Description

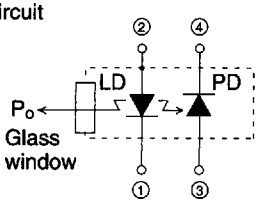
The HL1352MF is a 1.3 μm InGaAsP distributed-feedback laser diode (DFB LD) with a multi-quantum well (MQW) structure. It is suitable as a light source for short and medium - range fiberoptic communication systems and other applied optical equipment. It has high optical power with low drive current and wide operating temperature range (–20 to +85°C). The compact package is suitable for module assembly.

Features

- Wide operating temperature range:
  T_{opr} = –20 to +85°C
- High output power: 10 mW (Pulse)
  5 mW (CW)
- Low operating current:
  I_{op} (P_O = 5 mW) = 30 mA (Typ. @T_C = 25°C)
  I_{op} (P_O = 5 mW) = 80 mA (Typ. @T_C = 85°C)

Package Type
- HL1352MF: MF

Internal Circuit



Absolute Maximum Ratings (T_C = 25°C)

Item	Symbol	Rated Value	Unit
Optical output power	P_O	10 (pulse)	mW
		5 (CW)	
LD reverse voltage	$V_{R\ (LD)}$	2	V
PD reverse voltage	$V_{R\ (PD)}$	15	V
PD forward current	$I_{F\ (PD)}$	1	mA
Operating temperature	T_{opr}	–20 to +85	°C
Storage temperature	T_{stg}	–40 to +100	°C

Optical and Electrical Characteristics (T_C = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Threshold current	I_{th}	—	15	30	mA	
Optical output power	P_O	5	—	—	mW	Kink free
Slope efficiency	η	0.25	0.35	—	mW/mA	T_C = 25°C
		0.10	0.15	—		T_C = 85°C
Lasing wavelength	λ_p	1290	1310	1330	nm	P_O = 5 mW
Side-mode suppression ratio	S_r	30	38	—	nm	P_O = 5 mW
Beam divergence (parallel)	$\theta_{//}$	—	30	—	deg.	P_O = 5 mW, FWHM
Beam divergence (perpendicular)	$\theta_{\perp}$	—	40	—	deg.	P_O = 5 mW, FWHM
Rise time	t_r	—	—	0.5	ns	10 to 90%
Fall time	t_f	—	—	0.5	ns	90 to 10%
Monitor current	I_S	100	—	—	μA	P_O = 5 mW, $V_{R\ (PD)}$ = 5 V
PD dark current	I_{DARK}	—	—	350	nA	$V_{R\ (PD)}$ = 5 V
PD capacitance	C_t	—	15	20	pF	$V_{R\ (PD)}$ = 5 V, f = 1 MHz
Photosensitivity saturation voltage	$V_{R\ (S)}$	—	—	2	V	