

# 1.5 $\mu$ m Gain Chip for external cavity laser **AE5T315BY20P (chip on sub-mount)**

AE5T315BY20P is 1.5 $\mu$ m InGaAsP / InP Gain Chip for External Cavity Laser developed as a light source for optical fiber communication or optical sensing.

## ◆ FEATURES

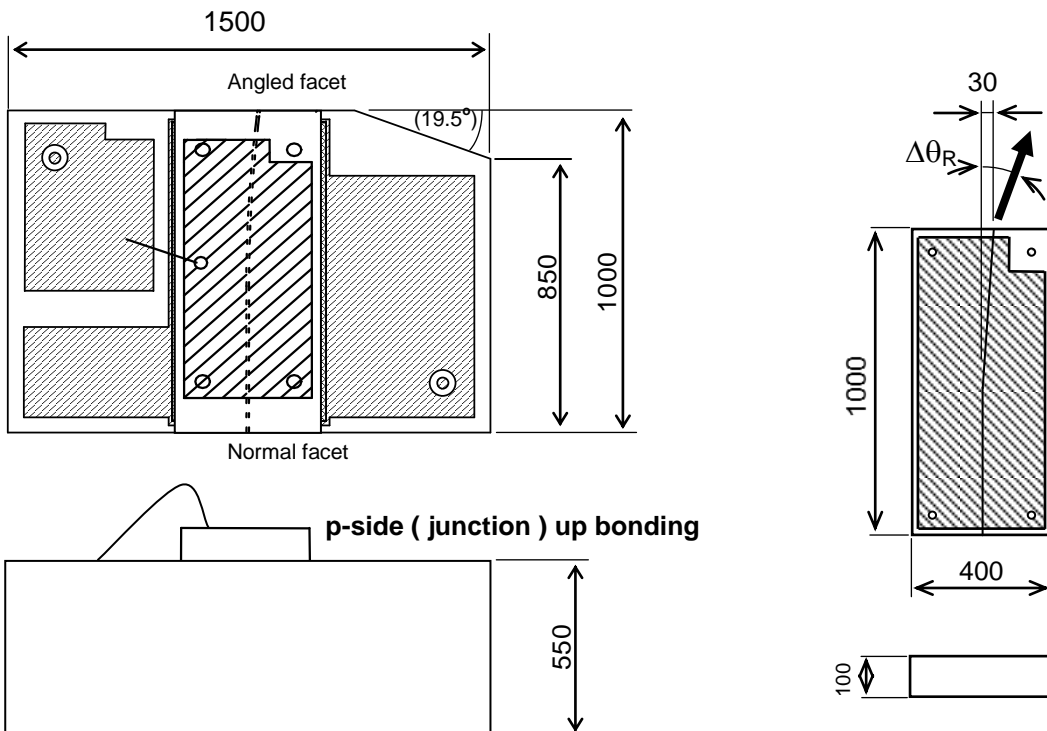
- Broad band: >100nm tuning range
- High Optical Output Power:  
    >40mW with external cavity
- Low spectral ripple
- Bare chip shipment is also available
- Normal facet reflectance;  
    High reflection coating (HR 95%)
- Angled facet reflectance;  
    Anti-reflection coating (AR < 0.01%)

## ◆ ABSOLUTE MAXIMUM RATINGS (T<sub>chip</sub>=25°C)

Item	Symbol	Rating	Unit
Forward Current	I <sub>F</sub>	500	mA
LD Reverse Voltage (T <sub>LD</sub> =25°C)	V <sub>R</sub>	2	V
Operating Case Temperature*	T <sub>C</sub>	15~45	°C
Storage Temperature	T <sub>std</sub>	-40~85	°C
Process/Soldering Temp. vs Time			
Maximum duration 20s	-	300	°C
Maximum duration 2hour	-	200	°C
Maximum duration 100hour	-	120	°C
ESD(Human Body Model)	ESD	500	V

\*No condensation

## ◆ DIMENSIONS (Unit : $\mu$ m)



**◆ OPTICAL AND ELECTRICAL CHARACTERISTICS** ( $T_{LD}=25^{\circ}\text{C}$ ,  $T_C=25^{\circ}\text{C}$ )

Item	Symbol	Test condition	Min.	Typ.	Max.	Unit
Forward Voltage	$V_F$	IF =200 mA, pulsed (tw=50 $\mu\text{s}$ )		1.4	2.0	V
ASE Output Power	$P_{ASE}$	IF =200 mA, pulsed (tw=50 $\mu\text{s}$ )	5	10		mW
Center Wavelength	$\lambda_C$	IF =100 mA, pulsed (tw=50 $\mu\text{s}$ )	1490		1550	nm
ASE Ripple	M	IF =100 mA, CW at $\lambda=1550$ nm			3.5	dB
Beam Exit Angle	$\Delta\theta_R$	IF =200 mA CW	19	20	21	deg.
Beam Divergence Angle (FAHM) transverse (perpendicular), Normal Facet	$\Theta_t^{NOR}$	IF =200 mA CW	15	20	25	deg.
Beam Divergence Angle (FAHM) lateral (parallel), Normal Facet	$\Theta_p^{NOR}$	IF =200 mA CW	17	20	23	deg.
Beam Divergence Angle (FAHM) transverse (perpendicular), Angled Facet	$\Theta_t^{ANG}$	IF =200 mA CW	26	29	32	deg.
Beam Divergence Angle (FAHM) lateral (parallel), Angled Facet	$\Theta_p^{ANG}$	IF =200 mA CW	15	18	21	deg.

**◆ TECHNICAL SPECIFICATIONS**

Item	Symbol	Test condition	Min.	Typ.	Max.	Unit
Angled facet Reflectance	$R^{ANG}$	C-band		$5 \times 10^{-5}$	$10^{-4}$	
Normal facet Reflectance	$R^{NOR}$	C-band	90	95		%
Chip Length			0.98	1.00	1.02	mm
Chip Width			0.38	0.40	0.42	mm
Chip Height			0.09	0.10	0.11	mm



**CAUTION** : Handle the fiber of the enclosed device(s) with extreme care ; glass fiber is subject to breakage if mishandled and permanent damage to the device may result. Do not pull the device by the fiber or protective sleeve.  
Do not coil the fiber into a loop of than 30 mm in radius.

**SEMICONDUCTOR LASER**

**DANGER**

INVISIBLE LASER RADIATION  
AVOID EYE OR SKIN EXPOSURE TO  
DIRECT OR SCATTERED RADIATION

**AVOID EXPOSURE**  
Invisible laser radiation is emitted from this aperture

**OUTPUT POWER** 500mW  
**WAVELENGTH** 0.80 to 1.80 μm  
**CLASS IIb LASER PRODUCT**

Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.  
This Product Complies with 21 CFR 1040.10 and 1040.11  
Manufactured Anritsu Corp. 5-1-1 Onna, Atsugi-shi, Kanagawa, Japan

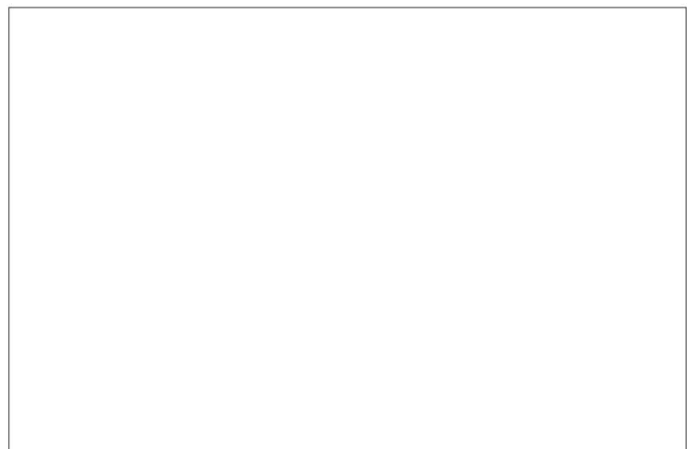
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