ML7xx16 SERIES

2.5Gbps InGaAsP DFB LASER DIODE

TYPE NAME

ML725B16F/ML720J16S/ML725J16F

DESCRIPTION

ML7xx16 series are uncooled DFB (Distributed Feedback) laser diodes for 2.5Gbps transmission emitting light beam at 1310nm.
λ/4 shifted grating structure is employed to obtain excellent SMSR performance under 2.5Gbps modulation. Furthermore, ML7xx16 can operate in the wide temperature range form -20ºC to 85ºC without any temperature control.

FEATURES

- λ/4 phase shifted grating structure
- Wide temperature range operation (-20ºC to 85ºC)
- High side-mode-suppression-ratio (typical 45dB)
- High resonance frequency (typical 11GHz)

APPLICATION

2.5Gbps transmission

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
Po	Output power	CW	**6**	mW
IF	Laser forward current	-	**200**	mA
VRL	Laser reverse voltage	-	**2**	V
IRD	PD forward current	-	**2**	mA
VRD	PD reverse voltage	-	**20**	V
Tc	Operation temperature	-	**-20 ~+85**	**ºC**
Tstg	Storage temperature	-	**-40 ~+100**	**ºC**

ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25ºC)

Symbol	Parameter	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Ith	Threshold current	CW	-	**10**	**15**	**mA**
		CW,Tc=85ºC	-	**35**	**50**	**mA**
Iop	Operation current	CW,Po=5mW	-	**30**	**40**	**mA**
		CW,Po=5mW,Tc=85ºC	-	**75**	**100**	**mA**
Vop	Operating voltage	CW,Po=5mW	-	**1.1**	**1.8**	**V**
η	Slope efficiency	CW,Po=5mW	**0.18**	**0.25**	-	**mW/mA**
λp	Peak wavelength	CW,Po=5mW,Tc=-20ºC~+85ºC	**1290**	**1310**	**1330**	**nm**
SMSR	Side mode suppression ratio	CW,Po=5mW,Tc=-20ºC~+85ºC	**35**	**45**	-	**dB**
θ//	Beam divergence angle (parallel)	CW,Po=5mW	-	**25**	**40**	**deg.**
θ⊥	(perpendicular)	CW,Po=5mW	-	**30**	**47**	**deg.**
fr	Resonance frequency	2.48832Gbps, Ibias=Ith,Ipp=40mA	-	**11**	-	**GHz**
tr,tf	Rise and fall time(10%-90%)	2.48832Gbps, Ibias=Ith,Ipp=40mA not including package	-	**100**	**150**	**psec**
Im	Monitoring current (PD)	CW,Po=5mW,VRD=1V	**0.1**	-	**2.0**	**mA**
Id	Dark current (PD)	VRD=5V	-	-	**0.1**	**µA**
Ct	Capacitance (PD)	VRD=5V,f=1MHz	-	**10**	**20**	**pF**

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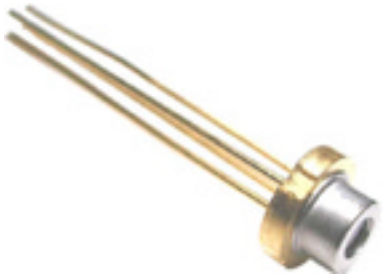
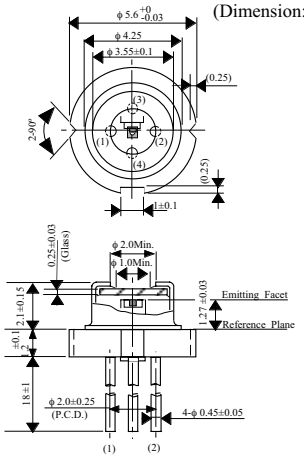
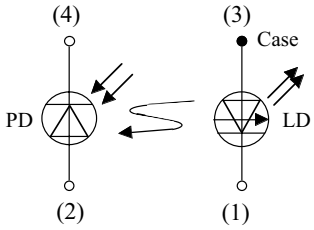
OUTLINE DRAWINGS

ML725B16F

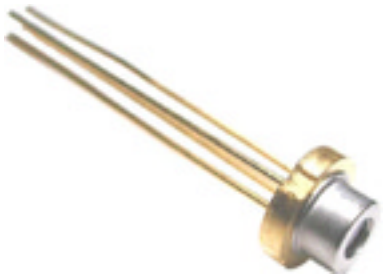


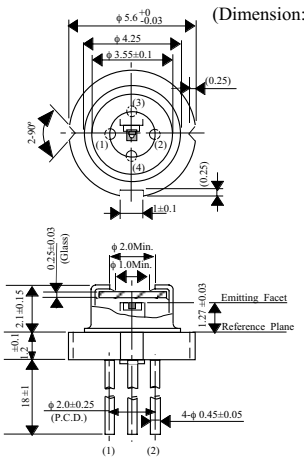


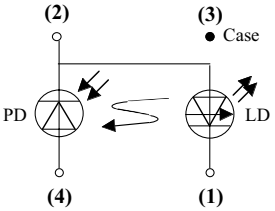


ML725B16F

ML720J16S

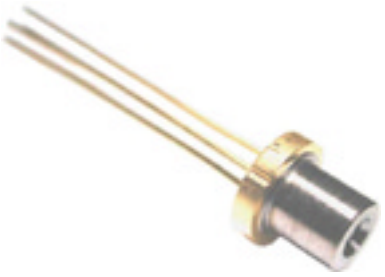


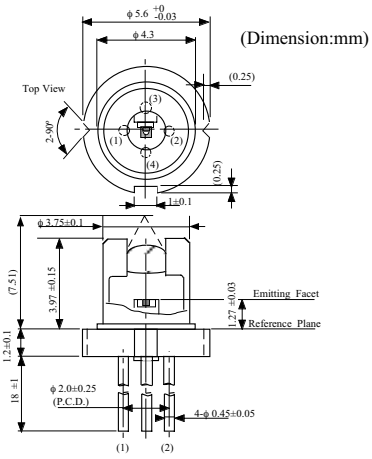


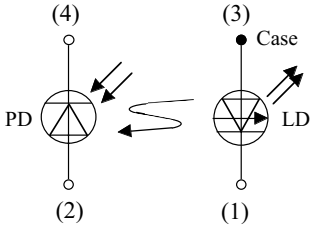


ML720J16S

ML725J16F







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TYPICAL CHARACTERISTICS

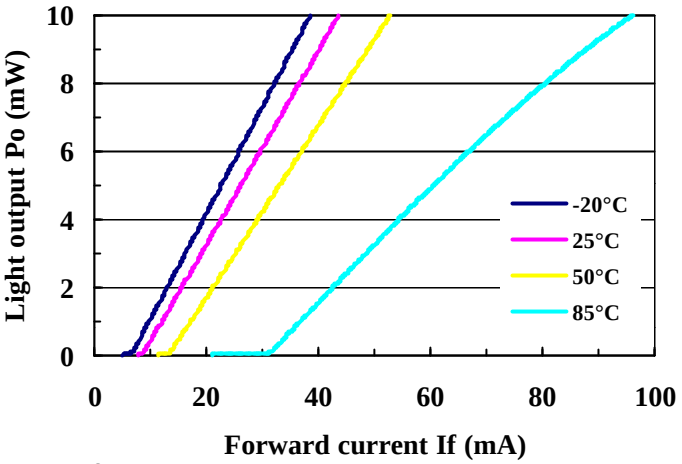

Fig. 1 Light output v.s. forward current

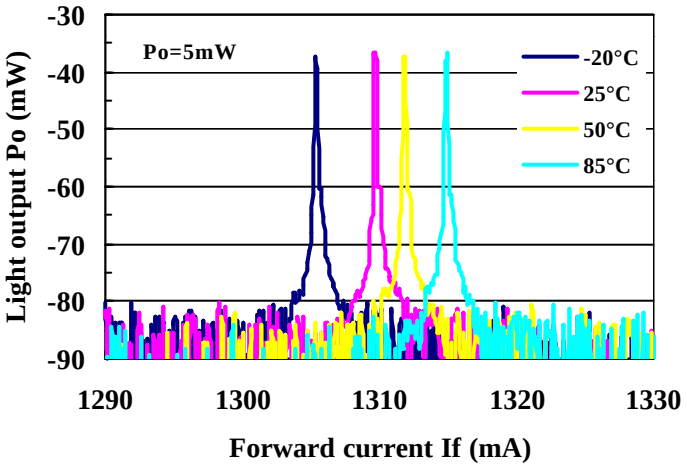

Fig. 2 Spectrum

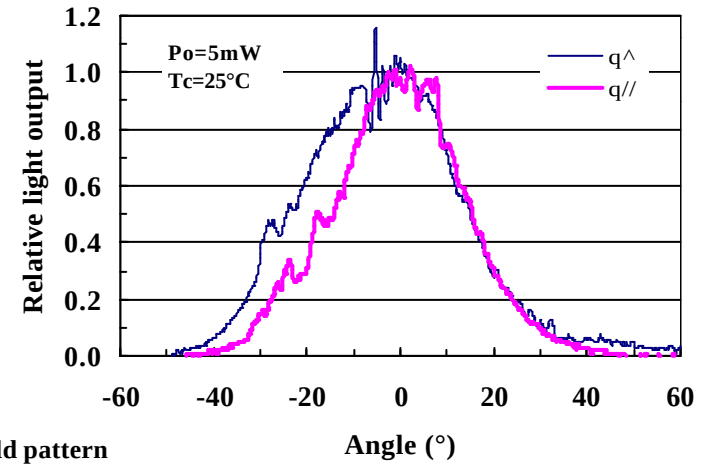

Fig. 3 Far field pattern