

Qualification of new chipset and BOM for VOR1142M4, LH1546AEF solid state relay family

For further information, please contact your regional Vishay office.

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Description of Change: Vishay will change the chipset combination (Emitter and Mosfet dies) in the affected products. In addition, mold compound and leadframe will be changed as well as gold wire bond diameter will be reduced to 25 micron.

Reason for Change: The current Mosfet chip has been obsoleted by the supplier. As a result, a new chipset combination has been qualified to sustain the product performance and ensure uninterrupted supply to our valued customers.

Furthermore, an alternative molding compound and a leadframe has been qualified to have a standardized manufacturing process. In addition, gold bond wire diameter will be reduced to 25 micron which aligns with Vishay's standard wire diameter on similar products.

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. Min and Max values for the affected parts remain unchanged. However, the deviations in the typical performance are highlighted in the attached comparison report.

Nevertheless, we require customers to test the product in their applications.

Part Numbers/Series/Families Affected: VOR1142M4, VOR1142M4T, LH1546AEFTR, LH1546AEF,

Vishay Brand(S): Vishay Semiconductors

Time Schedule:

Start Shipment Date: Sunday November 15, 2026

Sample Availability: Samples are available 15-08-2026 onwards. Shipment date depends on the depletion of existing materials.

Product Identification: Lot Marking Code

Qualification Data: Qualification data available upon request

This PCN is considered approved, without further notification, unless we receive specific customer concerns before Wednesday August 26, 2026 or as specified by contract.

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



PCN OPT-1502-2026 Rev. 0
QUALIFICATION OF NEW CHIPSET AND BOM FOR
VOR1142M4, LH1546AEF solid state relay series

Pre and Post PCN Comparison report



VOR1142M4 series

Pre- PCN

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
INPUT						
IRED forward current, switch turn-on	$I_L = 100\text{ mA}$, $t = 10\text{ ms}$	I_{Fon}	-	0.25	2	mA
IRED forward current, switch turn-off	$V_L = \pm 350\text{ V}$, $I_L < 1\text{ }\mu\text{A}$	I_{Foff}	0.05	0.15	-	mA
IRED forward voltage	$I_F = 10\text{ mA}$	V_F	-	1.4	1.6	V
IRED reverse current	$V_R = 5\text{ V}$	I_R	-	-	10	μA
OUTPUT						
On-resistance	$I_F = 5\text{ mA}$, $I_L = 50\text{ mA}$	R_{ON}	-	19	27	Ω
Off-resistance	$I_F = 0\text{ mA}$, $V_L = \pm 100\text{ V}$	R_{OFF}	0.5	850	-	$\text{G}\Omega$
Off-state leakage current	$I_F = 0\text{ mA}$, $V_L = \pm 100\text{ V}$	I_{leak}	-	< 1	100	nA
	$I_F = 0\text{ mA}$, $V_L = \pm 400\text{ V}$	I_{leak}	-	6	500	nA
Output capacitance	$I_F = 0\text{ mA}$, $V_L = 1\text{ V}$, 1 MHz	C_O	-	39	-	pF
	$I_F = 0\text{ mA}$, $V_L = 50\text{ V}$, 1 MHz	C_O	-	6	-	pF
COUPLER						
Capacitance (input to output)	$V_{IO} = 1\text{ V}$	C_{IO}	-	0.4	-	pF

Post-PCN

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
INPUT						
IRED forward current, switch turn-on	$I_L = 100\text{ mA}$, $t = 10\text{ ms}$	I_{Fon}	-	0.25	2	mA
IRED forward current, switch turn-off	$V_L = \pm 350\text{ V}$, $I_L < 1\text{ }\mu\text{A}$	I_{Foff}	0.05	0.15	-	mA
IRED forward voltage	$I_F = 10\text{ mA}$	V_F	-	1.4	1.6	V
IRED reverse current	$V_R = 5\text{ V}$	I_R	-	-	10	μA
OUTPUT						
On-resistance	$I_F = 5\text{ mA}$, $I_L = 50\text{ mA}$	R_{ON}	-	19	27	Ω
Off-resistance	$I_F = 0\text{ mA}$, $V_L = \pm 100\text{ V}$	R_{OFF}	0.5	850	-	$\text{G}\Omega$
Off-state leakage current	$I_F = 0\text{ mA}$, $V_L = \pm 100\text{ V}$	I_{leak}	-	< 0.25	100	nA
	$I_F = 0\text{ mA}$, $V_L = \pm 400\text{ V}$	I_{leak}	-	0.5	500	nA
Output capacitance	$I_F = 0\text{ mA}$, $V_L = 1\text{ V}$, 1 MHz	C_O	-	44	-	pF
	$I_F = 0\text{ mA}$, $V_L = 50\text{ V}$, 1 MHz	C_O	-	6	-	pF
COUPLER						
Capacitance (input to output)	$V_{IO} = 1\text{ V}$	C_{IO}	-	1.72	-	pF



LH1546AEF series

Pre-PCN

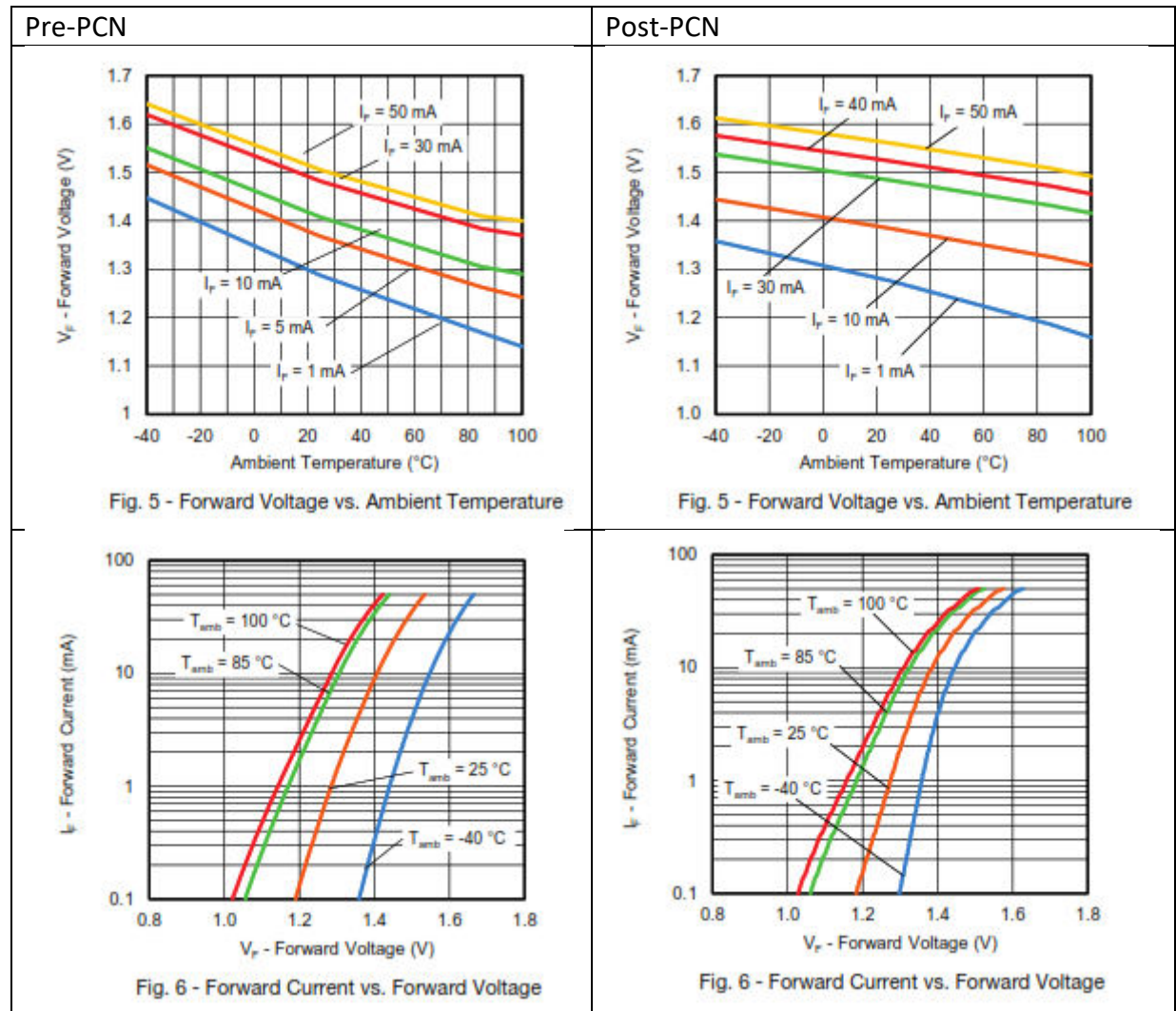
ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
INPUT						
IRE forward current, switch turn-on	$I_L = 100\text{ mA}$, $t = 10\text{ ms}$	I_{Fon}	-	0.3	2	mA
IRE forward current, switch turn-off	$V_L = \pm 350\text{ V}$, $I_L < 1\text{ }\mu\text{A}$	I_{Foff}	0.05	0.2	-	mA
IRE forward voltage	$I_F = 10\text{ mA}$	V_F	-	1.4	1.6	V
OUTPUT						
On-resistance	$I_F = 5\text{ mA}$, $I_L = 50\text{ mA}$	R_{ON}	-	22	27	Ω
Off-resistance	$I_F = 0\text{ mA}$, $V_L = \pm 100\text{ V}$	R_{OFF}	0.5	850	-	$\text{G}\Omega$
Off-state leakage current	$I_F = 0\text{ mA}$, $V_L = \pm 100\text{ V}$	I_{leak}	-	< 1	200	nA
	$I_F = 0\text{ mA}$, $V_L = \pm 350\text{ V}$	I_{leak}	-	-	1	μA
Output capacitance	$I_F = 0\text{ mA}$, $V_L = 1\text{ V}$, 1 MHz	C_O	-	39	-	pF
	$I_F = 0\text{ mA}$, $V_L = 50\text{ V}$, 1 MHz	C_O	-	6	-	pF
COUPLER						
Capacitance (input to output)	$V_{IO} = 1\text{ V}$	C_{IO}	-	0.6	-	pF

Post-PCN

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
INPUT						
IRE forward current, switch turn-on	$I_L = 100\text{ mA}$, $t = 10\text{ ms}$	I_{Fon}	-	0.3	2	mA
IRE forward current, switch turn-off	$V_L = \pm 350\text{ V}$, $I_L < 1\text{ }\mu\text{A}$	I_{Foff}	0.05	0.2	-	mA
IRE forward voltage	$I_F = 10\text{ mA}$	V_F	-	1.4	1.6	V
OUTPUT						
On-resistance	$I_F = 5\text{ mA}$, $I_L = 50\text{ mA}$	R_{ON}	-	22	27	Ω
Off-resistance	$I_F = 0\text{ mA}$, $V_L = \pm 100\text{ V}$	R_{OFF}	0.5	850	-	$\text{G}\Omega$
Off-state leakage current	$I_F = 0\text{ mA}$, $V_L = \pm 100\text{ V}$	I_{leak}	-	< 0.25	200	nA
	$I_F = 0\text{ mA}$, $V_L = \pm 350\text{ V}$	I_{leak}	-	0.5	1	μA
Output capacitance	$I_F = 0\text{ mA}$, $V_L = 1\text{ V}$, 1 MHz	C_O	-	44	-	pF
	$I_F = 0\text{ mA}$, $V_L = 50\text{ V}$, 1 MHz	C_O	-	6	-	pF
COUPLER						
Capacitance (input to output)	$V_{IO} = 1\text{ V}$	C_{IO}	-	1.72	-	pF



VOR1142, LH1546AEF series



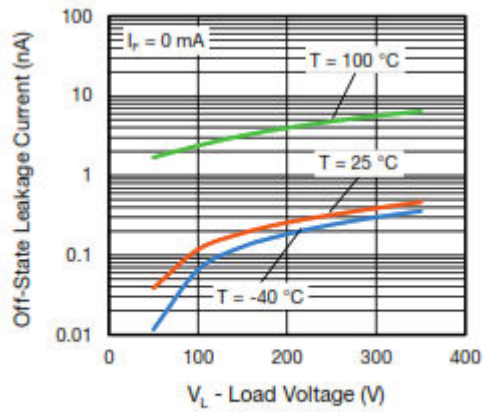


Fig. 10 - Off-State Leakage Current vs. Load Voltage

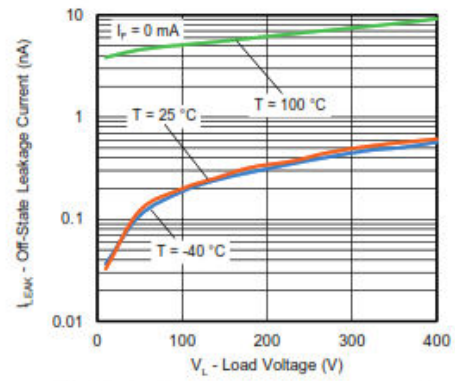


Fig. 10 - Off-State Leakage Current vs. Load Voltage

For any questions, please reach out to optocoupleranswers@vishay.com.

Vishay Material Code	Customer Material	Location
LH1546AEF	VOPLH1546AEF	Ft Worth
LH1546AEFTR	VOPLH1546AEFTR	Ft Worth
VOR1142M4	VOPVOR1142M4	Ft Worth
LH1546AEFTR	VOPLH1546AEFTR	Maisach Gernlinden
VOR1142M4T	VOPVOR1142M4T	Maisach Gernlinden
LH1546AEFTR	LH1546AEFTR	Singapore
VOR1142M4T	VOR1142M4T	Singapore
LH1546AEFTR	VSNLH1546AEFTR	Maisach Gernlinden
VOR1142M4T	VSNVOR1142M4T	Maisach Gernlinden