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16.12.2019

OS-IN-2019-036
Implementation of improved electro-optical specifications for Green Laser Diodes

Objective	Implementation of improved electro-optical specifications for Green Laser Diodes
Devices affected	Group 1: PLT3 510, PLT5 510 Group 2: PLT5 510_E9600-XX, PLT5 520EA_P Group 3: PL 520, PL 520 E9622, PLT5 520
Background	**A) Change of typical and maximum threshold current specifications** Reduce typical and maximum threshold current based on laser diode chip improvement. **B) Change of typical and maximum operating current specifications** Reduce typical and maximum operating current based on laser diode chip improvement. **C) Change of typical and maximum operating voltage specifications** Reduce typical and maximum operating voltage based on laser diode chip improvement. **D) Change of minimum, typical and maximum beam divergence angle for parallel (slow axis) and perpendicular (fast axis) to pn-junction** Raise of typical FWHM degree values and improvement of the aspect ratios based upon laser diode chip improvement.
Realization	For more details please refer to 1_cip_OS-IN-2019-036

Time Schedule	There will be a phase over period where the current and improved laser version will be delivered. During phase over period the datasheet limits remain unchanged. The datasheet (incl. updated maximum forward voltage specification) will be updated after the complete switch-over. Estimated time to complete the switch-over: 6 months. New data sheet available: mid of January 2020 Samples available: end of December 2019 Start of delivery: mid of April 2020 Group 1: PLT3 510, PLT5 510 Group 2: PLT5 510_E9600-XX, PLT5 520EA_P Group 3: PL 520, PL 520 E9622, PLT5 520
Assessment	No change in fit, form, function and reliability of the laser diode

Please direct your inquiry to your local Sales office.

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Customer Information Package

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Overview

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1. Background

A) Change of typical and maximum threshold current specifications

Reduce typical and maximum threshold current based on laser diode chip improvement.

B) Change of typical and maximum operating current specifications

Reduce typical and maximum operating current based on laser diode chip improvement.

C) Change of typical and maximum operating voltage specifications

Reduce typical and maximum operating voltage based on laser diode chip improvement.

D) Change of minimum, typical and maximum beam divergence angle for parallel (slow axis) and perpendicular (fast axis) to pn-junction

Raise of typical FWHM degree values and improvement of the aspect ratios based upon laser diode chip improvement.

Assessement:

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

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2. Affected Devices

- Group 1: PLT3 510
  PLT5 510

- Group 2: PLT5 510 E9600-XX
  PLT5 520EA_P

- Group 3: PL 520
  PL 520 E9622
  PLT5 520

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3. Change A:

Status	Change A (Change of typical and maximum threshold current specifications)
Current	Threshold current I_{th} typ. 30 mA, max. 60 mA
New	Threshold current I_{th} typ. 25 mA, max. 50 mA NEW

- Affected Devices: as per Group 1 (PLT3 510, PLT5 510)

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3. Change A:

Status	Change A (Change of typical and maximum threshold current specifications)
Current	Threshold current I_{th} typ. 35 mA, max. 65 mA
New	Threshold current I_{th} typ. 30 mA, max. 50 mA NEW

- Affected Devices: as per Group 2 (PLT5 510_E9600-XX, PLT5 520EA_P)

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3. Change A:

Status	Change A (Change of typical and maximum threshold current specifications)			
Current	for Peak output power of typ. 30 mW			
	Threshold current	I_{th}	typ. max.	50 mA 75 mA
	for Peak output power of typ. 50 mW			
	Threshold current	I_{th}	typ. max.	45 mA 75 mA
New	for Peak output power of typ. 30 mW			
	Threshold current	I_{th}	typ. max.	40 mA 65 mA
	for Peak output power of typ. 50 mW			
	Threshold current	I_{th}	typ. max.	30 mA 65 mA

- Affected Devices: as per Group 3 (PL 520, PL 520 E9622, PLT5 520) NEW

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3. Change B:

Status	Change B (Change of typical and maximum operating current specifications)
Current	Operating current I_{op} typ. 60 mA max. 85 mA
New	Operating current I_{op} typ. 45 mA max. 75 mA NEW

- Affected Devices: as per Group 1 (PLT3 510, PLT5 510)

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3. Change B:

Status	Change B (Change of typical and maximum operating current specifications)				
Current	for PLT5 510_E9600-XX				
	Operating current	Bin B1/ B2/ B3	I_{op}	typ. max.	83 mA 90/ 105/ 140 mA
	for PLT5 520EA_P				
	Operating current		I_{op}	typ. max.	65 mA 105 mA
New	for PLT5 510_E9600-XX				
	Operating current	Bin B1/ B2/ --	I_{op}	typ. max.	80 mA 90/ 105/ -- mA
	for PLT5 520EA_P				
	Operating current		I_{op}	typ. max.	62 mA 82 mA

- Affected Devices: as per Group 2 (PLT5 510_E9600-XX, PLT5 520EA_P) NEW

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3. Change B:

Status	Change B (Change of typical and maximum operating current specifications)			
Current	for Peak output power of typ. 30 mW			
	Operating current	I_{op}	typ. max.	100 mA 140 mA
	for Peak output power of typ. 50 mW			
	Operating current	I_{op}	typ. max.	125 mA 160 mA
New	for Peak output power of typ. 30 mW			
	Operating current	I_{op}	typ. max.	95 mA 120 mA
	for Peak output power of typ. 50 mW			
	Operating current	I_{op}	typ. max.	115 mA 140 mA

- Affected Devices: as per Group 3 (PL 520, PL 520 E9622, PLT5 520) NEW

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3. Change C:

Status	Change C (Change of typical and maximum operating voltage specifications)			
Current	Operating voltage	V_{op}	typ. max.	5 V 7 V
New	Operating voltage	V_{op}	typ. max.	5 V 6,6 V
				NEW

- Affected Devices: as per Group 1 (PLT3 510, PLT5 510)

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3. Change C:

Status	Change C (Change of typical and maximum operating voltage specifications)			
Current	for PLT5 510_E9600-XX			
	Operating voltage	V_{op}	typ. max.	6,5 V 7,5 V
	for PLT5 520EA_P			
	Operating voltage	V_{op}	typ. max.	6,2 V 7 V
New	for PLT5 510_E9600-XX			
	Operating voltage	V_{op}	typ. max.	5,6 V 6,8 V
	for PLT5 520EA_P			
	Operating voltage	V_{op}	typ. max.	5,5 V 6,3 V

- Affected Devices: as per Group 2 (PLT5 510_E9600-XX, PLT5 520EA_P) NEW

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3. Change C:

Status	Change C (Change of typical and maximum operating voltage specifications)			
Current	for Peak output power of typ. 30 mW			
	Operating voltage	V_{op}	typ. max.	6,5 V 8 V
	for Peak output power of typ. 50 mW			
	Operating voltage	V_{op}	typ. max.	6,9 V 8 V
New	for Peak output power of typ. 30 mW			
	Operating voltage	V_{op}	typ. max.	5,8 V 6,7 V
	for Peak output power of typ. 50 mW			
	Operating voltage	V_{op}	typ. max.	6 V 6,9 V

- Affected Devices: as per Group 3 (PL 520, PL 520 E9622, PLT5 520) NEW

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3. Change D:

Status	Change D (Change of minimum, typical and maximum beam divergence angle for parallel (slow axis) and perpendicular (fast axis) to pn-junction)			
Current	Beam divergence (FWHM) parallel to pn-junction	$\Theta_{\parallel}$	min. typ. max.	5 ° 7 ° 9 °
	Beam divergence (FWHM) perpendicular to pn-junction	$\Theta_{\perp}$	min. typ. max.	19 ° 22 ° 25 °
New	Beam divergence (FWHM) parallel to pn-junction	$\Theta_{\parallel}$	min. typ. max.	6 ° 8 ° 10 °
	Beam divergence (FWHM) perpendicular to pn-junction	$\Theta_{\perp}$	min. typ. max.	19 ° 22 ° 25 °

NEW

Affected Devices: as per Group 1 (PLT3 510, PLT5 510)

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3. Change D:

Status	Change D (Change of minimum, typical and maximum beam divergence angle for parallel (slow axis) and perpendicular (fast axis) to pn-junction)			
Current	Beam divergence (FWHM) parallel to pn-junction	$\Theta_{\parallel}$	min. typ. max.	5 ° 7 ° 10 °
	Beam divergence (FWHM) perpendicular to pn-junction	$\Theta_{\perp}$	min. typ. max.	19 ° 22 ° 25 °
New	Beam divergence (FWHM) parallel to pn-junction	$\Theta_{\parallel}$	min. typ. max.	6 ° 8 ° 10 °
	Beam divergence (FWHM) perpendicular to pn-junction	$\Theta_{\perp}$	min. typ. max.	19 ° 22 ° 25 °

NEW

Affected Devices: as per Group 2 (PLT5 510_E9600-XX, PLT5 520EA_P)

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3. Change D:

Status	Change D (Change of minimum, typical and maximum beam divergence angle for parallel (slow axis) and perpendicular (fast axis) to pn-junction)			
Current	Beam divergence (FWHM) parallel to pn-junction	$\Theta_{\parallel}$	min. typ. max.	5 ° 7 ° 9 °
	Beam divergence (FWHM) perpendicular to pn-junction	$\Theta_{\perp}$	min. typ. max.	19 ° 22 ° 25 °
New	Beam divergence (FWHM) parallel to pn-junction	$\Theta_{\parallel}$	min. typ. max.	6 ° 8 ° 10 °
	Beam divergence (FWHM) perpendicular to pn-junction	$\Theta_{\perp}$	min. typ. max.	19 ° 22 ° 25 °

NEW

Affected Devices: as per Group 3 (PL 520, PL 520 E9622, PLT5 520)

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4. Time Schedule

There will be a phase over period where the current and improved laser version will be delivered. During phase over period the datasheet limits remain unchanged. The datasheet (incl. updated maximum forward voltage specification) will be updated after the complete switch-over. Estimated time to complete the switch-over: 6 months.

- New datasheet available: mid of January 2020
- Samples available: end of December 2019
- Start of Delivery: mid of April 2020

Group 1: PLT3 510, PLT5 510

Group 2: PLT5 510_E9600-XX, PLT5 520EA_P

Group 3: PL 520, PL 520 E9622, PLT5 520

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Thank you.