX.	Display, etc.	No	9
GH06510F4A	660 band	10	–	ø3.3 mm CAN package, operating temperature: 70°C MAX.	Bar code reader, laser displacement gauge, etc.	Yes	1
GH06P25A2C		100	250	ø5.6 mm CAN package, operating temperature: 70°C MAX.	Various types of sensors, etc.	No	3
★GH0752WA2G	750 band	700	2 W	ø5.6 mm CAN package	Various types of sensors, etc.	No	8
★GH4757A1TG		700	–	Eye-safe laser		No	8
GH07815D2K	785 band	15	–	ø5.6 mm CAN package, operating temperature: 60°C MAX.	Printer, copier, complex machine	Yes	4
GH07825D2K		25	–			Yes	4
GH07P28F4C		155	280	ø3.3 mm CAN package, operating temperature: 75°C MAX.	Various types of sensors, etc.	No	3
GH3S215D2B		15 (x 2 ch)	–	ø5.6 mm CAN package, operating temperature: 60°C MAX.	Printer, copier, complex machine	Yes	5
GH3S225D2B		25 (x 2 ch)	–			Yes	5
GH08360A2A		830 band	60	–	ø5.6 mm CAN package, operating temperature: 100°C MAX.	Various types of sensors, etc.	Yes
GH0832BA2C	210		No				3
★GH0832BA4C			ø3.3 mm CAN package, operating temperature: 80°C MAX.	No	3		
★GH0832WA2G			700	2 W	ø5.6 mm CAN package		No
★GH4837A1TG	700		–	Eye-safe laser	No		8
★GH0852WA2G	850 band	700	2 W	ø5.6 mm CAN package	Various types of sensors, etc.	No	8
★GH4857A1TG		700	–	Eye-safe laser		No	8
★GH0942IA2C	940 band	285	–	ø5.6 mm CAN package	Various types of sensors, etc.	No	3
★GH0942WA2G		500	2 W			No	8
★GH4945A1TG		500	–			Eye-safe laser	No

\*1 The absolute maximum ratings are the limits that are not to be exceeded under any condition whatsoever, whether in testing or in actual use.

#### Notice

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 Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.



## • Laser diodes lineup for optical disc use\*2

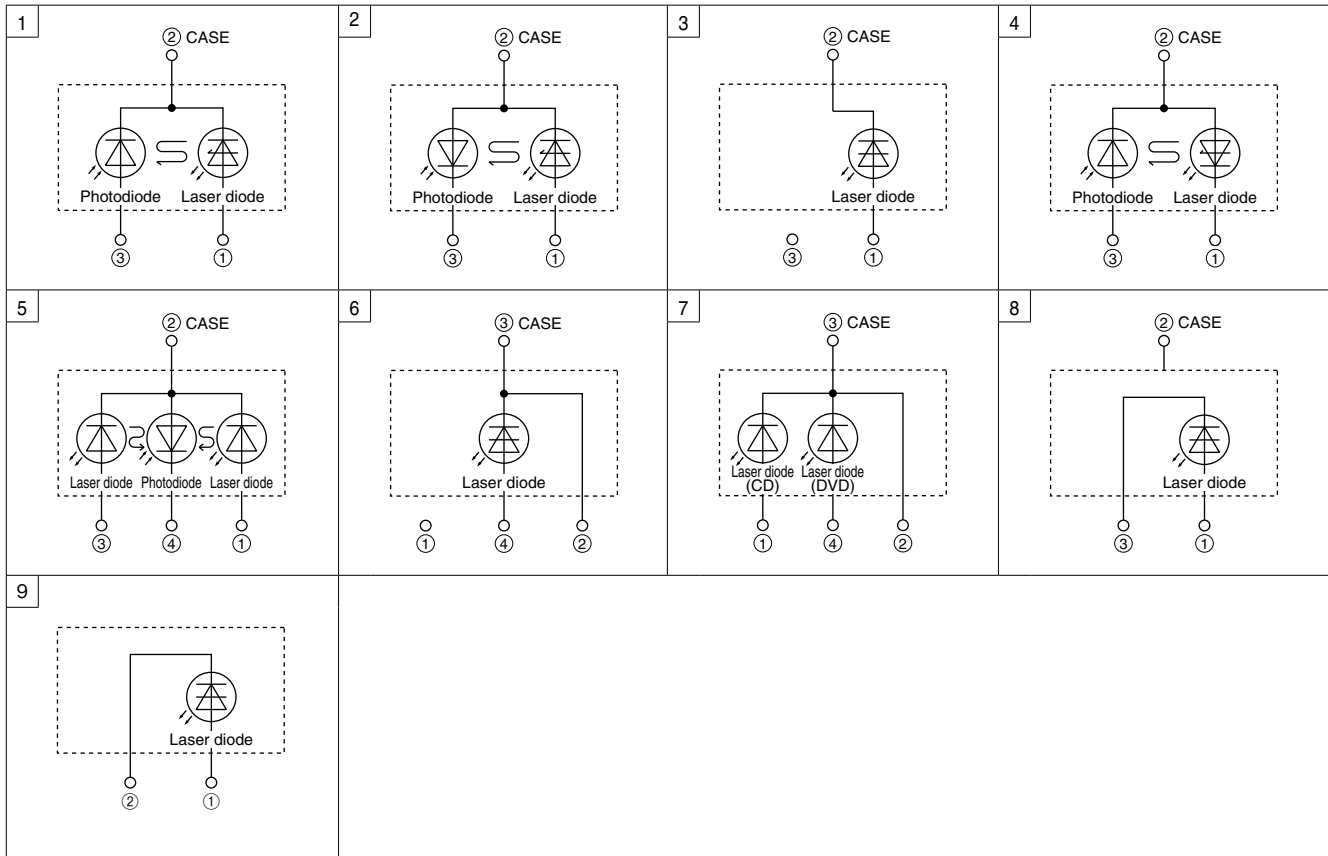
(Tc = 25°C)

Model No.	Wave-length (nm)	Absolute maximum ratings*1 (mW)		Features	Applications	Built-in monitor PD	Terminal connections
		CW (Continuous wave)	Pulse				
GH33235A8C	660 band	90	320	1.8 mm frame package, operating temperature: 85°C MAX. (pulse drive)	Double-layer DVD 8x to 16x recording	No	7
	785 band	160	350		CD-R/RW (MAX. 48x to 52x recording)		
GH90505 series	660 band	6.3	–	4.8 mm CAN package, operating temperature: 80°C MAX.	DVD players	Yes	–
	785 band	5.7	–		CD players		
GH6CD05 series	785 band	4.3	–	4.8 mm frame package, operating temperature: 80°C MAX.	CD players	Yes	–

\*1 The absolute maximum ratings are the limits that are not to be exceeded under any condition whatsoever, whether in testing or in actual use. For recommended optical power output, consult the specification sheet or data sheet for each model.

\*2 New models for optical disc use are introduced frequently, and it is possible the model you wish to order may no longer be in production. Sample sales may not be available, either. We ask for your understanding in this matter.

## • Terminal Connections



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