



# Material Declaration Sheet

Vishay Intertechnology

Date

8/7/2019

## Part / Product Family Details

Part / Family Series	RoHS Compliance Status	RoHS Compliance Date Code	Total product Weight (mg)	Value Range	Product Type	Manufacturing Location	Number of Exemptions Used
TNPW0402 e3 series	YES	01-Jan-2007	0.5597317	All R value	Resistor	Vishay BCcomponents Beyschlag GmbH,Rungholtstrasse 8 - 10,Heide, 25746, Germany	0

## Technical Information

Terminal Plating / Grid Array Material	Terminal Base Alloy	JESD-97 Pb-Free Material Code Marking	J-STD-20D MSL Rating	Reflow Peak Process Body Temperature	Reflow Maximum number of cycles	Reflow Max.Time at Peak Temperature (sec)	Soldering Compatibility (SnPb/Pb-Free)
Pure matte tin - Ni barrier	Other	e3	Not Applicable	260 °C	3	40	Backward & Forward

## Material Composition

Homogenous Material Name	Material Classification	Substance Name	CAS number	Weight of Substance (mg)	With respect to Homogenous Material		% with respect to Total Product Weight	RoHS Exemptions Used
					%	ppm		
Ceramic Substrate	Ceramics / glass	Aluminium Oxide	1344-28-1	0.42700	95.51	955065	76.29	0 - None
		Silicon Dioxide	60676-86-0	0.01300	2.91	29077	2.32	0 - None
		Glass former	System	0.00709	1.59	15858	1.27	0 - None
				0.02520				
EP-QD 25	Other duromers	Epoxy resin	25068-38-6	0.01310	52.00	520000	2.34	0 - None
		Pigment	68187-11-1	0.00605	24.00	240000	1.08	0 - None
		Quartz	14808-60-7	0.00605	24.00	240000	1.08	0 - None
				0.00000				
Nickel alloy	Nickel alloys	Chromium	7440-47-3	0.00000	40.91	409091	0.0002	0 - None
		Nickel	7440-02-0	0.00000	59.09	590909	0.0002	0 - None
				0.01871				
Silver inner electrical contact	Other special metals	Palladium	7440-05-3	0.00274	14.64	146446	0.49	0 - None
		Silver	7440-22-4	0.01438	76.86	768573	2.57	0 - None
		Glass	System	0.00159	8.50	84981	0.28	0 - None
				0.06873				
Tin outer electrical contact	Other special metals	Chromium	7440-47-3	0.000001	0.001	13	0.0002	0 - None
		Copper	7440-50-8	0.00001	0.01	76	0.0009	0 - None
		Nickel	7440-02-0	0.02552	37.14	371360	4.56	0 - None
		Tin	7440-31-5	0.04320	62.86	628551	7.72	0 - None

**EU-RoHS Directive-2011/65/EU** MCV of 0.1% by mass (1000 PPM) in homogeneous material for: Lead (Pb), Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE) and MCV of 0.01% by mass cadmium

**Exemption Used** NONE

**Note :-** (i) All information is based on data received from our vendors & subjected to change without prior notice.  
(ii) Substance weight are derived from MSDS.

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