



## CB1V8 AND CB2V5 SERIES OSCILLATOR

### MATERIAL CONTENT DECLARATION REPORT

CTS Electronic Components follows the Joint Industry Guidelines (JIG) industry consortia recommendations as defined in controlling document JIG-101 for “Green Compliance” Level A and Level B material content restrictions and standardized reporting.

RoHS COMPLIANT      YES  
 RoHS EXEMPTIONS    NO

Level A – Restricted Material/Substance	Material/Substance Category intentionally added or present (Y/N) above threshold level	If Yes, Material Substance Mass (g/PPM)	If Yes, Detailed Material Substance Information
Asbestos	N		
Azo colorants <sup>1</sup>	N		
Cadmium/Cadmium compounds <sup>2</sup>	N		
Hexavalent Chromium / Hexavalent Chromium Compounds <sup>2</sup>	N		
Lead / Lead Compounds <sup>2</sup>	N		
Mercury / Mercury Compounds <sup>2</sup>	N		
Ozone Depleting Substances (CFCs, HCFCs, HBFCs, carbon tetrachloride, etc)	N		
Polybrominated Biphenyls (PBBs) <sup>2</sup>	N		
Polybrominated Diphenylethers (PBDEs) <sup>2</sup>	N		
Polychlorinated Biphenyls (PCBs)	N		
Polychlorinated Naphthalenes (more than 3 chlorine atoms)	N		
Radioactive Substances	N		
Shortchain Chlorinated Paraffins	N		
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	N		
Tributyl Tin Oxide (TBTO)	N		

(1) Applicable to products and subparts that may come into direct contact with human skin.  
 (2) Reported substances per EU RoHS Directive 2002/95/EC.

Level B – Reported Material/Substance	Material/Substance Category intentionally added or present (Y/N) above threshold level	If Yes, Material Substance Mass (g/PPM)	If Yes, Detailed Material Substance Information
Antimony/Antimony Compounds	N		
Arsenic/Arsenic Compounds	N		
Beryllium/Beryllium Compounds	N		
Bismuth/ Bismuth Compounds	N		
Brominated Flame Retardants (other than PBBs or PBDEs)	N		
Nickel/Nickel Compounds (external applications only)	N		
Phthalates	N		
Selenium/Selenium Compounds	N		
Polyvinyl Chloride (PVC)	N		



ELEMENTAL ANALYSIS							
<b>CB1V8 AND CB2V5 SERIES OSCILLATOR</b>		RoHS/Green Compliant  (6/6)	WEIGHT (mg)  171.4970	MSL RATING  1	MAX REFLOW  260°C	<span style="border: 1px solid green; border-radius: 50%; padding: 5px;">e4</span>	
PRODUCT BREAKDOWN	MATERIAL	CAS NUMBER	WEIGHT OF BOM ITEM (g)	% BY WEIGHT (Comp. Item)	mg/UNIT	% BY WEIGHT OF UNIT	REMARKS/SOURCE OF INFORMATION
<b>Package</b>							
Ceramic	Al <sub>2</sub> O <sub>3</sub> (aluminium trioxide)	1344-28-1	0.129445	95.05%	123.0375	71.74%	
Conductors	W (tungsten) [Base]	7440-33-7		4.16%	5.3849	3.14%	
	Ni (nickel) plate [Barrier]	7440-02-0		0.44%	0.5696	0.33%	
	Au (gold) plate [Finish]	7440-57-5		0.35%	0.4531	0.26%	
				<b>100.00%</b>	<b>129.4450</b>		
Seal Ring	Fe (iron) kovar	7439-89-6	0.016755	53.00%	8.8802	5.18%	
	Ni (nickel) Kovar	7440-02-0		29.00%	4.8590	2.83%	
	Co (cobalt) Kovar	7440-48-4		17.00%	2.8484	1.66%	
	Au (gold) plate	7440-57-5		1.00%	0.1676	0.10%	
				<b>100.00%</b>	<b>16.7550</b>		
<b>Sub-Assembly</b>							
Silicon Die (IC)	Si (silicon)	7440-21-3	0.001080	98.50%	1.0638	0.62%	
	Al (aluminium)	7429-90-5		1.50%	0.0162	0.01%	
				<b>100.00%</b>	<b>1.0800</b>		
Die Adhesive	Epoxy Resin (proprietary)		0.000960	21.00%	0.2016	0.12%	
	Aromatic Amine (proprietary)			2.00%	0.0192	0.01%	
	Ag (silver)	7440-22-4		77.00%	0.7392	0.43%	
				<b>100.00%</b>	<b>0.9600</b>		
Die Bond Wire	Au (gold)	7440-57-5	0.000962	100.00%	0.9620	0.56%	
				<b>100.00%</b>	<b>0.9620</b>		
<b>Final Assembly</b>							
Crystal Blank	SiO <sub>2</sub> (silicon dioxide)	14808-60-7	0.006405	41.38%	2.6504	1.55%	
	Cr plate (chromium)	7440-47-3		21.98%	1.4078	0.82%	
	Ag plate (silver)	7440-22-4		36.64%	2.3468	1.37%	
				<b>100.00%</b>	<b>6.4050</b>		
Blank Adhesive	C <sub>8</sub> -C <sub>12</sub> (Aromatic Hydrocarbons)	64742-94-5	0.000380	20.00%	0.0760	0.04%	
	Ag (silver)	7440-22-4		70.00%	0.2660	0.16%	
	Others (proprietary)			10.00%	0.0380	0.02%	
				<b>100.00%</b>	<b>0.3800</b>		
Metal Cover	Fe (iron) kovar	7439-89-6	0.015510	53.00%	8.2203	4.79%	
	Ni (nickel) Kovar	7440-02-0		29.00%	4.4979	2.62%	
	Co (cobalt) Kovar	7440-48-4		17.00%	2.6367	1.54%	
	Ni (nickel) kovar, plate	7440-02-0		1.00%	0.1551	0.09%	
				<b>100.00%</b>	<b>15.5100</b>		
		<b>Totals:</b>	<b>0.171497</b>		<b>171.4970</b>	<b>100.00%</b>	

MATERIALS COMBINED	CAS NUMBER	WEIGHT OF MATERIAL (mg)	% BY WEIGHT OF UNIT
Ag (silver)	7440-22-4	3.3520	1.95%
Al (aluminum)	7429-90-5	0.0162	0.01%
Al <sub>2</sub> O <sub>3</sub> (aluminium trioxide)	1344-28-1	123.0375	71.74%
Aromatic Amine (proprietary)		0.0192	0.01%
Au (gold)	7440-57-5	1.5826	0.92%
C <sub>8</sub> -C <sub>12</sub> (Aromatic Hydrocarbons)	64742-94-5	0.0760	0.04%
Co (cobalt)	7440-48-4	5.4851	3.20%
Cr (chromium)	7440-47-3	1.4078	0.82%
Epoxy Resin (proprietary)		0.2016	0.12%
Fe (iron)	7439-89-6	17.1005	9.97%
Ni (nickel)	7440-02-0	10.0815	5.88%
Others (proprietary)		0.0380	0.02%
Si (silicon)	7440-21-3	1.0638	0.62%
SiO <sub>2</sub> (silicon dioxide)	14808-60-7	2.6504	1.55%
W (tungsten)	7440-33-7	5.3849	3.14%
		171.4970	100.00%