


# SAW Components

# Material Data Sheet

<b>Product Class:</b>	SAW Filters – QCC4A SMD technology	
<b>Date</b>	15-January-2011	
IMDS ID if available		
<b>Version:</b>	5.01 (07/2011)	

Product Part (IMDS: semi component)	Material Class (IMDS: Material)	Material (Classification) VDA 231	Substance	TMPS** [wt%]	CAS if applicable	typical mass of material [wt-%]	Traces see 1)
<b>Active Part</b>	Ceramic	3B	SiO <sub>2</sub>	100	14808-60-7	10.2	
	Polymer	2A	Polysilicone	100	63148-62-9	1.0	
<b>Encapsulation</b>	Metal	1C	Co	17.4	7440-48-4	15.8	
			Fe	49.7	7439-89-6		
			Ni	32.9	7440-02-2		
	Ceramic	3B	Al <sub>2</sub> O <sub>3</sub> , glass	67.8	1344-28-1	72.5	
			Cr <sub>2</sub> O <sub>3</sub>	2.9	1308-38-9		
			Co	2.5	7440-48-4		
			Cu	0.3	7440-50-8		
			Au	0.2	7440-57-5		
			Fe	7.4	7439-89-6		
			Mo	0.3	7439-98-7		
			Ni	0.3	7440-02-0		
			SiO <sub>2</sub>	4.0	14808-60-7		
			Ag	2.7	7440-22-4		
			W	10.7	7440-33-7		
<b>Termination</b>	Metal	1C	Au	16.7	7440-57-5	0.3	
		1C	Ni	83.6	7440-02-0		
<b>Internal connection</b>	Metal	1C	Au	100	7440-57-5	0.1	
	Metal	1B	Al	100	7429-90-5	0.1	
<b>Sum in total:</b>						100	

sizes: L x W x H [mm]			Approx. weight [mg]	part numbers	sizes: L x W x H [mm]			Approx. weight [mg]	part numbers	sizes: L x W x H [mm]			Approx. weight [mg]	part numbers
5x3.5x1.5	70	B39*-R 808-H210			5x3.5x1.5	70	B39*-R 820-H210			5x3.5x1.5	70	B39*-R 821-H210		
5x3.5x1.5	70	B39*-R 822-H210			5x3.5x1.5	70	B39*-R 858-H210			5x3.5x1.5	70	B39*-R 860-H210		
5x3.5x1.5	70	B39*-R 860-H210			5x3.5x1.5	70	B39*-R 880-H210							

Range of ordering code (\* -wildcard) for all products within this range



<b>Not part of a Product Class</b>		
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**) typical mass percentage of substance		<b>Important remarks:</b> 1) The declaration limit is 0.1% as defined by IEC PAS 61906. Traces are product parts, substances etc. that are below a percentage of 0.1 % by weight, if not otherwise regulated. 2) This Material Data Sheet contains typical values of the respective products set forth herein. We expressly point out that all values and statements contained herein are based on our best present knowledge and cannot be regarded as binding statements or binding product specifications, unless otherwise explicitly agreed in writing. EPCOS AG AND ITS AFFILIATES HEREBY EXPRESSLY DISCLAIM ANY REPRESENTATION OR WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, WITH REGARD TO THE STATEMENTS AND VALUES CONTAINED HEREIN, INCLUDING BUT NOT LIMITED TO ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR SUITABILITY FOR ANY PURPOSE.
<p><b>The products set forth herein are "RoHS-compatible"</b>. RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8<sup>th</sup>, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.</p> <p><b>RoHS - Exemptions for the Product Class / Product according to Annex III:</b> ( <input checked="" type="checkbox"/> valid <input type="checkbox"/> not valid )</p> <p><input checked="" type="checkbox"/> <b>no exemptions;</b></p> <p><input type="checkbox"/> Exemption 6 (a): Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35 % lead by weight;</p> <p><input type="checkbox"/> Exemption 6 (b): Lead as an alloying element in aluminium containing up to 0,4 % lead by weight;</p> <p><input type="checkbox"/> Exemption 6 (c): Copper alloy containing up to 4 % lead by weight;</p> <p><input type="checkbox"/> Exemption 7 (a): Lead in high melting temperature type solder (i.e. lead-based alloys containing 85 % by weight or more lead);</p> <p><input type="checkbox"/> Exemption 7 (c)-I: Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound;</p> <p><input type="checkbox"/> Exemption 7 (c)-II: Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher;</p> <p><input type="checkbox"/> Exemption 7 (c)-III: Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC;</p> <p><input type="checkbox"/> Exemption 15: Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages;</p> <p><input type="checkbox"/> Other Exemption than above .....</p>		