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Standard Thick Film Chip Resistors



FEATURES

- Very small standard size (0.4 mm x 0.2 mm)
- Low tolerance (1 %)
- Material categorization:
 For definitions of compliance please see www.vishay.com/doc?99912



STANDARD ELECTRICAL SPECIFICATIONS								
ТҮРЕ	CASE SIZE IMPERIAL	CASE SIZE METRIC	POWER RATING P ₇₀ W	LIMITING ELEMENT VOLTAGE U _{max.} AC _{RMS} /DC V	TEMPERATURE COEFFICIENT ppm/K	TOLERANCE %	RESISTANCE RANGE Ω	SERIES
CRCW01005	01005	RR0402M	0.031	15	± 250	± 1	- 10.0 to 1M	E24; E96
						± 2, ± 5		E24
					-200/+600	± 1	1.0 to 9.76	E24; E96
						± 2, ± 5	1.0 to 9.1	E24
			Zero-Ohm-Resistor: $R_{\text{max.}} = 50 \text{ m}\Omega$, $I_{\text{max.}} = 0.5 \text{ A}$					

Notes

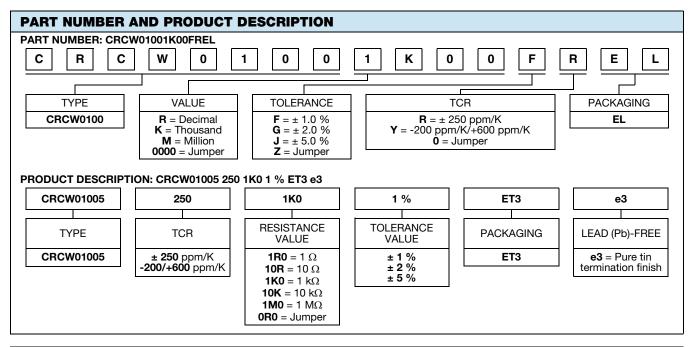
- These resistors do not feature a limited lifetime when operated within the permissible limits. However, resistance vale drift increasing over
 operating time may result in exceeding a limit acceptable to the specific application, thereby establishing a functional lifetime.
- · Power rating depends on the max. temperature at the solder point, the component placement density and the substrate material.

TECHNICAL SPECIFICATIONS						
PARAMETER	UNIT	CRCW01005				
Rated Dissipation P ₇₀ ⁽¹⁾	W	0.031				
Operating Voltage U _{max.} AC _{RMS} /DC	V	15				
Insulation Voltage U _{ins} (1 min)	V	30				
Insulation Resistance	Ω	> 109				
Operating Temperature Range	°C	-55 to +125				
Mass	mg	0.07				

Note

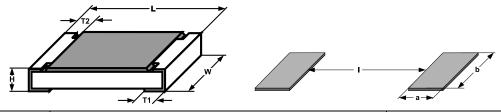
(1) The power dissipation on the resistor generates a temperature rise against the local ambient, depending on the heat flow support of the printed-circuit board (thermal resistance). The rated dissipation applies only if the permitted film temperature of 125 °C is not exceeded.





PACKAGING							
TYPE	CODE	QUANTITY	CARRIER TAPE	WIDTH	PITCH	REEL DIAMETER	
CRCW01005	EL = ET3	20 000	Paper tape acc. to IEC 60286-3, Type 1a	8 mm	2 mm	180 mm/7"	

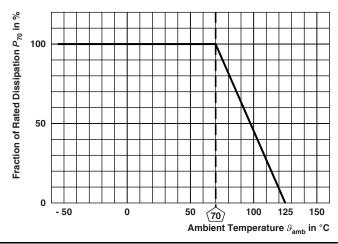
DIMENSIONS in millimeters



SIZE			DIMENSIONS					RECOMMENDED SOLDER PAD DIMENSIONS		
IMPERIAL	METRIC	L	W	Н	T1	T2	а	b	I	
01005	RR0402M	0.4 ± 0.02	0.2 ± 0.02	0.13 ± 0.02	0.10 ± 0.03	0.10 ± 0.03	0.15	0.2	0.2	

Note

DERATING



Revision: 28-Oct-13 2 Document Number: 20056

No marking for 01005 size.

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TEST PROCEDURES AND REQUIREMENTS							
	IEC		PROCEDURE	REQUIREMENTS PERMISSIBLE CHANGE (ΔR) STABILITY CLASS 1 OR BETTER			
EN 60115-1 CLAUSE	60068-2 TEST	TEST					
CLAUSE	METHOD		Stability for product types:				
			CRCW01005 e3	1 Ω to 1 M Ω			
4.5	-	Resistance	-	± 1 %; ± 2 %; ± 5 %			
4.13	-	Short time overload	$U = 2.5 \text{ x } \sqrt{P_{70} \text{ x } R} \le 2 \text{ x } U_{\text{max.}};$ duration according to style	± (2 % R + 0.1 Ω)			
4.17.2	58 (Td)	Solderability	Solder bath method; Sn60Pb40 non activated flux; (235 ± 5) °C (2 ± 0.2) s	Good tinning (≥ 95 % covered) no visible damage			
4.17.2		Solderability	Solder bath method; Sn96.5Ag3Cu0.5 non-activated flux; (235 ± 3) °C (2 ± 0.5) s	Good tinning (≥ 95 % covered) no visible damage			
4.8.4.2	-	Temperature coefficient	(20/-55/20) °C and (20/125/20) °C	- 200 ppm/K/+600 ppm/K, ± 250 ppm/K			
4.33	21 (Uu ₁)	Substrate bending	Depth 3 mm; 1 time	No visible damage, no open circuit in bent position $\pm (1 \% R + 0.05 \Omega)$			
4.19	14 (Na)	Rapid change of temperature	15 min. at -55 °C; 15 min. at 125 °C; 300 cycles	± (2 % R + 0.1 Ω)			
4.25.1	-	Endurance at 70 °C	$U = \sqrt{P_{70} \times R} \le U_{\text{max}};$ 1.5 h on; 0.5 h off; 70 °C; 1000 h	± (5 % R + 0.1 Ω)			
4.18.2	58 (Td)	Resistance to soldering heat	Solder bath method (260 ± 5) °C; (10 ± 1) s	± (2 % R + 0.1 Ω)			
4.24	78 (Cab)	Damp heat, steady state	(40 ± 2) °C; (90 to 95) % RH; 1000 h	± (5 % R + 0.1 Ω)			
4.25.3	-	Endurance at upper category temperature	125 °C, 1000 h	± (2 % R + 0.1 Ω)			
4.29	45 (XA)	Component solvent resistance	Isopropyl alcohol; (20 to 25) °C; (5 ± 0.5) min	No visible damage			

All tests are carried out in accordance with the following specifications:

- EN 60115-1, generic specification
- EN 140400, sectional specification
- EN 140401-802, detail specification
- IEC 60068-2-x, environmental test procedures

Packaging of components is done in paper tapes according to IEC 60286-3.



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