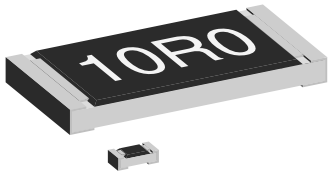
Lead (Pb)-Bearing Thick Film, Rectangular Chip Resistors



FEATURES

- High pulse performance (time/power)
- Metal glaze on high quality ceramic
- Protective overglaze
- Lead (Pb)-bearing solder contacts on Ni barrier layer

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	SIZE		POWER RATING $P_{70\ °C}$ W	RATED VOLTAGE V	TEMPERATURE COEFFICIENT ppm/K	TOLERANCE %	RESISTANCE RANGE Ω	E-SERIES
	INCH	METRIC						
CRCW1206-37	1206	3216	0.25	200	± 200	± 10	5R1 to 10M	E24
CRCW1210-37	1210	3225	0.33	200				
CRCW2512-37	2512	6332	1.0	500				

Notes:

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

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CRCW1206-37	CRCW1210-37	CRCW2512-37
Rated Dissipation at P_{70} (2)	W	0.25	0.33	1.0
Rated Voltage $U_{max.}$ AC/DC	V	200	200	500
Insulation Voltage U_{ins} (1 Min)	V	> 300		
Thermal Resistance (1)	K/W	≤ 220	≤ 140	≤ 65
Category Temperature Range	°C	- 55 to + 155		
Weight	mg	10	16	40.5

Notes:

(1) For size 1206 the measuring conditions are in acc. to EN 140401-802. For all other sizes the result depends on the solder pad dimensions.

(2) 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 155 °C is not exceeded.

PART NUMBER AND PRODUCT DESCRIPTION

PART NUMBER: CRCW120622K0KNTA37 (1)

C	R	C	W	1	2	0	6	2	2	K	0	K	N	T	A	3	7

MODEL	VALUE	TOLERANCE	TCR	PACKAGING (2)	SPECIAL
CRCW1206 **CRCW1210** **CRCW2512**	**R** = Decimal **K** = Thousand **M** = Million	**K** = ± 10 %	**N** = ± 200 ppm/K	**TA** **TB** **TC** **TG** **TH** **TI** **TL**	**37** = Non-trimmed

PRODUCT DESCRIPTION: CRCW1206-37 223 K 200 RT1

CRCW-37	223	K	200	200
MODEL	RESISTANCE VALUE	TOLERANCE	TCR	PACKAGING (2)
CRCW1206-37 CRCW1210-37 CRCW2512-37	685 = 6.8 MΩ 224 = 220 kΩ	K = ± 10 %	± 200 ppm/K	RT1 RT5 RT6 R67 R82 RG1 R20

Notes:

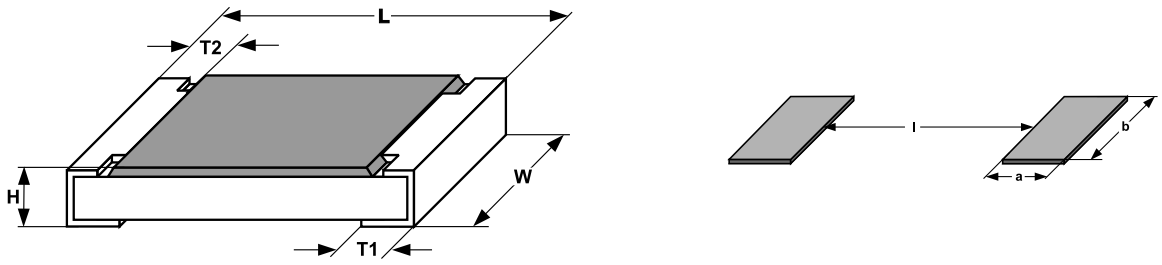
(1) Preferred way for ordering products is by use of the PART NUMBER

(2) Please refer to table PACKAGING, see below

PACKAGING

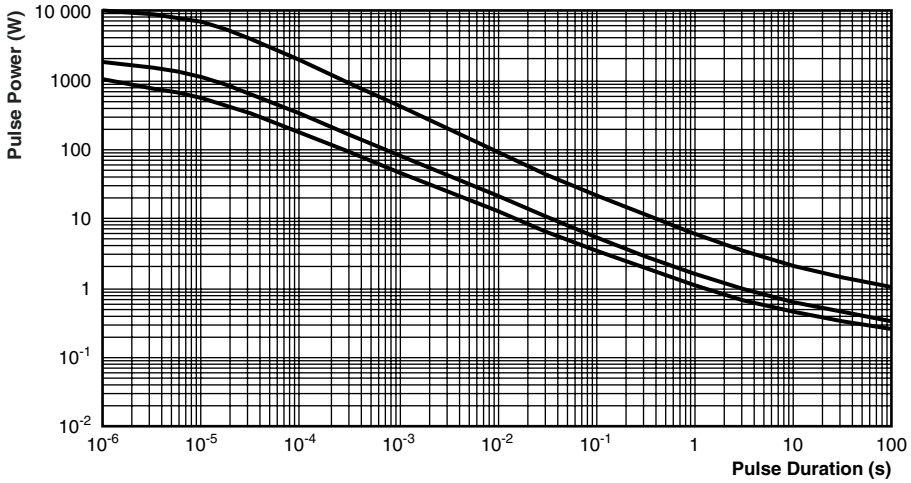
MODEL	REEL							
	TAPE WIDTH	DIAMETER	PITCH	PIECES/ REEL	PACKAGING CODE			
					PART NUMBER		PRODUCT DESC.	
					PAPER	BLISTER	PAPER	BLISTER
D25/CRCW1206-37	8 mm	180 mm/7"	4 mm	5000	TA	TI	RT1	RG1
		285 mm/11.25"	4 mm	10 000	TB		RT5	
		330 mm/13"	4 mm	20 000	TC	TL	RT6	R20
CRCW1210-37	12 mm	180 mm/7"	4 mm	5000	TA		RT1	
		285 mm/11.25"	4 mm	10 000	TB		RT5	
		330 mm/13"	4 mm	20 000	TC		RT6	
CRCW2512-37	12 mm	180 mm/7"	8 mm	2000		TG		R67
			4 mm	4000		TH		R82

DIMENSIONS

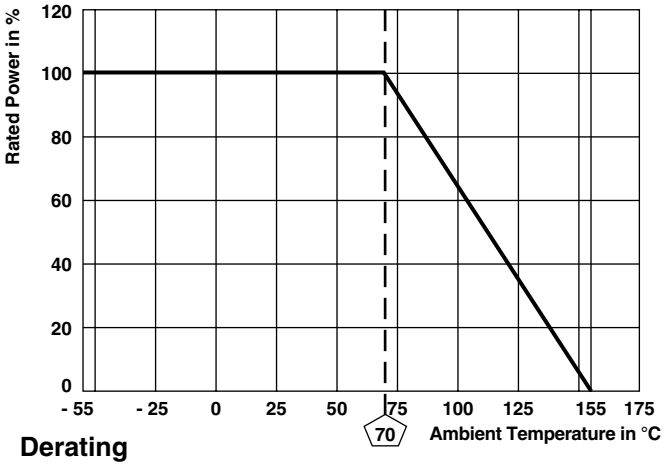


SIZE		DIMENSIONS [in millimeters]					SOLDER PAD DIMENSIONS [in millimeters]					
							REFLOW SOLDERING			WAVE SOLDERING		
INCH	METRIC	L	W	H	T1	T2	a	b	l	a	b	l
1206	3216	3.2 $^{+0.10}_{-0.20}$	1.6 ± 0.15	0.55 ± 0.05	0.45 ± 0.2	0.4 ± 0.2	0.9	1.7	2.0	1.1	1.7	2.3
1210	3225	3.2 ± 0.2	2.5 ± 0.2	0.55 ± 0.05	0.45 ± 0.2	0.4 ± 0.2	0.9	2.5	2.0	1.1	2.5	2.2
2512	6332	6.3 ± 0.2	3.15 ± 0.15	0.6 ± 0.1	0.6 ± 0.2	0.6 ± 0.2	1.0	3.2	5.2	1.2	3.2	5.2

FUNCTIONAL PERFORMANCE



Maximum pulse dissipation as a function of the pulse duration for one.pulse loading of CRCW...-37 resistors



Derating

TEST PROCEDURES AND REQUIREMENTS

EN 60115-1		
TEST (clause)	**CONDITIONS OF TEST**	**REQUIREMENTS**
		STABILITY CLASS 2 OR BETTER
	Stability for product types: **CRCW....-37**	5.1 Ω to 10 MΩ
Resistance (4.5)	-	± 10 %
Temperature coefficient (4.8.4.2)	20/- 55/20 °C and 20/125/20 °C	± 200 ppm/K
Overload (4.13)	$U = 2.5 \times (P_{70} \times R)^{1/2}$ ≤ 2 x $U_{max.}$; Duration: according the style	± (0.25 % R + 0.05 Ω)
Solderability (4.17.5)	Aging 4 h at 155 °C, dryheat solder bath method; 235 °C; 2 s visual examination	Good tinning (≥ 95 % covered) no visible damage
Resistance to soldering heat (4.18.2)	Solder bath method; (260 ± 5) °C; (10 ± 1) s	± (0.25 % R + 0.05 Ω)
Rapid change of temperature (4.19)	30 min at LCT = - 55 °C; 30 min at UCT = 125 °C; 5 cycles	± (0.25 % R + 0.05 Ω)
Damp heat, steady state (4.24)	(40 ± 2) °C; 56 days; (93 ± 3) % RH	± (1 % R + 0.05 Ω)
Climatic sequence (4.23)	16 h at UCT = 125 °C; 1 cycle at 55 °C; 2 h at LCT = - 55 °C; 1 h/1 kPa at 15 °C to 35 °C; 5 cycles at 55 °C $U = (P_{70} \times R)^{1/2}$ $U = U_{max.}$; whichever is less severe	± (1 % R + 0.05 Ω)
Endurance at 70 °C (4.25.1)	$U = (P_{70} \times R)^{1/2}$ $U = U_{max.}$; whichever is less severe 1.5 h ON; 0.5 h OFF; 70 °C; 1000 h	± (1 % R + 0.05 Ω)
Extended endurance (4.25.1.8)	Duration extended to 8000 h	± (2 % R + 0.1 Ω)
Endurance at upper category temperature (4.25.3)	UCT = 125 °C; 1000 h	± (1 % R + 0.05 Ω)

APPLICABLE SPECIFICATIONS

- EN 60115-1 Generic Specification
- EN 140400 Sectional Specification
- EN 140401-802 Detail Specification
- IEC 60068-2-X Variety of environmental test procedures
- IEC 60286-3 Packaging of SMD components

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