

## Product Termination Notification

Product Group: SIL/Tue Aug 24, 2021/PTN-SIL-032-2021-REV-0

## Conversion to Copper (Cu) Wire - SQ7415AEN

**DESCRIPTION OF CHANGE:** The affected part number listed in this notification has been approved for termination. The new ordering code will be SQ7415CENW-T1\_GE3 which offers a closely matched solution and provides some beneficial features compared to the SQ7415AEN-T1\_GE3 / SQ7415AEN-T1\_BE3. The SQ7415CENW-T1\_GE3 offers a Copper wire material set and pins with wet-able flanks. This feature promotes improved solder coverage and solder filet shape at the lead tips. The outer most dimensions are unchanged and the same PCB land pattern is required. There will be no changes to the wafer fab or assembly locations. There will be no changes to the specification limits at final test or to the associated datasheet specifications with the exception of Rg where the maximum value has been tightened from 9 Ohms to 8.3 Ohms (reference: SQ7415AEN Doc #67042, Rev.C) - see included datasheet comparison for details.

**REASON FOR CHANGE:** Standardization of materials

EXPECTED INFLUENCE ON QUALITY/RELIABILTY/PERFORMANCE: None

PART NUMBERS/SERIES/FAMILIES AFFECTED: SQ7415AEN-T1\_GE3, SQ7415AEN-T1\_BE3,

VISHAY BRAND(s): Vishay Siliconix

TIME SCHEDULE:

Last Time Buy Date: Fri Mar 25, 2022 Last Time Ship Date: Mon Sep 26, 2022

SAMPLE AVAILABILITY: Qualified samples of replacement product are available immediately

PRODUCT IDENTIFICATION: SQ7415CENW-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 Fri Mar 18, 2022 or as specified by contract.

ISSUED BY: Lance Gurrola, business-americas@vishay.com

For further information, please contact your regional Vishay office.

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## Vishay Intertechnology, Inc.

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		Affected Part Number	SQ7415AEN						Replacement Part Number	SQ7415CENW						
		AEC Q101 Qualified	Yes						AEC Q101 Qualified	Yes						
		Package Type	PowerPAK 1212-8						Package Type	PowerPAK 1212-8W						
		Process Technology	90M cells/in <sup>2</sup>						Process Technology	90M cells/in <sup>2</sup>						
		100% Rg & UIS Tested	Yes						100% Rg and UIS Tested	Yes						
		Datasheet Rev	c		1				Datasheet Rev	В		1				1
				Units							Units					
Absolute Maxium Ratings	Symbol	Test Conditions	Limit					Symbol	Test Conditions	Limit		1			Type of Change	Risk
Drain-Source Voltage	VDS		-60	V				VDS		-60	V	1			None	None
Gate-Source Voltage	VGS		±20	v				VGS		±20	V	1			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	-11	A				ID	TC = 125°C	-11.5	A	1			None	None
Continuous Source Current (Diode Conduction)	IS		-16	A	-			IS		-16	A	4			None	None
Pulsed Drain Current	IDM		-64	A	-			IDM		-64	A	-			None	None
Single Pulse Avalanche Current	EAS	L = 0.1mH	-23	A mJ	-			IAS	L = 0.1mH	-23	A mJ	4			None	None
Single Pulse Avalanche Energy Max Power Dissipation	PD	TC = 25°C	26	W	-			EAS PD	TC = 25°C	26	W	1			None	None
Max Power Dissipation Max Power Dissipation	PD	TC = 25°C	53	w	1			PD	TC = 25°C TC = 125°C	53	w	ł			None	None
Opetating Junction	TI	1C - 125 C	-55 to +175	°C	1			70	1C = 125 C	-55 to +175	°C	1			None	None
Thermal Resistance J A	RthJA	PCB Mount	-55 10 +175	°C/W	1			RthJA	PCB Mount	-55 10 +175	°c/w	1			None	None
Thermal Resistance J-C	RthJC	PCB Would	2.8	°C/W	-			RthJC	PCB WOULD	2.8	°C/W				None	None
inclinar nearsannea e	probe	1	2.0	5/11	-			Rane	- 1	2.0	5/10	1			inone.	prone
Specifications TJ=25°C unless otherwise noted		Test C	onditions	MIN	ТҮР	мах	Units		Test Co	onditions	MIN	ТҮР	MAX	Units	Type of Change	Risk
Drain-Source Breakdown Voltage	VDS	VGS=0V,	VGS=0V, ID=-250uA				v	VDS	VGS=0V,	ID=-250uA	-60			v	None	None
Gate-Source Threshold Voltage	VGS(th)	VDS=VGS	VDS=VGS, ID=-250uA		-2	-2.5	v	VGS(th)	VDS=VGS,	ID=-250uA	-1.5	-2	-2.5	v	None	None
Gate -Source Leakage	IGSS	VDS=0V,	=0V, VGS=±20V			±100	nA	IGSS	VDS=0V,	VDS=0V, VGS=±20V			±100	nA	None	None
Zero Voltage Drain Current		VGS=0V	VDS=40V			-1	uА		VGS=0V	VDS=60V			-1	uA	None	None
	IDSS	VGS=0V	VDS=40V, Tj=125°C			-50	uA	IDSS	VGS=0V	VDS=60V, Tj=125°C			-50	uA None	None	None
		VGS=0V	VDS=40V, Tj=175°C			-150	uA		VGS=0V	VDS=60V, Tj=125°C			-150	uA	None	None
On-State Drain Current	ID(ON)	VGS=-10V	VDS≤-5V	-15			A	ID(ON)	VGS=-10V	VDS≥-5V	-15			A	None	None
		VGS=-10V	ID=-5.7A		0.050	0.065	Ω		VGS=-10V	ID=-8A		0.050	0.065	Ω	None	None
Drain-Source On-State Resistance RD	RDS(on)	VGS=-10V	ID=-5.7A, Tj=125°C			0.112	Ω	RDS(on)	VGS=-10V	ID=7A, Tj=125°C			0.112	Ω	None	None
	1000(011)	VGS=-10V	ID=-5.7A, Tj=175°C			0.138	Ω	1000(011)	VGS=-10V	ID=7A, Tj=175°C			0.138	Ω	None	None
		VGS=-4.5V	ID=-4.4A		0.070	0.090	Ω		VGS=-4.5V	ID=5A		0.070	0.090	Ω	None	None
Forward Transconductance	gfs	VDS=-15	V, ID=-5.7A		13		s	gfs	VDS=15	V, ID=7A		13		s	None	None
Input Capacitance	Ciss				1108	1385		Ciss				1083	1385		Lower Typical	None
Output Capacitance	Coss	VGS=0V	VDS=-25V, f=1MHz		132	165	pF	Coss	VGS=0V	VDS=-25V, f=1MHz		132	165	pF	None	None
Reverse Transfer Capacitance	Crss				84	105		Crss				80	105		Lower Typical	Very low. Switching speeds are not impacted
Total Gate Charge	Qg	VGS=-10V	VDS=-30V, ID=-5.7A		25.5	38		Qg				25.5	38		None	None
Gate-Source Charge	Qgs				3.6		nC	Qgs	VGS=-10V	VDS=-30V, ID=-5.7A		4.3		nC	Lower	None, Qg is unchanged
Gate-Drain Charge	Qgd				6.7		Qgd				6.4			Higher	None, Qg is unchanged	
Gate Resistance	Rg	f=:	1MHz	3	6	9	Ω	Rg	f=1	MHz	3	5.6	8.3	Ω	Lower	None
Turn-On Delay Time	td(on)	VDD=-30V, RL=30Ω, ID=-1A, Vgen=-10V, Rg=1Ω			9	14		td(on)		-		9	14		None	None
Rise Time	tr				9	14		tr	—			5	10	1	Lower	None
Turn-Off Delay Time	td(off)				37 56 ns td(off)		VDD=-30V, RL=30Ω, ID:	VDD=-30V, RL=30Ω, ID=-1A, Vgen=-10V, Rg=1Ω		39	60	ns	Higher	None		
Fall Time	tf				8	12		tf				8	12	1	None	None
Pulsed Source-Drain Current	ISM			1	1	-64	А	ISM			1		-64	A	None	None
Forward Voltage	VSD	16 CA	If=-6A VGS=0V		-0.85	-64	A V	VSD	12. 04	VGS=0V		-0.85	-64	A V	None	None
-		II=-0A	1104 VGS=0V		-0.85	-1.2		120	II=-0A	vG3=0V	-	-0.85	-1.2		none	none
Body diode reverse recovery time	trr	I <sub>F</sub> =6.5A, di/dt=100A/us					ns	trr						ns		
Body diode reverse recovery charge	Qrr			<u> </u>			nC	Qrr	I <sub>f</sub> =4A, di/	dt=100A/us	<u> </u>			nC		
Reverse recovery fall time	ta	4		<u> </u>			ns	ta	_					ns		
Reverse recovery rise time	tb	r					ns	tb						ns		
Body diode peak reverse recovery current	IRM(REC)	1		1	1	L	A	I <sub>RM(REC)</sub>	1			L	I	A		