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Product Termination Notification



Product Group: SIL/Wed Mar 1, 2023/PTN-SIL-010-2023-REV-0

Conversion to Copper (Cu) Wire – SQ4946AEY-T1_BE3

For further information, please contact your regional Vishay office.

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Description of Change: The affected part number listed in this notification will be converted to a Copper wire material set. The new ordering code will be SQ4946CEY-T1_GE3, which has the exact same product performance, fit and form as SQ4946AEY-T1_BE3. There will be no change to the wafer fab or assembly location. There will be no changes to the parameters on the datasheet (reference: SQ4946CEY Doc #77342, Rev.B) - see included datasheet comparison for details.

Classification of Change: Standardization of materials

Expected Influence on Quality/Reliability/Performance: None

Part Numbers/Series/Families Affected: SQ4946AEY-T1_BE3

Vishay Brand(S): Vishay Siliconix

Time Schedule:

Last Time Buy Date: Fri Mar 24, 2023

Last Time Ship Date: Tue Aug 1, 2023

Sample Availability: Qualified samples of replacement product are available immediately

Product Identification: SQ4946CEY-T1_GE3

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

This PTN is considered approved, without further notification, unless we receive specific customer concerns before Fri Mar 31, 2023 or as specified by contract.

Issued By: Lance Gurrola, business-americas@vishay.com

Affected Part Number		SO8M6AEY		Replacement Part Number		SO8M6CEY										
AEC Q101 Qualified		Yes		AEC Q101 Qualified		Yes										
Package Type		SO-8		Package Type		SO-8										
Process Technology		45M cells/in ²		Process Technology		45M cells/in ²										
100% Rg & US Tested		Yes		100% Rg and US Tested		Yes										
Datasheet Rev		F		Datasheet Rev		B										
Absolute Maximum Ratings		Symbol	Test Conditions	Limit	Units	Symbol	Test Conditions	Limit	Units					Type of Change	Risk	
Drain Source Voltage	VDS			60	V	VDS		60	V					None	None	
Gate Source Voltage	VGS			±20	V	VGS		±20	V					None	None	
Continuous Drain Current	ID	TC = 25°C		7	A	ID	TC = 25°C	7	A					None	None	
Continuous Drain Current (Diode Conduction)	ID	TC = 125°C		4	A	ID	TC = 125°C	4	A					None	None	
Continuous Source Current (Diode Conduction)	IS			3.8	A	IS		3.8	A					None	None	
Pulsed Drain Current	IDM			28	A	IDM		28	A					None	None	
Single Pulse Avalanche Current	IAS	I = 0.1mA		18	A	IAS	I = 0.1mA	18	A					None	None	
Single Pulse Avalanche Energy	EAS			16.2	mJ	EAS		16.2	mJ					None	None	
Max Power Dissipation	PD	TC = 25°C		4	W	PD	TC = 25°C	4	W					None	None	
Max Power Dissipation	PD	TC = 125°C		1.3	W	PD	TC = 125°C	1.3	W					None	None	
Operating Junction	TJ			-55 to +175	°C	TJ		-55 to +175	°C					None	None	
Thermal Resistance J-A	RthJA	PCB Mount		110	°C/W	RthJA	PCB Mount	110	°C/W					None	None	
Thermal Resistance J-C	RthJC			34	°C/W	RthJC		34	°C/W					None	None	
Specifications Tj=25°C unless otherwise noted		Test Conditions		MIN	TYP	MAX	Units	Test Conditions		MIN	TYP	MAX	Units	Type of Change	Risk	
Drain-Source Breakdown Voltage	VDS	VGS=0V, ID=250uA		60			V	VDS	VGS=0V, ID=250uA	60			V	None	None	
Gate-Source Threshold Voltage	VGS(th)	VDS=VGS, ID=250uA	1.5	2	2.5	V	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=60V			1	uA	IDSS	VGS=0V	VDS=60V			1	uA	None	None
		VGS=0V	VDS=60V, Tj=125°C			50	uA		VGS=0V	VDS=60V, Tj=125°C			50	uA	None	None
On State Drain Current	ID(on)	VGS=10V	VDS=30V, Tj=125°C	20			A	ID(on)	VGS=10V	VDS=30V, Tj=125°C	20			A	None	None
		VGS=10V	ID=4.5A	0.033	0.040		Ω		VGS=10V	ID=4.5A	0.033	0.040		Ω	None	None
Drain Source On State Resistance	RDS(on)	VGS=10V	ID=4.5A, Tj=125°C			0.066	Ω	RDS(on)	VGS=10V	ID=4.5A, Tj=125°C			0.066	Ω	None	None
		VGS=10V	ID=4.5A, Tj=175°C			0.081	Ω		VGS=10V	ID=4.5A, Tj=175°C			0.081	Ω	None	None
Forward Transconductance	gfs	VGS=15V, ID=4.5A				15	S	gfs	VGS=15V, ID=4.5A				15	S	None	None
		VGS=15V, ID=4.5A				600	750		VGS=15V, ID=4.5A					600	750	None
Input Capacitance	Ciss			600	750		pF	Ciss					600	750	None	None
Output Capacitance	Coss	VGS=0V	VDS=25V, f=1MHz	110	140		pF	Coss	VGS=0V	VDS=25V, f=1MHz	110	140		pF	None	None
Reverse Transfer Capacitance	Crs			50	60		pF	Crs			50	60		pF	None	None
Total Gate Charge	Qg			11.7	18		nC	Qg			11.7	18		nC	None	None
Gate Source Charge	Qgs	VGS=10V	VDS=30V, ID=5.3A	1.8	2.7		nC	Qgs	VGS=10V	VDS=30V, ID=5.3A	1.8	2.7		nC	None	None
Gate Drain Charge	Qgd			2.8	4.3		nC	Qgd			2.8	4.3		nC	None	None
Gate Resistance	Rg		f=1MHz	1.3		6	Ω	Rg		f=1MHz	1.3		6	Ω	None	None
Turn-On Delay Time	tD(on)			7	11		ns	tD(on)			7	11		ns	None	None
Rise Time	tr			3.3	5		ns	tr			3.3	5		ns	None	None
Turn Off Delay Time	tD(off)			22.4	33.5		ns	tD(off)			22.4	33.5		ns	None	None
Fall Time	tf	VDS=30V, RL=6.8Ω, ID=4.4A, Vgen=10V, Rg=10		2.1	4.2		ns	tf	VDS=30V, RL=6.8Ω, ID=4.4A, Vgen=10V, Rg=10		2.1	4.2		ns	Limit change	None
Pulsed Source-Drain Current	ISM	VDS=30V, RL=6.8Ω, ID=4.4A, Vgen=10V, Rg=10				28	A	ISM	VDS=30V, RL=6.8Ω, ID=4.4A, Vgen=10V, Rg=10				28	A	None	None
Forward Voltage	VSD	I=2A VGS=0V		0.75	1.1		V	VSD	I=2A VGS=0V		0.75	1.1		V	None	None
Body diode reverse recovery time	trr						ns	trr						ns	Improvement	None
Body diode reverse recovery charge	Qrr						nC	Qrr						nC	Improvement	None
Reverse recovery fall time	ta	I=4.4A, di/dt=100A/us					ns	ta	I=4.4A, di/dt=100A/us					ns	Improvement	None
Reverse recovery rise time	tb						ns	tb						ns	Improvement	None
Body diode peak reverse recovery current	IrRM						A	IrRM						A	Improvement	None