Product Termination Notification

Product Group: Vishay Siliconix/Sep 22, 2014/**PCN- SIL-0812014 Rev1**

End of Life Notification

DESCRIPTION OF CHANGE: The affected part numbers listed in this notification are not our focus products and are being discontinued. As replacements, we are recommending products from our SQ series of automotive qualified Mosfets that are manufactured using our preferred 300M cell automotive qualified process technology at Vishay's wafer Fab located at Fraunhoferstraße 1, 25524 Itzehoe, Germany (Vishay Siliconix Itzehoe GmbH or VSIG). VSIG has been an automotive Fab with ISO14001 and TS16949 certifications for more than 10 years.

The recommended replacement products will have slightly different electrical characteristics but have been identified as a suitable replacements for the existing products.

Production of the affected parts from Santa Clara Fab and Global Foundries will be terminated per the time schedule in this notification and last time buy orders must be received within the specified timeframe.

CLASSIFICATION OF CHANGE: End of life

REASON FOR CHANGE: Closure of Fab at Santa Clara and Global Foundries

EXPECTED INFLUENCE ON QUALITY/RELIABILTY/PERFORMANCE: Improvement

PRODUCT CATAGORY: Automotive MOSFETs

VISHAY PART NUMBERS AFFECTED: Affected and replacement part numbers are listed on the following page

VISHAY BRAND(s): Vishay-Siliconix

QUALIFICATION DATA: Replacement products are manufactured using 300M cell process technology which has been AEC Q101 qualified. Please refer to the subsequent pages to see summary of qualification report for the lead 300M product. Qualification report for individual part type will be provided in PPAP and upon request.

SAMPLE AVAILABILITY: Schedule of availability of qualified samples is listed on the following page. For samples, please email automos.pcn@vishay.com with subject PCN-SIL-0812014 and include date by which samples are needed, required quantity, ship-to address and contact information including phone number.

TIME SCHEDULE: Last time buy orders are required by 31-Dec-2014 for parts manufactured at Global Foundries. For parts manufactured at Santa Clara Fab, last time buy order dates are listed for each part number on the following page. Last time ship dates are the same for both Global Foundries and Santa Clara Fab material.

ISSUED BY: Shishir Rai, Product Marketing Manager (E-mail: Shishir.Rai@Vishay.com)

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VISHAY PART NUMBERS AFFECTED:

Affected Vishay Part Number	Replacement Part Number	Qualified Sample Availability Month	Last Time Buy Date (for Santa Clara Fab only)	Last Time Ship Date
SQM110N06-04L-GE3	SQM120N06-3m5L-GE3	Available	30-Mar-15	30-Sep-15
SY2302ADS-T1-E3	SQ2310ES-T1-GE3	Available	30-Mar-15	30-Sep-15
SY2312DS-T1-E3	SQ2310ES-T1-GE3	Available	30-Mar-15	30-Sep-15
SY4936ADY-T1-E3	SQ4940AEY-T1-GE3	Available	30-Mar-15	30-Sep-15
SYM110N06-04L-E3	SQM120N06-3m5L-GE3	Available	30-Mar-15	30-Sep-15
SQD50N04-5M0-GE3	SQD100N04-3M6-GE3	Sep-14	30-Mar-15	30-Sep-15
SQD50N02-04L-T4GE3	SQD100N02-3M5L-T4GE3	Oct-14	30-Apr-15	30-Oct-15
SYD50N02-04P-E3	SQD100N02-3M5L-GE3	Oct-14	30-Apr-15	30-Oct-15
SYD50N02-04P-T4-E3	SQD100N02-3M5L-T4GE3	Oct-14	30-Apr-15	30-Oct-15
SQ3418EEV-T1-GE3	SQ3418AEEV-T1-GE3	Nov-14	30-May-15	30-Nov-15
SYD50N04-07L-E3	SQD50N04-5m6L-GE3	Nov-14	30-May-15	30-Nov-15
SQJ912EP-T1-GE3	SQJ912AEP-T1-GE3	Jan-15	30-Jun-15	30-Dec-15

QUALIFICATION REPORT:

Qualification report for lead product SQM120N04-1M7L-GE3 manufactured using 300M process technology at VSIG Fab is provided in subsequent pages. Qualification report for the replacement parts listed above will be provided in PPAP and upon request.

Production Part Approval - Environmental Test Summary

Supplier:	**Vishay Siliconix**	**General Specification:**	**AEC-Q101**
Supplier Part Number:	**SQM120N04-1M7L-GE3**	**Assembly Site:**	**Kaohsiung, Taiwan ROC**
Process Technology:	**300M Cell N-Channel G4**	**Fab Site:**	**VSIG, Itzehoe Germany**

Item	Test	Test Conditions	# of Lots	S.S.	# Failed	Additional Requirements	Remarks
1	Pre- and Post Stress Electrical Test		*	All	0		
2	Pre-conditioning: Performed on surface mount devices (SMDs) prior to Temp Cycle, Autoclave, HAST, Power Cycle stresses only	J-STD-020C	*	All	0	@260 C	
3	External Visual: Inspect device construction, marking and workmanship. Electrical test not required.	Electricals per drawing	*	All	0		
4	Parametric Verification		3	30	0		Evaluation 1. 2. 3.
5	High Temperature Reverse Bias (**HTRB**): 1000 hours max rated junction temperature specified in the user/supplier specification with device reverse biased to 100% of maximum breakdown voltage specified or max junction temperature to avoid thermal runaway. TEST before, at 500 hours, and 1000 hours. JESD22 A108	175C 1000 HRS	1	77	0	DEVICE SPECIFIC:	Evaluation 1. 1380274 2. 3.
6	High Temperature Gate Bias (**HTGB**): 1000 hours at Ta = device maximum rated junction temperature with gate biased at 100% of maximum gate voltage rating indicated in the detail specification with device OFF. TEST before, at 500 hours, and 1000 hours. JESD22 A108	175C 1000 HRS	1	77	0	DEVICE SPECIFIC:	Evaluation 1. 1380274 2. 3.
7	Temperature Cycling: JESD22 A-104, Air to air. (See Reliability Product Data Summary):	1000CYC -65C ~ 150C	1	77	0	DEVICE SPECIFIC:	Evaluation 1. 1380274 2. 3.
8	Autoclave (Pressure Pot)	Ta = 121C, RH = 100%, 15psig, 96 hrs: Test before and after AC.	1	77	0	DEVICE SPECIFIC:	Evaluation 1. 1380274 2. 3.
9 alt	HAST	130C, 85% RH, 100 HRS	1	77	0	DEVICE SPECIFIC:	Evaluation 1. 1380274 2. 3.
10	Intermittent Operational Life (Power Cycle) Delta Tj = 100C	8572 CYC	1	77	0	DEVICE SPECIFIC:	Evaluation 1. 1380274 2. 3.

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Supplier:	**Vishay Siliconix**	**General Specification:**	**AEC-Q101**
Supplier Part Number:	**SQM120N04-1M7L-GE3**	**Assembly Site:**	**Kaohsiung, Taiwan ROC**
Process Technology:	**300M Cell N-Channel G4**	**Fab Site:**	**VSIG, Itzehoe Germany**

Item	Test	Test Conditions	# of Lots	S.S.	# Failed	Additional Requirements	Remarks
11	ESD Characterization - NOTE: Unless protected by internal ESD-specific protection circuitry, MOSFETs only have intrinsic protection that is dependent on the size of die and other environmental and physical factors, making them very sensitive to potential ESD damage and industry standard precautions should be taken not to expose them to any ESD. Due to the small size of MOSFET packages, these devices are generally not affected by the Charged Device Model, and we therefore substitute Machine Model testing.	Human Model	1	10	0	Passed 7.00KV MIL-STD-883D	Evaluation 1. 1340321
		Machine Model	1	10	0	Passed 1.30KV MIL-STD-883D	
12	Destructive Physical Analysis	AEC-Q101-004 Section 4	1	2X2	0		Evaluation 1. 1340321
13	Physical Dimensions: Verify physical dimensions to the applicable user device packaging specification for dimensions and tolerances.	Siliconix Print Dimensions	N/A	N/A	N/A		See PPAP
14	Termianl Strength		N/A	N/A	N/A		SMD Device
15	Resistance to Solvent		N/A	N/A	N/A		Laser Marked
16	Constant Acceleration		N/A	N/A	N/A		SMD Device
17	Vibration Variable Frequency		N/A	N/A	N/A		SMD Device
18	Mechanical Shock		N/A	N/A	N/A		SMD Device
19	Hermiticity		N/A	N/A	N/A		SMD Device
20	Resistance to Solder Heat (Solder Dunk)	JESD22 B-106-A, 260C, 10sec. Test before and after RSH. SMD devices shall be fully submerged during test	1	50	0	DEVICE SPECIFIC:	Evaluation 1. 1380274 2. 3.
21	Solderability	Pb-Free - JESD201	1	15	0	DEVICE SPECIFIC:	Evaluation 1. 1380274 2. 3.
22	Thermal Resistance	JESD24-3	1	10	0	DEVICE SPECIFIC:	Evaluation 1. 1440135 2. 3.
23	Wire Bond Strength	MIL-STD-750 Method 2037	1	40	0	DEVICE SPECIFIC:	Evaluation 1. 1380274 2. 3.
24	Bond Shear	AEC-Q101-003	N/A	N/A	N/A	Periodic sampling on production units	See Cpk data in PPAP

Production Part Approval - Environmental Test Summary

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Supplier Part Number:	**SQM120N04-1M7L-GE3**	**Assembly Site:**	**Kaohsiung, Taiwan ROC**
Process Technology:	**300M Cell N-Channel G4**	**Fab Site:**	**VSIG, Itzehoe Germany**

Item	Test	Test Conditions	# of Lots	S.S.	# Failed	Additional Requirements	Remarks
25	Die Shear	MIL-STD-750 Method 2017	1	10	0	DEVICE SPECIFIC:	Evaluation 1. 1380274 2. 3.
26	UIS Testing	Non-destructive mode	100%	100%	0		100% tested at Final Test
27	Dielectric Integrity	Non-destructive mode	100%	100%	0		100% tested at Final Test

Note: * = Samples taken from many lots

Prepared by: Julan Chen
Reliability Engineer 5/16/2014

Approved by: Arthur
Director of Reliability 5/16/2014