
HL7859MG

Visible High Power Laser Diode

HITACHI

ADE-208-229C (Z)
4th Edition
May 1, 1998

Description

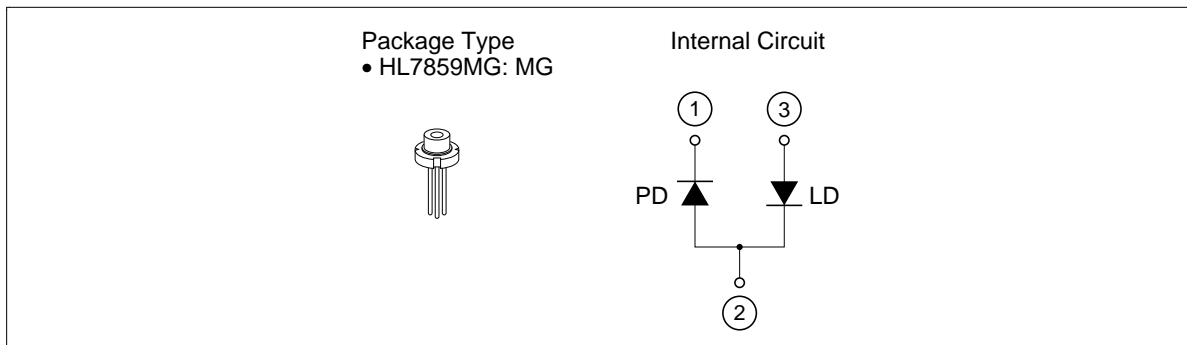
The HL7859MG is a 0.78 μm band GaAlAs laser diode with a multi-quantum well (MQW) structure. It is suitable as a light source for optical disc memories and various other types of optical equipment. Hermetic sealing of the small package (ϕ 5.6 mm) assures high reliability.

Application

- Optical disc memories

Features

- High output power : 35 mW (CW)
- Visible light output : $\lambda_p = 775$ to 795 nm
- Small package : ϕ 5.6 mm dia.
- Low astigmatism : 5 μm Typ ($P_o = 5$ mW)



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Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$)

Item	Symbol	Value	Unit
Optical output power	P_O	35	mW
Pulse optical output power	P_O (pulse)	42 *	mW
Laser diode reverse voltage	$V_{R(LD)}$	2	V
Photo diode reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	T_{opr}	-10 to +60	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

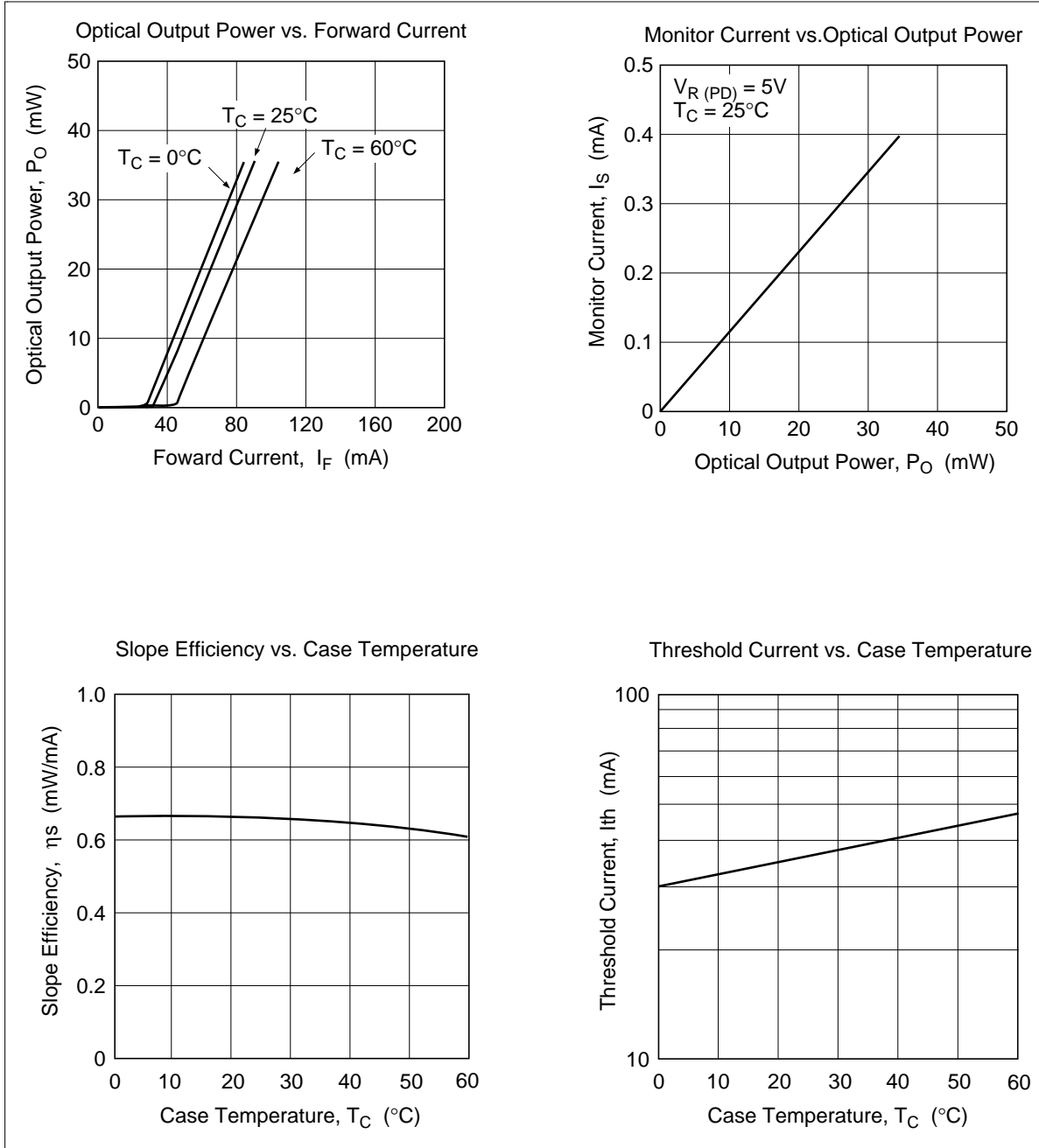
Note: Pulse condition : Pulse width = 1 μs , duty = 50%

Optical and Electrical Characteristics ($T_C = 25^\circ\text{C}$)

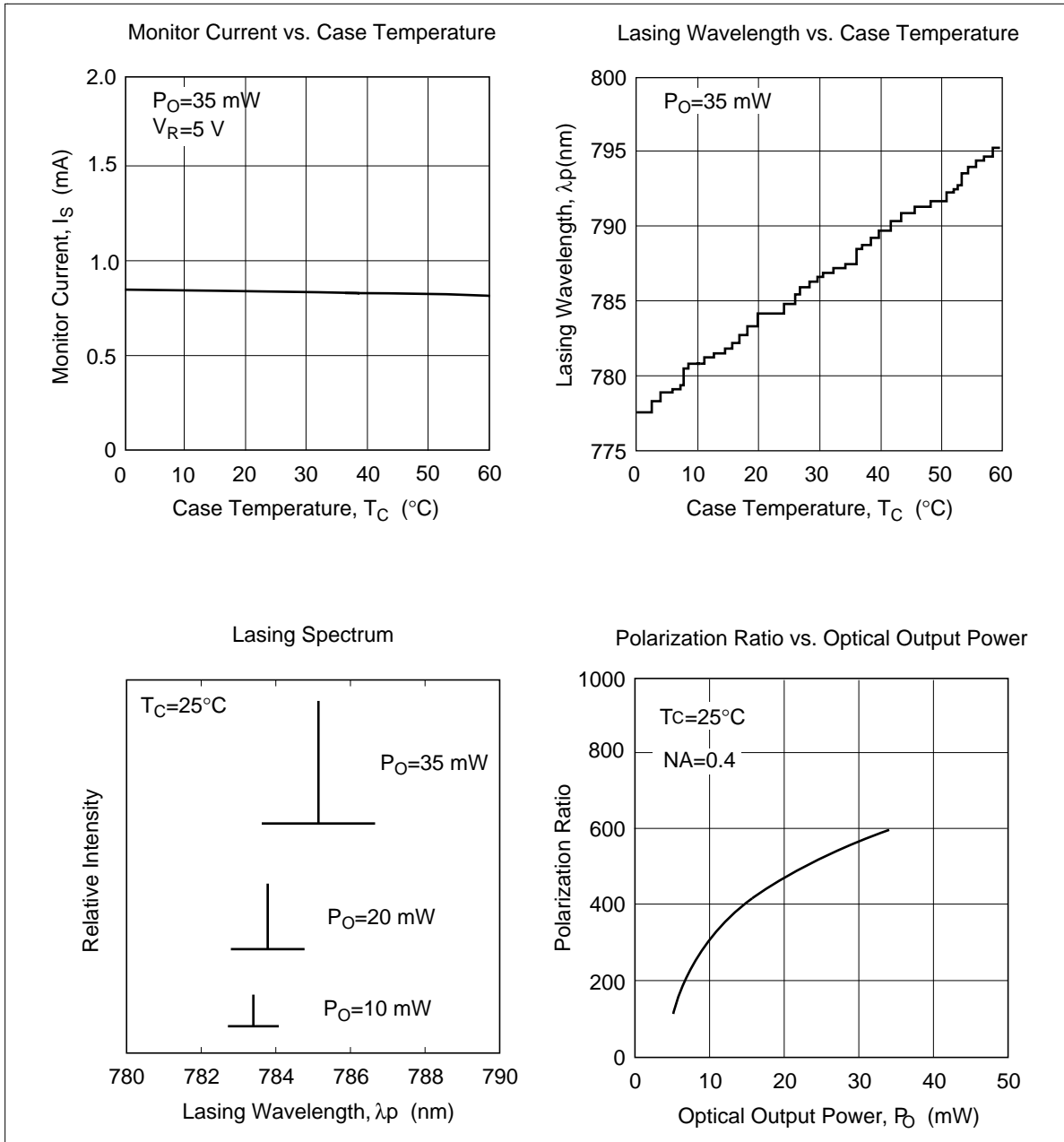
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P_O	35	—	—	mW	Kink free *
Threshold current	I_{th}	—	35	60	mA	—
Operating voltage	V_{OP}	—	2.1	2.5	V	$P_O = 35 \text{ mW}$
Slope efficiency	η_s	0.35	0.65	0.80	mW/mA	$21(\text{mW}) / (I_{(28\text{mW})} - I_{(7\text{mW})})$
Lasing wavelength	λ_p	775	785	795	nm	$P_O = 35 \text{ mW}$
Beam divergence parallel to the junction	$\theta_{//}$	8	9.5	12	deg.	$P_O = 35 \text{ mW}$
Beam divergence perpendicular to the junction	θ_{\perp}	18	23	28	deg.	$P_O = 35 \text{ mW}$
Monitor current	I_S	0.2	—	2	mA	$P_O = 35 \text{ mW}$, $V_{R(PD)} = 5 \text{ V}$
Asigmatism	A_S	—	5	—	μm	$P_O = 5 \text{ mW}$, $NA = 0.4$

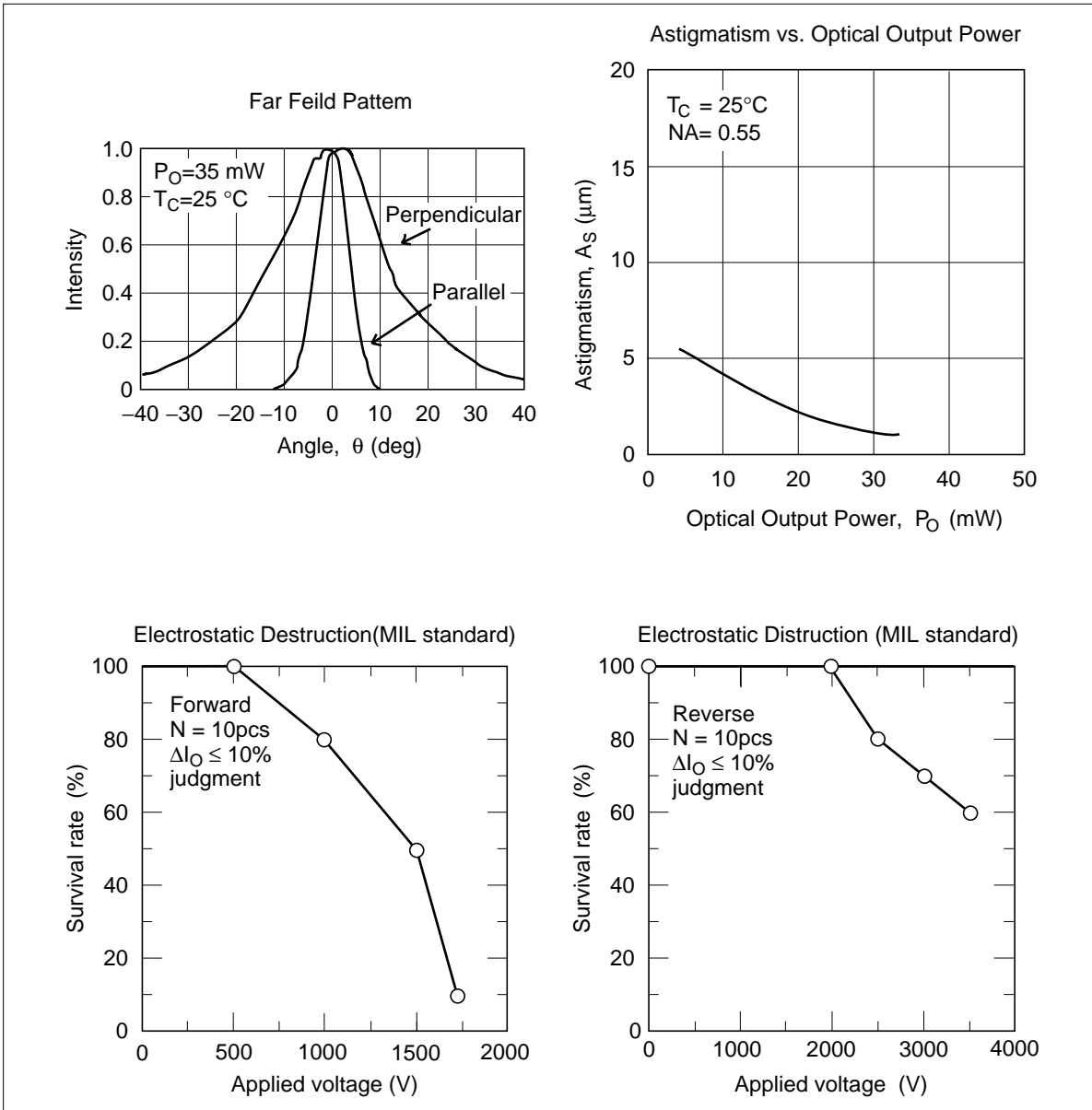
Note: Kink free is confirmed at the temperature of 25°C .

Curve Characteristics

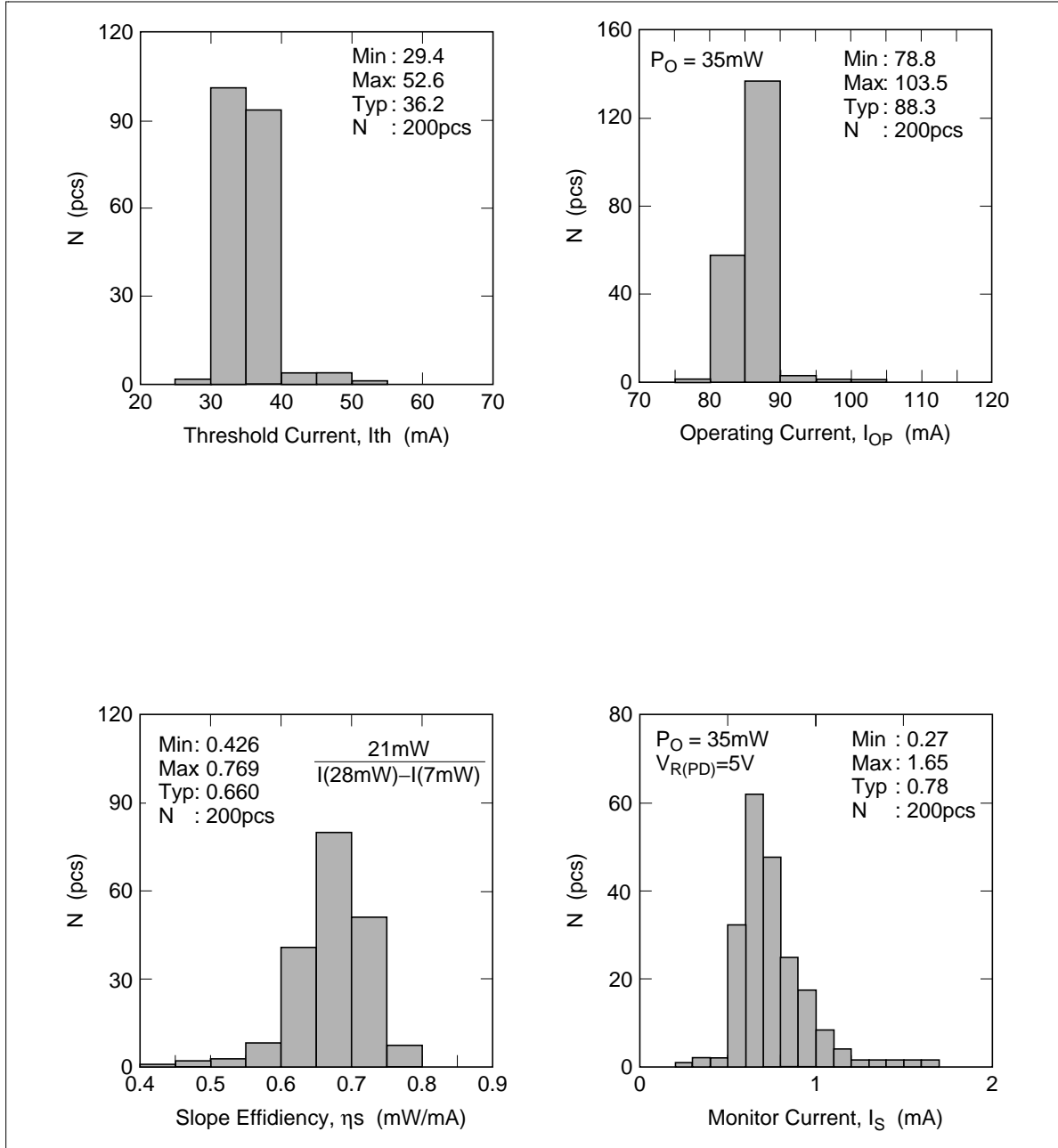


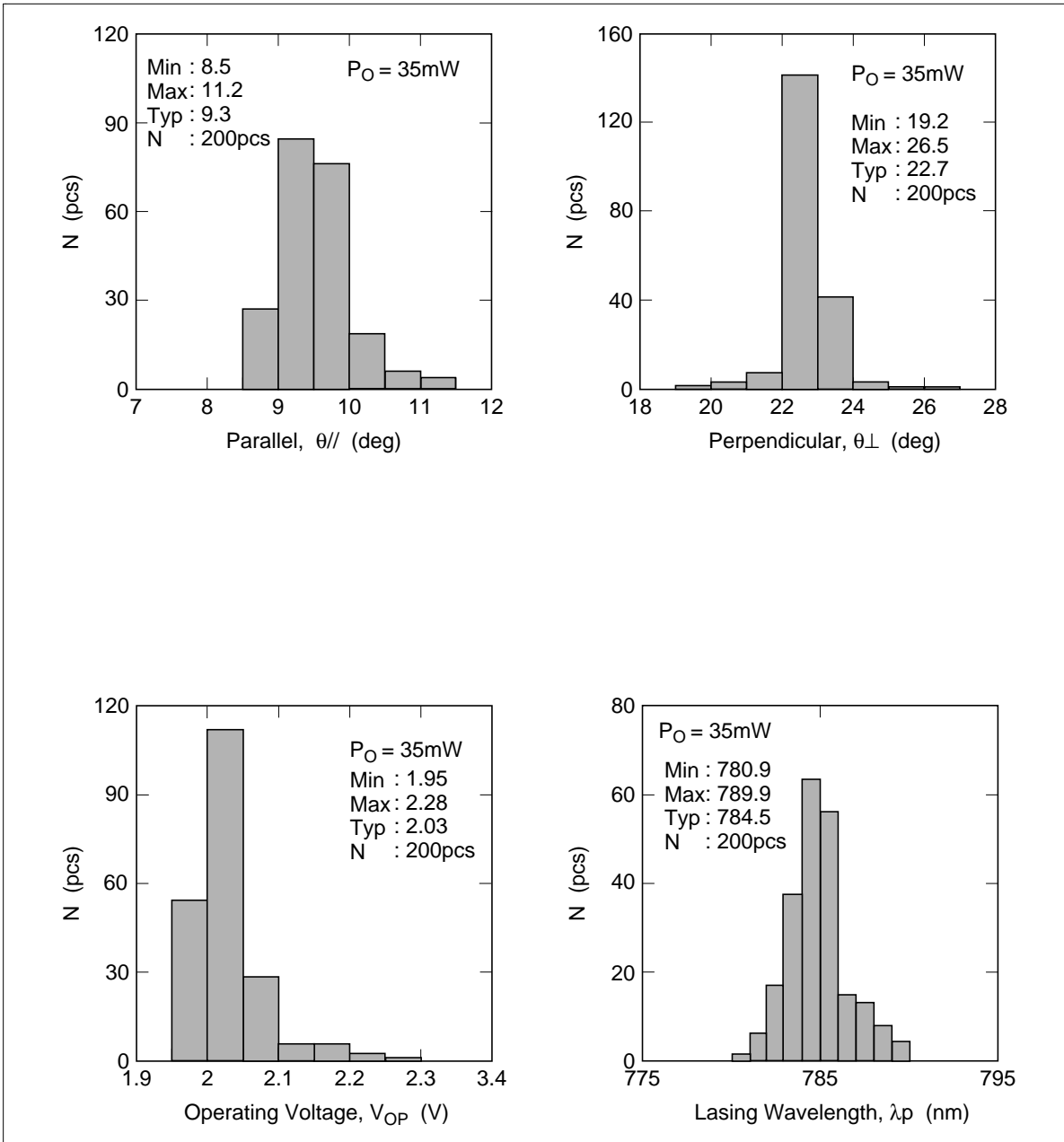
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Characteristics Distribution

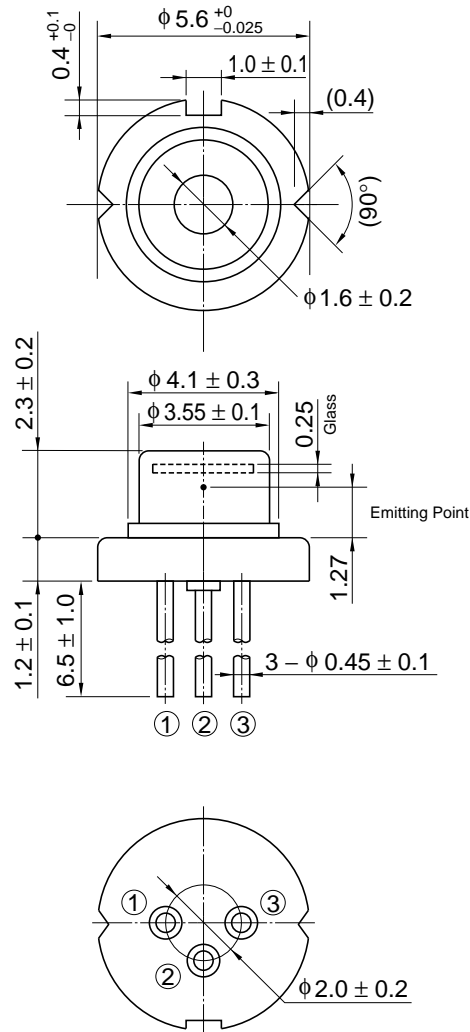




HL7859MG

Package Dimensions

Unit: mm



Hitachi Code	LD/MG
JEDEC	N
EIAJ	N
Weight (reference value)	0.3 g

Cautions

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