

Light is OSRAM

15.07.2020

OS-IN-2020-013

Update of Data Sheet for PLT5 520B

Objective	Update of data sheet of PLT5 520B	
Products affected	PLT5 520B	
Background	<p>A) Change of output power specifications Increase minimum output power in the data sheet based on improved production distribution due to laser diode chip improvement.</p> <p>B) Change of maximum and typical forward voltage, threshold current and monitor current Changes of maximum and minimum specification in correspond to increase in output power due to laser diode chip improvement.</p> <p>C) Change of beam divergence, $f(T_c)$ & Max permissible forward current characteristic Changes in correspond to increase in output power due to laser diode chip improvement.</p> <p>D) Introduction of additional BINs for wavelength λ_{peak} Improve delivery support for customer applications.</p>	
Realization	For more details please refer to 1_cip_OS-IN-2020-013	
Time Schedule	New data sheet:	available
	Samples available:	07 / 2020
	Start of production:	08 / 2020
	Start of delivery:	08 / 2020
Assessment	No change in fit, form, function and reliability of the laser	

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Update of Data Sheet for PLT5 520B

Customer Information Package

OS QM CQM ICI | 15.07.2020

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Overview

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Update of Data Sheet for PLT5 520B

1. Background

A) Change of output power specifications

Increase minimum output power in the data sheet based on improved production distribution due to laser diode chip improvement.

B) Change of maximum and typical forward voltage, threshold current and monitor current

Changes of maximum and minimum specification in correspond to increase in output power due to laser diode chip improvement.

C) Change of beam divergence, $f(T_c)$ & Max permissible forward current characteristic

Changes in correspond to increase in output power due to laser diode chip improvement.

D) Introduction of additional BINs for wavelength λ_{peak}

Improve delivery support for customer applications.

Assessement:

No change in fit, form, function and reliability of the laser

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Update of Data Sheet for PLT5 520B

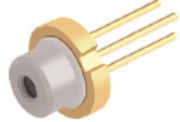
2. Affected Products

- PLT5 520B

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Update of Data Sheet for PLT5 520B

3. Change A:

Status	Change A (Output Power Specifications)								
Current	<p>Features:</p> <ul style="list-style-type: none"> Optical output power (continuous wave): 80 mW ($T_{case}=25^{\circ}C$) Typical emission wavelength: 520 nm Efficient radiation source for cw and pulsed operation Single tranverse mode semiconductor laser High modulation bandwidth TO56 package with photo diode <p>Ordering Information</p> <table border="1"> <thead> <tr> <th>Type</th> <th>Peak output power typ. P_{opt}</th> <th>Ordering Code</th> </tr> </thead> <tbody> <tr> <td>PLT5 520B</td> <td>80 mW</td> <td>Q65112A0737</td> </tr> </tbody> </table>			Type	Peak output power typ. P_{opt}	Ordering Code	PLT5 520B	80 mW	Q65112A0737
Type	Peak output power typ. P_{opt}	Ordering Code							
PLT5 520B	80 mW	Q65112A0737							
New	<p>PLT5 520B</p> <p>Metal Can® TO56 Green Laser Diode in TO56 Package</p>  <p>Optical output power (continuous wave): 110 mW ($T_{case}=25^{\circ}C$)</p> <table border="1"> <thead> <tr> <th></th> <th>P_{opt}</th> <th></th> </tr> </thead> <tbody> <tr> <td>PLT5 520B</td> <td>110 mW</td> <td>Q65112A0737</td> </tr> </tbody> </table> <p style="text-align: right;">NEW</p>				P_{opt}		PLT5 520B	110 mW	Q65112A0737
	P_{opt}								
PLT5 520B	110 mW	Q65112A0737							

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Update of Data Sheet for PLT5 520B

3. Change B:

Status	Change B (Forward Current)				
Current	<table border="1"> <tr> <td data-bbox="349 601 1174 694">Forward current ¹⁾</td> <td data-bbox="1174 601 1373 694">I_F</td> <td data-bbox="1373 601 1663 694">max.</td> <td data-bbox="1663 601 1798 694">300 mA</td> </tr> </table>	Forward current ¹⁾	I_F	max.	300 mA
Forward current ¹⁾	I_F	max.	300 mA		
New	<table border="1"> <tr> <td data-bbox="349 982 1174 1058">Forward current ¹⁾</td> <td data-bbox="1174 982 1373 1058">I_F</td> <td data-bbox="1373 982 1663 1058">max.</td> <td data-bbox="1663 982 1798 1058">330 mA</td> </tr> </table> <p data-bbox="1682 1096 1785 1136">NEW</p>	Forward current ¹⁾	I_F	max.	330 mA
Forward current ¹⁾	I_F	max.	330 mA		

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3. Change B:

Status – Characteristic Change

Current

Characteristics

 $P_{opt} = 80 \text{ mW}; T_{case} = 25 \text{ }^\circ\text{C}$

Parameter	Symbol	Values
Operating current ¹⁾	I_{op}	typ. 200 mA max. 240 mA
Peak wavelength ³⁾	λ_{peak}	min. 515 nm typ. 520 nm max. 530 nm
Spectral bandwidth at 50% $I_{rel,max}$ (FWHM)	$\Delta\lambda$	typ. 1 nm
Beam divergence (FWHM) parallel to pn-junction	Θ_{\parallel}	min. 5.0° typ. 6.3° max. 7.5°
Beam divergence (FWHM) perpendicular to pn-junction	Θ_{\perp}	min. 18.0° typ. 22.5° max. 25°
Threshold current	I_{th}	typ. 40 mA max. 70 mA
Forward voltage ⁴⁾	V_f	typ. 6.4 V max. 8.0 V
TE polarization	P_{TE}	typ. 100:1
Modulation frequency	f	min. 100 MHz
Monitor current ⁵⁾	I_m	typ. 110 μA
Thermal resistance junction case real	R_{thJC}	typ. 34 K/W

New

 $P_{opt} = 110 \text{ mW}; T_{case} = 25 \text{ }^\circ\text{C}$

Parameter	Symbol	Values
Operating current ¹⁾	I	typ. 175 mA max. 240 mA
Operating current ¹⁾	I	typ. 225 mA max. 300 mA
Peak wavelength ³⁾	λ_{peak}	min. 515 nm typ. 520 nm max. 530 nm
Spectral bandwidth at 50% $I_{rel,max}$ (FWHM)	$\Delta\lambda$	typ. 1 nm
Beam divergence (FWHM) parallel to pn-junction	Θ_{\parallel}	min. 5.5° typ. 7° max. 8.5°
Beam divergence (FWHM) perpendicular to pn-junction	Θ_{\perp}	min. 18° typ. 23° max. 25°
Threshold current	I_{th}	typ. 40 mA max. 90 mA
Forward voltage ⁴⁾	V_f	typ. 5.9 V max. 7.3 V
Forward voltage ⁴⁾	V_f	typ. 6.1 V max. 7.5 V
TE polarization	P_{TE}	typ. 100:1
Modulation frequency	f	min. 100 MHz
Monitor current ⁵⁾	I	typ. 200 μA
Thermal resistance junction case real	R_{thJC}	typ. 34K/W

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3. Change C:

Status	Change C (Beam Divergence (parallel to pn-junction))			
Current	Beam divergence (FWHM) parallel to pn-junction	Θ_{\parallel}	min.	5.0 °
			typ.	6.3 °
			max.	7.5 °
	Beam divergence (FWHM) perpendicular to pn-junction	Θ_{\perp}	min.	18.0 °
		typ.	22.5 °	
		max.	25 °	
New	Beam divergence (FWHM) parallel to <u>pn</u> -junction	Θ_{\parallel}	min.	5.5 °
			typ.	7 °
			max.	8.5 °
	Beam divergence (FWHM) perpendicular to <u>pn</u> -junction	Θ_{\perp}	min.	18 °
		typ.	23 °	
		max.	25 °	

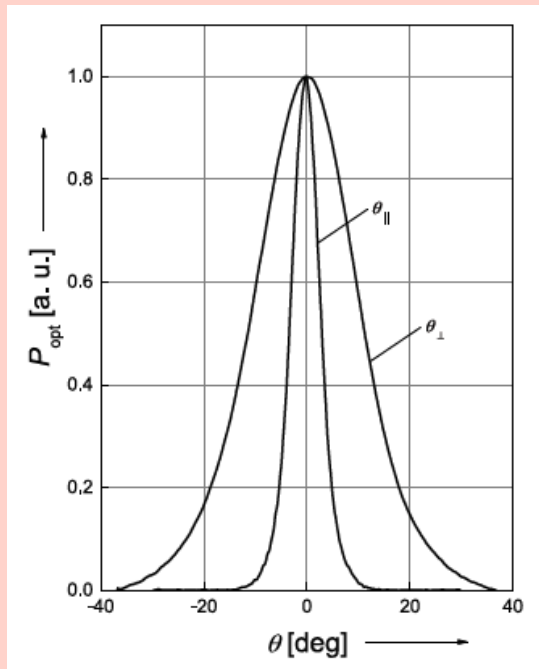
NEW

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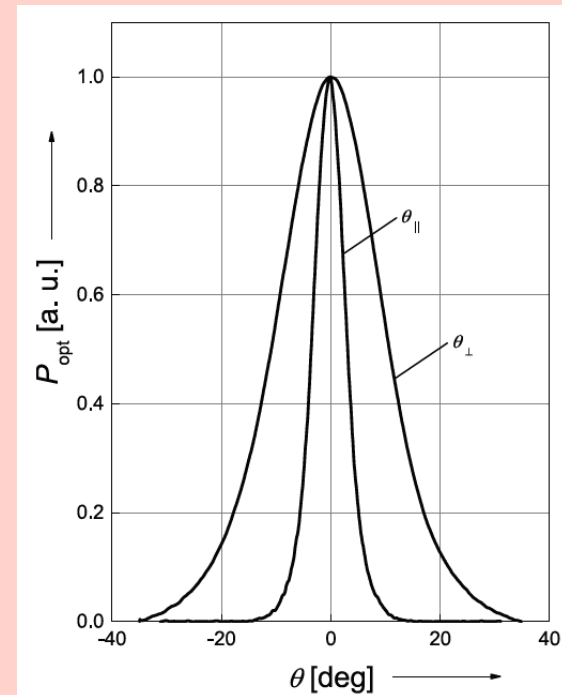
Update of Data Sheet for PLT5 520B

3. Change C:**Status – Beam Divergence**

Current



New



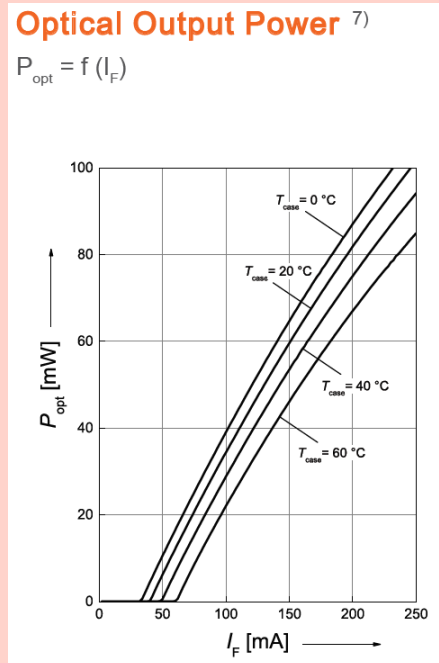
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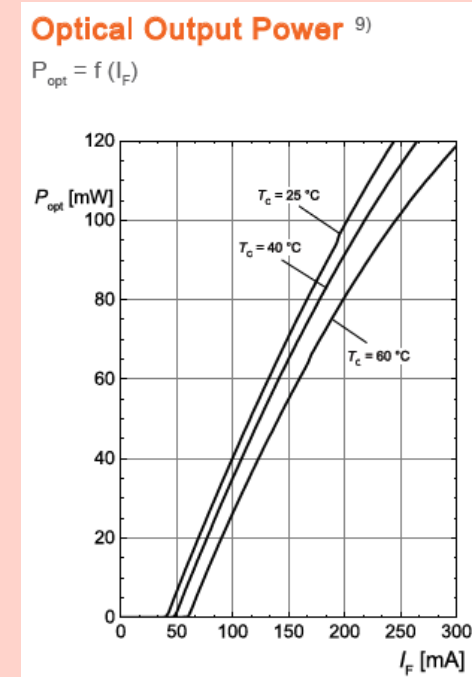
3. Change C:

Status – f(Tc) – Optical Out Power

Current



New

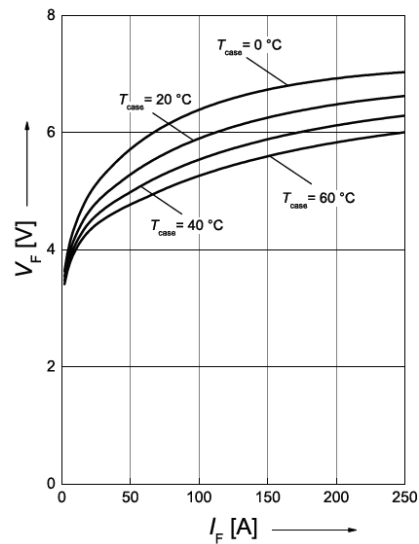


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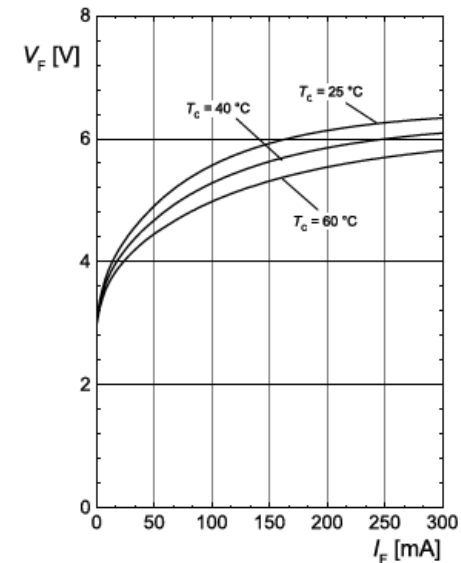
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3. Change C:**Status – f(Tc) – Opt. Power / Forward Voltage****Current****Opt. Power / Forward Voltage** ⁷⁾

$$V_F = f(I_F)$$

**New****Opt. Power / Forward Voltage** ⁹⁾

$$V_F = f(I_F)$$

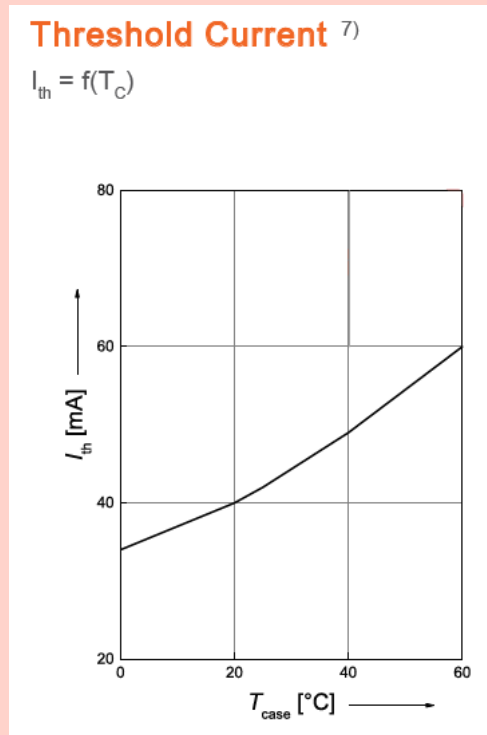


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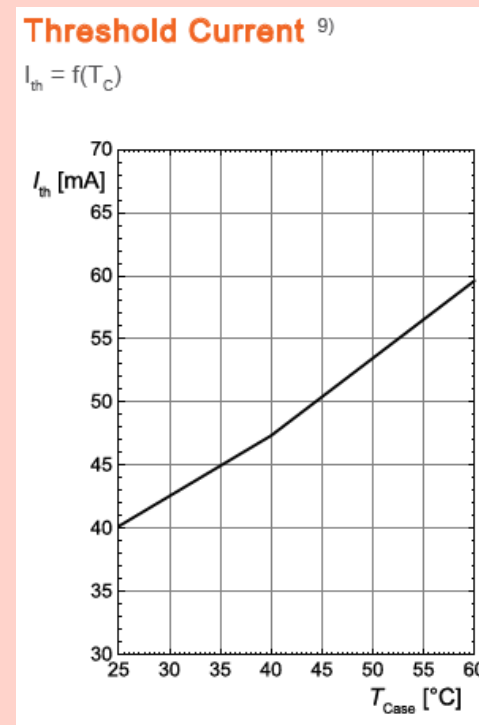
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3. Change C:Status – $f(T_c)$ – Threshold Current

Current

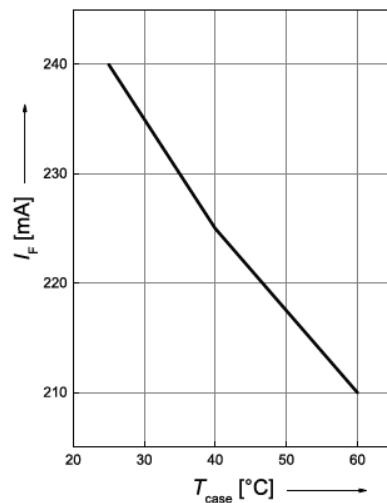
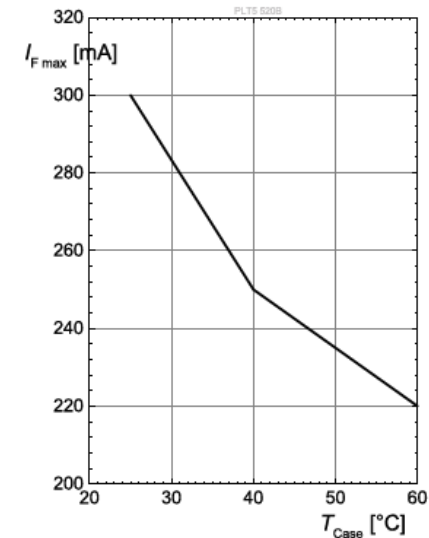


New



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3. Change C:**Status – Max permissible forward current****Current****Max. Permissible Forward Current** $I_{F,max} = f(T_C)$; max. recommended current**New****Max. Permissible Forward Current** $I_{F,max} = f(T_C)$; max. recommended current

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3. Change D:

Status	Change D (beam divergence (parallel to pn-junction))									
Current	No Binning for wavelength λ_{peak}									
New	<div style="border: 2px solid red; border-radius: 15px; padding: 10px;"> <p>Wavelength Groups</p> <table border="1"> <thead> <tr> <th>Group</th> <th>Peak wavelength₃₎ min. λ_{peak}</th> <th>Peak wavelength₃₎ Max. λ_{peak}</th> </tr> </thead> <tbody> <tr> <td>B1</td> <td>515</td> <td>520</td> </tr> <tr> <td>B2</td> <td>520</td> <td>530</td> </tr> </tbody> </table> </div> <p style="text-align: right; color: red; font-weight: bold; font-size: 1.2em;">NEW</p>	Group	Peak wavelength ₃₎ min. λ_{peak}	Peak wavelength ₃₎ Max. λ_{peak}	B1	515	520	B2	520	530
Group	Peak wavelength ₃₎ min. λ_{peak}	Peak wavelength ₃₎ Max. λ_{peak}								
B1	515	520								
B2	520	530								

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Update of Data Sheet for PLT5 520B

4. Time Schedule

- New Data Sheet : available
- Samples available: 07 / 2020
- Start of Production: 08 / 2020
- Start of Delivery: 08 / 2020

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Thank you.