



Conversion to Cu Wire – SQS423EN

DESCRIPTION OF CHANGE: The affected part number listed in this notification will be converted to a Copper wire material set. The new ordering code is SQS423ENW-T1_GE3, which has the exact same product performance and fit as SQS423EN-T1_GE3. In addition, the SQS423ENW-T1_GE3 package also includes pins with wet-able flanks. This feature promotes improved solder coverage and solder fillet shape at the lead tips. The outer most dimensions are unchanged and the same PCB land pattern is required. There will be no change to the wafer fab or assembly location. There will be no changes to the parameters on the datasheet (reference: SQS423ENW Doc #75549, Rev.A) - see included datasheet comparison for details.

REASON FOR CHANGE: Standardization of materials

EXPECTED INFLUENCE ON QUALITY/RELIABILITY/PERFORMANCE: None

PART NUMBERS/SERIES/FAMILIES AFFECTED: SQS423EN-T1_GE3

VISHAY BRAND(s): Vishay Siliconix

TIME SCHEDULE:

Last Time Buy Date: Tue Jul 27, 2021

Last Time Ship Date: Fri Jan 28, 2022

SAMPLE AVAILABILITY: Qualified samples of replacement product are available immediately

PRODUCT IDENTIFICATION: SQS423ENW-T1_GE3

QUALIFICATION DATA: AEC Q101 qualification data of replacement product is available. Qualification PPAP is available now.

This PCN is considered approved, without further notification, unless we receive specific customer concerns before Tue Jul 27, 2021 or as specified by contract.

ISSUED BY: Lance Gurrola, Lance.Gurrola@vishay.com

For further information, please contact your regional Vishay office.

CONTACT INFORMATION:

Americas

Vishay Siliconix
2565 Junction Ave
San Jose CA United States 95134
business-america@vishay.com
Phone: 4089705799
Fax: 408-970-5799

Europe

VISHAY Europe Sales GmbH
Dr.-Felix-Zandman-Platz 1
Selb Germany 95100
business-europe@vishay.com
Phone: 49 9287 710
Fax: 49 9287 70435

Asia

Vishay Intertechnology Asia Pte. Ltd
37A Tampines Street 92 #07-01
Singapore Singapore 528886
business-asia@Vishay.com
Phone: 65 6788 6668
Fax: 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

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Affected Part Number				Replacement Part Number										
SQS423EN				SQS423ENW										
AEC Q101 Qualified				AEC Q101 Qualified										
Yes				Yes										
Package Type				Package Type										
PPAK 1212-B				PPAK 1212-BW										
Process Technology				Process Technology										
90M cells/in ²				90M cells/in ²										
Bondwire Material				Bondwire Material										
Gold (Au)				Copper (Cu)										
100% Rg & UIS Tested				100% Rg & UIS Tested										
Yes				Yes										
Datasheet Rev				Datasheet Rev										
C				A										
Absolute Maximum Ratings	Symbol	Test Conditions	Limit	Units	Symbol	Test Conditions	Limit	Units	Type of Change	Risk				
Drain-Source Voltage	VDS		-30	V	VDS		-30	V	None	None				
Gate-Source Voltage	VGS		+20	V	VGS		+20	V	None	None				
Continuous Drain Current	ID	TC = 25°C	-16	A	ID	TC = 25°C	-16	A	None	None				
Continuous Drain Current	ID	TC = 125°C	-16	A	ID	TC = 125°C	-16	A	None	None				
Continuous Source Current (Diode Conduction)	IS		-16	A	IS		-16	A	None	None				
Pulsed Drain Current	IDM		-64	A	IDM		-64	A	None	None				
Single Pulse Avalanche Current	IAS	L = 0.1mH	-22	A	IAS	L = 0.1mH	-22	A	None	None				
Single Pulse Avalanche Energy	EAS		24	mJ	EAS		24	mJ	None	None				
Max Power Dissipation	PD	TC = 25°C	62.5	W	PD	TC = 25°C	62.5	W	None	None				
Max Power Dissipation	PD	TC = 125°C	20	W	PD	TC = 125°C	20	W	None	None				
Operating Junction	TJ		-55 to +175	°C	TJ		-55 to +175	°C	None	None				
Thermal Resistance J-A	RthJA	PCB Mount	81	°C/W	RthJA	PCB Mount	81	°C/W	None	None				
Thermal Resistance J-C	RthJC		2.4	°C/W	RthJC		2.4	°C/W	None	None				
Specifications Tj=25°C unless otherwise noted	Symbol	Test Conditions	MIN	TYP	MAX	Units	Symbol	Test Conditions	MIN	TYP	MAX	Units	Type of Change	Risk
Drain-Source Breakdown Voltage	VDS	VGS=0V, ID=250uA	-30			V	VDS	VGS=0V, ID=250uA	-30			V	None	None
Gate-Source Threshold Voltage	VGS(th)	VDS=VGS, ID=250uA	-1.5	-2	-2.5	V	VGS(th)	VDS=VGS, ID=250uA	-1.5	-2	-2.5	V	None	None
Gate-Source Leakage	IGSS	VDS=0V, VGS=±20V			±100	nA	IGSS	VDS=0V, VGS=±20V			±100	nA	None	None
Zero Voltage Drain Current	IDSS	VGS=0V, VDS=30V			-1	uA	IDSS	VGS=0V, VDS=60V			-1	uA	None	None
		VGS=0V, VDS=30V, Tj=125°C			-50	uA		VGS=0V, VDS=60V, Tj=125°C			-50	uA	None	None
		VGS=0V, VDS=30V, Tj=175°C			-150	uA		VGS=0V, VDS=60V, Tj=175°C			-150	uA	None	None
On-State Drain Current	ID(ON)	VGS=10V, VDS=SV	-20			A	ID(ON)	VGS=10V, VDS=5V	-20			A	None	None
		VGS=10V, ID=12A		0.018	0.021	Ω		VGS=10V, ID=8A		0.018	0.021	Ω	None	None
		VGS=10V, ID=12A, Tj=125°C			0.031	Ω		VGS=10V, ID=8A, Tj=125°C			0.031	Ω	None	None
		VGS=10V, ID=12A, Tj=175°C			0.035	Ω		VGS=10V, ID=8A, Tj=175°C			0.035	Ω	None	None
		VGS=4.5V, ID=9A		0.040	0.060	Ω		VGS=4.5V, ID=6A		0.040	0.060	Ω	None	None
Forward Transconductance	gfs	VDS=15V, ID=7A		18		S	gfs	VDS=15V, ID=7A		18		S	None	None
Input Capacitance	Ciss			1565	1975		Ciss			1565	1975		None	None
Output Capacitance	Coss	VGS=0V, VDS=15V, f=1MHz		335	418	pF	Coss	VGS=0V, VDS=25V, f=1MHz		335	418	pF	None	None
Reverse Transfer Capacitance	Crss			240	300		Crss			240	300		None	None
Total Gate Charge	Qg	VGS=4.5V, VDS=15V, ID=10.5A		17	26	nC	Qg	VGS=10V, VDS=20V, ID=2.5A		17	26	nC	None	None
Gate-Source Charge	Qgs			5.9	9		Qgs			5.9	9		None	None
Gate-Drain Charge	Qgd			9.2	14		Qgd			9.2	14		None	None
Gate Resistance	Rg	f=1MHz	1.6	3.43	6	Ω	Rg	f=1MHz	1.6	3.43	6	Ω	None	None
Turn-On Delay Time	td(on)			65	100	ns	td(on)			65	100	ns	None	None
Rise Time	tr	VDD=15V, RL=1.78Ω, ID=8.4A, Vgenn=4.5V, Rg=1Ω		43	65	ns	tr	VDD=20V, RL=14.3Ω, ID=1.4A, Vgenn=10V, Rg=1Ω		43	65	ns	None	None
Turn-Off Delay Time	td(off)			23	34	ns	td(off)			23	34	ns	None	None
Fall Time	tf			15	22	ns	tf			15	22	ns	None	None
Pulsed Source-Drain Current	ISM			-64		A	ISM			-64		A	None	None
Forward Voltage	VSD	I _s =8.8A, VGS=0V	-0.8	-1.2		V	VSD	I _s =8A, VGS=0V	-0.8	-1.2		V	None	None
Body diode reverse recovery time	trr					ns	trr					ns	None	None
Body diode reverse recovery charge	Qrr	I _s =4.4A, di/dt=100A/us				nC	Qrr	I _s =4.4A, di/dt=100A/us				nC	None	None
Reverse recovery fall time	ta					ns	ta					ns	None	None
Reverse recovery rise time	tb					ns	tb					ns	None	None
Body diode peak reverse recovery current	I _{RRM(peak)}					A	I _{RRM(peak)}					A	None	None