



Vishay Xi'an DPAK and IPAK Alternative Green Mold Compound Qualification for HVM

DESCRIPTION OF CHANGE: Vishay Siliconix announces the qualification of green mold compound SG-8300H for commercial High Voltage MOSFET products manufactured in DPAK and IPAK packages at Vishay's factory in Xi'an, China.

CLASSIFICATION OF CHANGE: Change in direct material

REASON FOR CHANGE: Alternative direct material for HVM DPAK and IPAK products; manufacturing flexibility.

EXPECTED INFLUENCE ON QUALITY/RELIABILITY/PERFORMANCE: There will be no effect on quality, reliability, or electrical performance. There will be no changes to data sheets specifications.

PRODUCT CATEGORY: Commercial High Voltage Power MOSFETs

PART NUMBERS/SERIES/FAMILIES AFFECTED: See page 2 and 3 of this PCN for a list of current active part numbers affected by this PCN. Please note that, except for D and E series parts, part numbers affected include those with prefix: IRFU, SIHFU, IRFR, IRLR, SIHFR and SIHLR.

Additional High Voltage MOSFET part numbers released to production at Xi'an in DPAK and IPAK packages after the effective date of this PCN will be covered by this announcement.

VISHAY BRAND(s): Vishay Siliconix

TIME SCHEDULE: Shipments from Vishay Xi'an will start in January, 2014.

SAMPLE AVAILABILITY: Samples of the parts listed on page 2 will be available in Q4, 2013. Please contact your regional Vishay Sales office to place sample orders.

PRODUCT IDENTIFICATION: DPAK and IPAK products manufactured in Vishay Xi'an will have part marking in the form of **Y41z ab** where the **Y** is the factory designator for Vishay Xi'an.

QUALIFICATION DATA: Qualification results are summarized on page 4.

This PCN is considered approved, without further notification, unless we receive specific customer concerns before January 6, 2014 or as specified by contract.

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ONE OF THE WORLD'S LARGEST MANUFACTURERS OF DISCRETE SEMICONDUCTORS AND PASSIVE COMPONENT

Procedure #



Product Change Notification



Product Group: Vishay Siliconix/ October 4, 2013/PCN-SIL-0532013 Rev 0

Sample List

IPAK	IRFU1N60APBF
IPAK	IRFU420PBF
IPAK	IRFUC20PBF

DPAK	IRFR420TRPBF
DPAK	IRFR210TRPBF
DPAK	IRFR430ATRLPBF
DPAK	IRFRC20TRPBF

Part Number List HVM IPAK

IPAK			
IRFU014PBF	IRFU9010PBF	SIHFU014-GE3	SIHFU9010-GE3
IRFU020PBF	IRFU9014PBF	SIHFU020-GE3	SIHFU9014-GE3
IRFU024PBF	IRFU9020PBF	SIHFU024-GE3	SIHFU9020-GE3
IRFU110PBF	IRFU9024PBF	SIHFU110-GE3	SIHFU9024-GE3
IRFU120PBF	IRFU9110PBF	SIHFU120-GE3	SIHFU9110-GE3
IRFU1N60APBF	IRFU9120PBF	SIHFU1N60A-GE3	SIHFU9120-GE3
IRFU210PBF	IRFU9210PBF	SIHFU210-GE3	SIHFU9210-GE3
IRFU214PBF	IRFU9214PBF	SIHFU214-GE3	SIHFU9214-GE3
IRFU220PBF	IRFU9220PBF	SIHFU220-GE3	SIHFU9220-GE3
IRFU224PBF	IRFU9310PBF	SIHFU224-GE3	SIHFU9310-GE3
IRFU310PBF	IRFUC20PBF	SIHFU310-GE3	SIHFUC20-GE3
IRFU320PBF	IRLU014PBF	SIHFU320-GE3	SIHLU014-GE3
IRFU420APBF	IRLU024PBF	SIHFU420A-GE3	SIHLU024-GE3
IRFU420PBF	IRLU110PBF	SIHFU420-GE3	SIHLU110-GE3
IRFU430APBF	IRLU120PBF	SIHFU430A-GE3	SIHLU120-GE3

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Part Number List HVM DPAK

DPAK			
64-4011PBF	IRFR420PBF	IRLR110TRLPBF	SIHFR420TRL-GE3
64-4012PBF	IRFR420TRLPBF	IRLR110TRPBF	SIHFR420TRR-GE3
94-2424PBF	IRFR420TRPBF	IRLR120PBF	SIHFR430A-GE3
IRFR010PBF	IRFR420TRRPBF	IRLR120TRLPBF	SIHFR430ATR-GE3
IRFR010TRLPBF	IRFR430APBF	IRLR120TRPBF	SIHFR430ATRL-GE3
IRFR010TRPBF	IRFR430ATRLPBF	IRLR120TRRPBF	SIHFR430ATRR-GE3
IRFR014PBF	IRFR430ATRPBF	SIHFR010-GE3	SIHFR9010-GE3
IRFR014TRLPBF	IRFR430ATRRPBF	SIHFR010TR-GE3	SIHFR9010TR-GE3
IRFR014TRPBF	IRFR9010PBF	SIHFR010TRL-GE3	SIHFR9010TRL-GE3
IRFR020PBF	IRFR9010TRLPBF	SIHFR014-GE3	SIHFR9014-GE3
IRFR020TRPBF	IRFR9010TRPBF	SIHFR014TR-GE3	SIHFR9014TR-GE3
IRFR024PBF	IRFR9014PBF	SIHFR014TRL-GE3	SIHFR9014TRL-GE3
IRFR024TRLPBF	IRFR9014TRLPBF	SIHFR020-GE3	SIHFR9020-GE3
IRFR024TRPBF	IRFR9014TRPBF	SIHFR020TR-GE3	SIHFR9020TR-GE3
IRFR110PBF	IRFR9020PBF	SIHFR024-GE3	SIHFR9020TRL-GE3
IRFR110TRLPBF	IRFR9020TRLPBF	SIHFR024TR-GE3	SIHFR9024-GE3
IRFR110TRPBF	IRFR9020TRPBF	SIHFR024TRL-GE3	SIHFR9024TR-GE3
IRFR110TRRPBF	IRFR9024PBF	SIHFR110-GE3	SIHFR9024TRL-GE3
IRFR120PBF	IRFR9024TRLPBF	SIHFR110TR-GE3	SIHFR9024TRR-GE3
IRFR120TRLPBF	IRFR9024TRPBF	SIHFR110TRL-GE3	SIHFR9110-GE3
IRFR120TRPBF	IRFR9024TRRPBF	SIHFR110TRR-GE3	SIHFR9110TR-GE3
IRFR120TRRPBF	IRFR9110PBF	SIHFR120-GE3	SIHFR9110TRL-GE3
IRFR1N60APBF	IRFR9110TRLPBF	SIHFR120TR-GE3	SIHFR9120-GE3
IRFR1N60ATRLPBF	IRFR9110TRPBF	SIHFR120TRL-GE3	SIHFR9120TR-GE3
IRFR1N60ATRPBF	IRFR9110TRRPBF	SIHFR120TRR-GE3	SIHFR9120TRL-GE3
IRFR1N60ATRRPBF	IRFR9120PBF	SIHFR1N60A-GE3	SIHFR9210-GE3
IRFR210PBF	IRFR9120TRLPBF	SIHFR1N60ATR-GE3	SIHFR9210TR-GE3
IRFR210TRLPBF	IRFR9120TRPBF	SIHFR1N60ATRL-GE3	SIHFR9214-GE3
IRFR210TRPBF	IRFR9210PBF	SIHFR1N60ATRR-GE3	SIHFR9214TR-GE3
IRFR210TRRPBF	IRFR9210TRLPBF	SIHFR210-GE3	SIHFR9214TRL-GE3
IRFR214PBF	IRFR9210TRPBF	SIHFR210TRL-GE3	SIHFR9220-GE3
IRFR214TRLPBF	IRFR9214PBF	SIHFR210TRR-GE3	SIHFR9220TR-GE3
IRFR214TRPBF	IRFR9214TRLPBF	SIHFR214-GE3	SIHFR9220TRL-GE3
IRFR214TRRPBF	IRFR9214TRPBF	SIHFR214TR-GE3	SIHFR9220TRR-GE3
IRFR220PBF	IRFR9220PBF	SIHFR214TRL-GE3	SIHFR9310-GE3
IRFR220TRLPBF	IRFR9220TRLPBF	SIHFR214TRR-GE3	SIHFR9310TR-GE3
IRFR220TRPBF	IRFR9220TRPBF	SIHFR220-GE3	SIHFR9310TRL-GE3
IRFR220TRRPBF	IRFR9220TRRPBF	SIHFR220TRL-GE3	SIHFR9310TRR-GE3
IRFR224PBF	IRFR9310PBF	SIHFR224-GE3	SIHFRC20-GE3
IRFR224TRLPBF	IRFR9310TRLPBF	SIHFR224TR-GE3	SIHFRC20TR-GE3
IRFR224TRPBF	IRFR9310TRPBF	SIHFR224TRL-GE3	SIHFRC20TRL-GE3
IRFR224TRRPBF	IRFR9310TRRPBF	SIHFR310-GE3	SIHFRC20TRR-GE3
IRFR310PBF	IRFRC20PBF	SIHFR310TR-GE3	SIHLR014-GE3
IRFR310TRLPBF	IRFRC20TRLPBF	SIHFR310TRL-GE3	SIHLR014TRL-GE3
IRFR310TRPBF	IRFRC20TRPBF	SIHFR310TRR-GE3	SIHLR024TR-GE3
IRFR310TRRPBF	IRFRC20TRRPBF	SIHFR320-GE3	SIHLR024TRL-GE3
IRFR320PBF	IRLR014PBF	SIHFR320TR-GE3	SIHLR110-GE3
IRFR320TRLPBF	IRLR014TRLPBF	SIHFR320TRL-GE3	SIHLR110TR-GE3
IRFR320TRPBF	IRLR014TRPBF	SIHFR420A-GE3	SIHLR120-GE3
IRFR320TRRPBF	IRLR024PBF	SIHFR420ATR-GE3	SIHLR120TR-GE3
IRFR420APBF	IRLR024TRLPBF	SIHFR420ATRL-GE3	SIHLR120TRL-GE3
IRFR420ATRLPBF	IRLR024TRPBF	SIHFR420-GE3	SIHLR120TRR-GE3
IRFR420ATRPBF	IRLR110PBF	SIHFR420TR-GE3	

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Qualification Results

Qualification test	Conditions	# of Lots, # of samples per lot	Time Scale Hours/Cycles	Results: samples tested/# of failures	Comments
Visual Inspection	N/A	All Lots	0 hr		
1a. Solder Reflow Preconditioning	168hrs 85/85 3 cyc@ 260°C max				This test shall apply to test 3 to 5
1. HTRB	Ta = 150°C Vds = 80% rating of Vds	3 Lots, 77 samples per lot	1000 Hours	240/0	
2. HTGB	Ta = 150°C Vgs = 100% rating of Vgs	3 Lots, 77 samples per lot	1000 Hours	240/0	
3. Temperature Cycling	-65°C to +150°C air to air	3 Lots, 80 samples per lot	1000 Cycles	240/0	
4. HAST	130 °C, 85%RH, Vds = 80%Vds, 42V max	3 Lots, 80 samples per lot	100 Hours	240/0	
5. Pressure Pot	+121°C, 15 PSIG	3 Lots, 80 samples per lot	96 Hours	240/0	
6. Solder Dunk	260 ± 5 °C, 10 sec in solder, 1 min in air	1 Lot, 50 samples	Pre/post	50/0	
7. MSL		2 Lot, 11 samples	Pre/post	22/0	
8. Power Cycle	ΔTj=100 °C (not to exceed absolute maximum ratings)	1 Lot, 80 samples	15,000 cycles	80/0	

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