



Product Change Notification



Product Group: Vishay Siliconix/Sep 22, 2014/PCN- SIL-0402014 Rev3

Fab Site Transfer

DESCRIPTION OF CHANGE: For the 90M cell products listed in this notification we are changing the Fab site from Santa Clara, California, USA to Vishay Siliconix Itzehoe GmbH (VSIG) located at Fraunhoferstraße 1, 25524 Itzehoe, Germany. VSIG has been an automotive Fab with ISO14001 and TS16949 certifications for more than 10 years.

No changes have been made to the silicon process technology, wafer test, assembly process and final test. ***Production of the affected part from Santa Clara Fab 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: Fab Site Transfer

REASON FOR CHANGE: Closure of Santa Clara Fab

EXPECTED INFLUENCE ON QUALITY/RELIABILITY/PERFORMANCE: None

PRODUCT CATEGORY: Automotive MOSFETs

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

VISHAY BRAND(s): Vishay-Siliconix

QUALIFICATION DATA: All products listed in this notification are manufactured using 90M cell process technology which is AEC Q101 qualified. Please refer to the subsequent pages to see summary of qualification report for the lead 90M product from VSIG Fab. 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-0402014 and include date by which samples are needed, required quantity, ship-to address and contact information including phone number.

TIME SCHEDULE: Last time buy and last time ship order dates are listed for each part number on the following page.

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

For further information, please contact your regional Vishay office.

The Americas
Vishay Americas
2201 Laurelwood Road
Santa Clara, Ca 95054
T: 408-988-8000
F: 408-567-8500

Europe
Vishay Electronic GmbH
Geheimrat-Rosenthal-Strasse 100
D-95100
Selb, Germany
T: 49-9287-71 0
F: 49-9287-70435

Asia
Vishay Intertechnology Asia Pte. Ltd
37A Tampines Street 92
#07-00 Keppel Building
Singapore 528886
T: 65-6788-6668
F: 65-6788-0988

Vishay Intertechnology, Inc.

Corporate Headquarters 63 Lincoln Highway, Malvern, PA 19355-2143 U.S.A. Phone (610) 644-1300 Fax (610) 296-0657 www.vishay.com

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



Product Change Notification



Product Group: Vishay Siliconix/Sep 22, 2014/PCN- SIL-0402014 Rev3

VISHAY PART NUMBERS AFFECTED:

Affected Vishay Part Number	Qualified Sample Availability Month	Last Time Buy Date	Last Time Ship Date
SQD50P03-07-T4-GE3	Available	30-Mar-15	30-Sep-15
SQJ463EP-T1-GE3	Available	30-Mar-15	30-Sep-15
SQC50P08-25LKGD	Available	30-Mar-15	30-Sep-15
SQJ951EP-T1-GE3	Available	30-Apr-15	30-Oct-15
SQS423EN-T1-GE3	Available	30-Apr-15	30-Oct-15
SQ2351ES-T1-GE3	Jan-15	30-May-15	30-Nov-15
SQ3481EV-T1-GE3	Jan-15	30-May-15	30-Nov-15
SQ7415AEN-T1-GE3	Jan-15	30-May-15	30-Nov-15
SQD19P06-60L-GE3	Available	30-May-15	30-Nov-15
SQS401EN-T1-GE3	Available	30-May-15	30-Nov-15
SQ1431EH-T1-GE3	Available	30-Jun-15	30-Dec-15
SQ2301ES-T1-GE3	Jan-15	30-Jun-15	30-Dec-15
SQ2303ES-T1-GE3	Jan-15	30-Jun-15	30-Dec-15
SQ2309BKGD	Available	30-Jun-15	30-Dec-15
SQ2309ES-T1-GE3	Available	30-Jun-15	30-Dec-15
SQ2325ES-T1-GE3	Feb-15	30-Jun-15	30-Dec-15
SQ4937EY-T1-GE3	Available	30-Jun-15	30-Dec-15
SQD90P04-9M4L-GE3	Jan-15	30-Jun-15	30-Dec-15
SQD90P04-9m4LT4GE3	Jan-15	30-Jun-15	30-Dec-15
SQJ431EP-T1-GE3	Jan-15	30-Jun-15	30-Dec-15
SQD45P03-12-GE3	Jan-15	30-Jun-15	30-Dec-15
SQD45P03-12-T4-GE3	Jan-15	30-Jun-15	30-Dec-15
SQJ461EP-T1-GE3	Jan-15	30-Jun-15	30-Dec-15
SQJ469EP-T1-GE3	Jan-15	30-Jun-15	30-Dec-15
SQ4917EY-T1-GE3	Mar-15	30-Jun-15	30-Dec-15
SQ4949EY-T1-GE3	Mar-15	30-Jun-15	30-Dec-15
SQ2337ES-T1-GE3	Apr-15	30-Jun-15	30-Dec-15

QUALIFICATION REPORT:

Qualification report for lead product SQM120P06-07L-GE3 manufactured using 90M 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.

Vishay Intertechnology, Inc.

Corporate Headquarters 63 Lincoln Highway, Malvern, PA 19355-2143 U.S.A. Phone (610) 644-1300 Fax (610) 296-0657 www.vishay.com

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



Production Part Approval - Environmental Test Summary

Supplier: Supplier Part Number: Process Technology:	Vishay Siliconix SQM120P06-07L-GE3 90M Cell P-Channel G3	General Specification: Assembly Site: Fab Site:	AEC-Q101 Kaohsiung, Taiwan ROC 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 External Visual: Inspect device construction, marking and workmanship. Electrical test not required.	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	DEVICE SPECIFIC:	Evaluation 1. 1440087 2. 1440088 3. 1440089
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. 1380876 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. 1380876 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. 1380876 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. 1380876 2. 3.
9 alt	HAST	130C, 85% RH, 100 HRS	1	77	0	DEVICE SPECIFIC:	Evaluation 1. 1380876 2. 3.



Production Part Approval - Environmental Test Summary

Supplier: Supplier Part Number: Process Technology:	Vishay Siliconix SQM120P06-07L-GE3 90M Cell P-Channel G3	General Specification: Assembly Site: Fab Site:	AEC-Q101 Kaohsiung, Taiwan ROC VSIG, Itzehoe Germany
--	---	--	---

Item	Test	Test Conditions	# of Lots	S.S.	# Failed	Additional Requirements	Remarks
10	Intermittent Operational Life (Power Cycle) Delta Tj = 100C	8,572 CYC	1	77	0	DEVICE SPECIFIC:	Evaluation 1. 1380876 2. 3.
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 1.10KV AEC Q101	Evaluation 1.1440014
		Machine Model	1	10	0	Passed 0.25KV AEC Q101	
12	Destructive Physical Analysis	Cross-section / Cratering, CDF-AEC-Q101-004 Section 4	1	2x2	0		Evaluation 1.1440014
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	Terminal 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	55	0	DEVICE SPECIFIC:	Evaluation 1. 1380876 2. 3.
21	Solderability	Pb-Free - JESD201	1	15	0	DEVICE SPECIFIC:	Evaluation 1. 1380876 2. 3.
22	Thermal Resistance	JESD24-3	1	10	0	DEVICE SPECIFIC:	Evaluation 1. 1440087 2. 3.



Production Part Approval - Environmental Test Summary

Supplier:		Vishay Siliconix		General Specification:		AEC-Q101	
Supplier Part Number:		SQM120P06-07L-GE3		Assembly Site:		Kaohsiung, Taiwan ROC	
Process Technology:		90M Cell P-Channel G3		Fab Site:		VSiG, Itzehoe Germany	

Item	Test	Test Conditions	# of Lots	S.S.	# Failed	Additional Requirements	Remarks
23	Wire Bond Strength	MIL-STD-750 Method 2037	3	40	0	GENERIC	Evaluation 1. 2. 3.
24	Bond Shear	AEC-Q101-003	3	40	0	GENERIC	Evaluation 1. 2. 3.
25	Die Shear	MIL-STD-750 Method 2017	N/A	N/A	N/A	GENERIC	See PPAP
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: Julian Chen Reliability Engineer	5/16/2014
--	-----------

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