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Product Change Notification



Product Group: OPT/Thu Jun 6, 2024/PCN-OPT-1325-2024-REV-0

Product and Process improvements for dual channel photovoltaic mosfet driver VO1263

For further information, please contact your regional Vishay office.

CONTACT INFORMATION

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Description of Change:

1. Vishay will transfer the production of the dual channel photovoltaic mosfet driver VO1263 from a conventional production line to a modern and automated matrix line.
2. An alternative in-house emitter using our new MOCVD fabrication process has been qualified.
3. The leadframe will be plated with Nickel.
4. The outer mold compound will be updated.
5. The diameter of the gold wire used to bond the emitter and photodiode to the lead-frame will be changed from 30 micron to 25 micron.

Reason for Change: Vishay will move the the production of the dual channel photovoltaic mosfet driver VO1263 to our newer, automated manufacturing line to streamline production and optimize supply chain. Along with this, the change in plating material, mold compound and bond wire diameter reduction allows harmonization of our manufacturing processes.

A new emitter has been introduced as part of our transition to state-of-the-art technology in our factory.

Expected Influence on Quality/Reliability/Performance: There is no change in form, fit and function of the affected parts. The performance as well as the reliability remains unchanged. The deviations in the performance are highlighted in the attached comparison report.

Nevertheless, we require to test the product in customers application.

Part Numbers/Series/Families Affected: VO1263AAC, VO1263AACT, VO1263AACT-3135, VO1263AB,

Vishay Brand(S): Vishay Semiconductors

Time Schedule:

Start Shipment Date: Thu Aug 15, 2024

Sample Availability: 10th June 2024

Product Identification: Date Code

Qualification Data: Qualification data available upon request



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This PCN is considered approved, without further notification, unless we receive specific customer concerns before Fri Jul 5, 2024 or as specified by contract.

Issued By: Sourabh Kulkarni, sourabh.kulkarni@vishay.com



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PCN OPT-1325-2024 Rev.0

Product and Process improvements for dual channel photovoltaic mosfet driver VO1263

June 2024

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PCN OPT-1325-2024, June 2024



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Changes in datasheet parameters

pre-PCN specifications

ELECTRICAL CHARACTERISTICS (Tamb = 25°C , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
LED forward voltage	$I_F = 10\text{ mA}$	V_F	1.2	1.3	1.6	V
Detector reverse voltage	$I_R = 2.0\text{ }\mu\text{A}$	$V_{R(PDA)}$		350		V
Open circuit voltage (pins 5, 6 or 7, 8)	$I_F = 5.0\text{ mA}$	V_{OC}		13.73		V
	$I_F = 10\text{ mA}$		10.3	14.27	16.5	
	$I_F = 15\text{ mA}$			14.5		
	$I_F = 20\text{ mA}$			14.7		
	$I_F = 30\text{ mA}$			14.94		
Short circuit current (pins 5, 6 or 7, 8)	$I_F = 5.0\text{ mA}$	I_{SC}	2.7	4.47		μA
	$I_F = 10\text{ mA}$		7	9.8		
	$I_F = 15\text{ mA}$		11	15.33		
	$I_F = 20\text{ mA}$		15	20.97		
	$I_F = 30\text{ mA}$		21	32.4		

post-PCN specifications

SYMBOL	MIN.	TYP.	MAX.	UNIT
V_F	1.2	1.4	1.7	V
$V_{R(PDA)}$		350		V
V_{OC}		14.2		V
	10.3	14.7	16.5	
		15		
		15.2		
I_{SC}		15.4		μA
	2.7	7		
	7	15		
	11	24		
	15	33		
	21	50		

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Changes in datasheet parameters

pre-PCN specifications

SWITCHING CHARACTERISTICS (Tamb = 25°C , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Turn-on time	I _F = 20 mA	t _{on}		16 ⁽¹⁾		μs
Turn-off time	I _F = 20 mA	t _{off}		472 ⁽¹⁾		μs

Note

⁽¹⁾ f = 1.0 kHz, pulse width = 100 μs, load (R_L) = 1.0 MΩ, 15 pF; measured at 90 % rated voltage (t_{on}), 10 % rated voltage / t_{off}). Actuation speed depends upon the external t_{on} and t_{off} circuitry and the capacitance of the MOSFET

⁽²⁾ f = 100 Hz, pulse width = 2 ms, load (R_L) = 1.0 MΩ, C_L = 15 pF; measured at 90 % rated voltage (t_{on}), 10 % rated voltage / t_{off}). Actuation speed depends upon the external t_{on} and t_{off} circuitry and the capacitance of the MOSFET

post-PCN specifications

SYMBOL	MIN.	TYP.	MAX.	UNIT
t _{on}		35 ⁽²⁾		μs
t _{off}		700 ⁽²⁾		μs

Changes in datasheet figures

pre-PCN

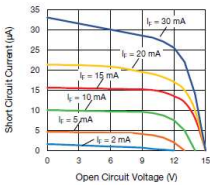


Fig. 1 - Short Circuit Current vs. Open Circuit Voltage

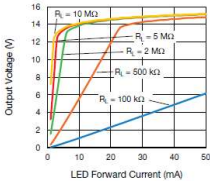


Fig. 2 - Output Voltage vs-LED Current

post-PCN

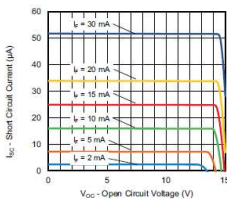


Fig. 1 - Short Circuit Current vs. Open Circuit Voltage

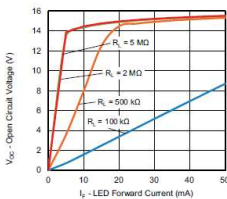


Fig. 2 - Output Voltage vs-LED Current

Changes in datasheet figures

PCN OPT-1325-2024, June 2024

pre-PCN

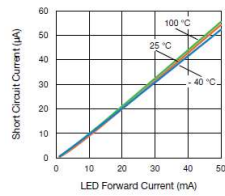


Fig. 3 - Short Circuit Current vs. LED Forward Current

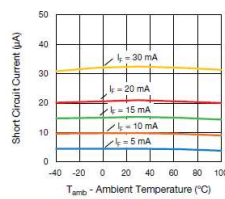


Fig. 4 - Short Circuit Current vs. Ambient Temperature

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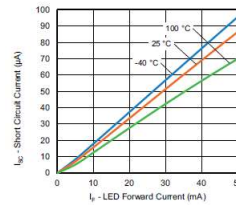


Fig. 3 - Short Circuit Current vs. LED Forward Current

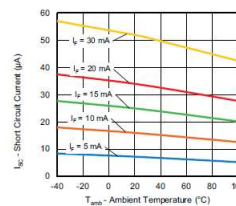


Fig. 4 - Short Circuit Current vs. Ambient Temperature

Changes in datasheet figures

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pre-PCN

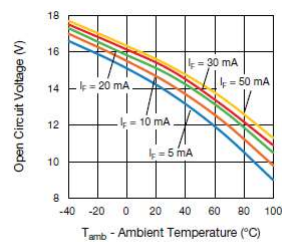


Fig. 5 - Open Circuit Voltage vs. Ambient Temperature

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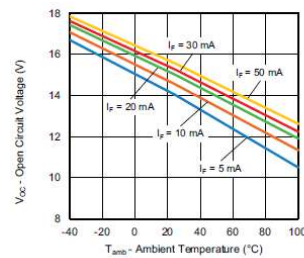


Fig. 5 - Open Circuit Voltage vs. Ambient Temperature

Changes in datasheet figures

pre-PCN

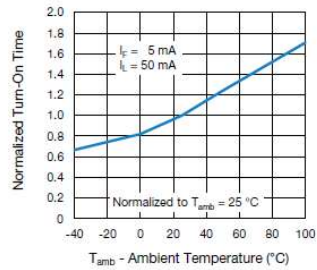


Fig. 7 - Normalized Turn-On Time vs. Ambient Temperature

post-PCN

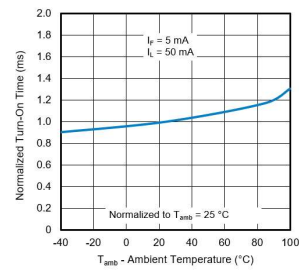


Fig. 7 - Normalized Turn-On Time vs. Ambient Temperature

Changes in datasheet figures

pre-PCN

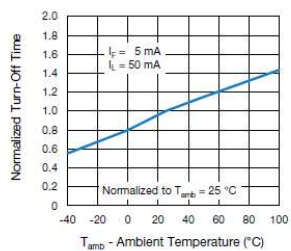


Fig. 8 - Normalized Turn-Off Time vs. Ambient Temperature

post-PCN

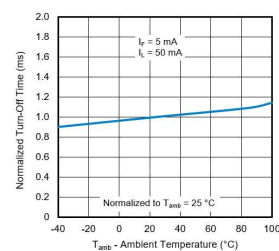


Fig. 8 - Normalized Turn-Off Time vs. Ambient Temperature

Changes in datasheet figures

pre-PCN

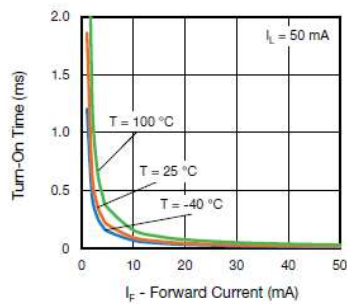


Fig. 9 - Turn-On Time vs. Forward Current

post-PCN

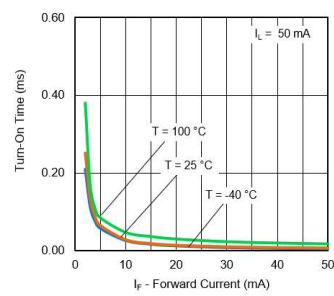


Fig. 9 - Turn-On Time vs. Forward Current

Changes in datasheet figures

pre-PCN

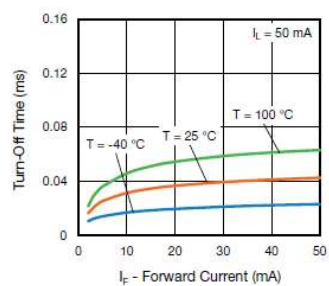


Fig. 10 - Turn-Off Time vs. Forward Current

post-PCN

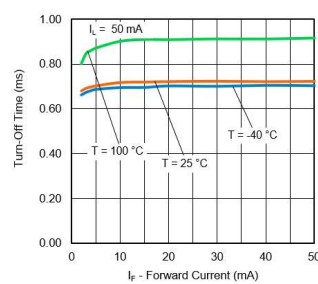


Fig. 10 - Turn-Off Time vs. Forward Current