

CRS Series Datasheet

Precision Wirewound Resistors | Axial and SMD Version
Ceramic core | Flame retardant coating

ORDERING CODE-Example

New SAP Part Nr.:

CRS	300	J	T	-	73-	150R	AA
Serie	* Power rating	Tol. D = ±0,5% F = ±1% G = ±2% J = ±5%	Pack-Code T = Tape (ammo pack)	TCR - Base on spec.	Forming type 52- Inner Taping dimension or 73- Inner Taping dimension ZB- Z version	R Value	Special AA = Standard

Historical VTM Part Nr.:

CR254 - 0	5	T	150R
Type	Tol. ±5% = J	Pack-Code T = Tape (ammo pack)	R Value

RZC4	6720	J	K	-	13	150R
Type	Size	Tol.	K = Blister tape reel	TC	Reel diam.	R Value

APPLICATIONS

- Automotive
- Charger
- Alternative Energy
- Power Supply
- Home Appliances
- Industrial

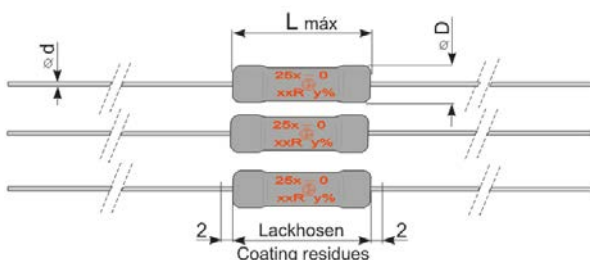
FEATURES

- Flame retardant coating
- Non-inductive type available
- Precision Type
- "Z" preforming ; Other preforming available
- RoHs Compliant

ELECTRICAL SPECIFICATIONS

Type		CRS110	CRS200	CRS250	CRS300	CRS350	CRS400	CRS500	CRS550	CRS720
Historical Part Number	AXIAL	CR251-0	CR252-0	CR253-0	CR254-0	CR255-0	CR256-0	CR257-0	CR258-0	CR259-0
	SMD	RZC1	RZC2	RZC3	RZC4	-----	RZC6	-----	-----	-----
Nominal Power Rating	* P ₄₀ P ₇₀	[W]	1,1 1,0	2,0 1,8	2,5 2,3	3,0 2,7	3,5 3,2	4,0 3,6	5,0 4,5	5,5 5,0
Resistance Range	[Ω]	OR01 ... 220R	OR016 ... 470R	OR01 ... 750R	OR01 ... 1K8	OR015 ... 1K	OR02 ... 1K5	OR027 ... 5K1	OR033 ... 6K8	OR047 ... 8K2
		(Other values upon request)								
E-Series (preferred)		E24 (Other upon request)								
Tolerances	±[%]	0,5(D) [R ≥ 1R] ; 1(F) ; 2(G) ; 5(J)								
Temperature Coefficient	±[10 ⁻⁶ K ⁻¹]	Depends on the value, please check the table below								
Working Temperature Range	[°C]	-55 ... +350								
Thermal Resistance	[KW ⁻¹]	280	155	122	104	93	78	62	56	43
Max. Working Voltage	[V] _{RMS}	$\sqrt{P_{70} \times R}$								
Dielectric Withstanding Voltage IEC115-1 clause 4.7 (1[min])	[V] _{RMS}	500								

DIMENSIONS [mm]



Type	Historical P/N:	L max.	Ø D max. *	Ø d ±0,05
CRS110	CR251 - 0	9,0	3,0	0,65
CRS200	CR252 - 0	9,7	4,0	0,80
CRS250	CR253 - 0	14,5	4,5	0,65
CRS300	CR254 - 0	12,6	5,5	0,80
CRS350	CR255 - 0	15,0	8,5	0,80
CRS400	CR256 - 0	17,0	5,5	0,80
CRS500	CR257 - 0	18,0	8,5	0,80
CRS550	CR258 - 0	22,0	8,5	0,80
CRS720	CR259 - 0	27,0	8,5	0,80

*R <10R D max.+1

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PERFORMANCE DATE

Type		CRS110	CRS200	CRS250	CRS300	CRS350	CRS400	CRS500	CRS550	CRS720
Historical Part Number	AXIAL	CR251-0	CR252-0	CR253-0	CR254-0	CR255-0	CR256-0	CR257-0	CR258-0	CR259-0
	SMD	RZC1	RZC2	RZC3	RZC4	-----	RZC6	-----	-----	-----
Derating Linear	[°C]	70...350 (0W)								
Climatic Category		55/350/56								
Failure Rate <i>(Total, ϑ_0, max, 60[%] cont. lev.)</i>	[10 ⁻⁹ h ⁻¹]	appr. 10 depends on value								
Endurance <i>IEC60115-1 clause 4.25 (P₇₀, @ 70[°C], 1000[h])</i>	±[%]	5,0								
Damp Heat, Steady State <i>IEC60115-1 clause 4.24 (40[°C], 93[% r.h.], 56[d])</i>	±[%]	5,0								
Climatic Sequence <i>IEC60115-1 clause 4.23 (260^{±5}[°C], 10^{±1}[s])</i>	±[%]	2,0								
Resistance to Soldering Heat <i>IEC60115-1 clause 4.18 (260^{±5}[°C], 10^{±1}[s])</i>	±[%]	1,0								
Terminal Strength	±[%]	0,2								
Terminal Tensile Strength	[N]	40	50							
Solderability <i>IEC60068-2-20 (245^{±5}[°C] 3^{±0,5}[s])</i>		Solder bath method (> 95% coverage)								
Marking <i>IEC60062</i>		Printed in clear								

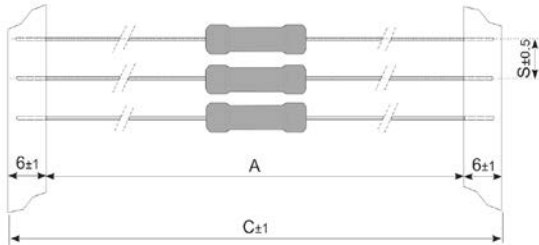
TEMPERATURE COEFFICIENT

New P/Nr. Type	Historical P/N:	Temperature Coefficient (-20°C to 120°C)									
		700 ± 200 ppm/K		400 ± 50 ppm/K		appr. +180 ppm/K		-20 ± 60 ppm/K		0 ± 10 ppm/K	
CRS110	CR251-0	-----	-----	≥ 0R01	≤ 0R024	≥ 0R027	≤ 0R091	≥ 0R1	≤ 15R	≥ 16R	≤ 220R
CRS200	CR252-0	≥ 0R016	≤ 0R02	≥ 0R027	≤ 0R091	-----	-----	≥ 0R1	≥ 68R	≥ 75R	≤ 470R
CRS250	CR253-0	≥ 0R01	≤ 0R02	≥ 0R022	≤ 0R047	≥ 0R051	≤ 0R091	≥ 0R1	≤ 47R	≥ 51R	≤ 750R
CRS300	CR254-0	≥ 0R01	≤ 0R027	≥ 0R03	≤ 0R075	≥ 0R082	≤ 0R091	≥ 0R1	≤ 47R	≥ 51R	≤ 1K8
CRS350	CR255-0	≥ 0R015	≤ 0R024	≥ 0R027	≤ 0R062	≥ 0R068	≤ 0R091	≥ 0R1	≤ 68R	≥ 75R	≤ 1K0
CRS400	CR256-0	≥ 0R02	≤ 0R03	≥ 0R033	≤ 0R062	≥ 0R068	≤ 0R091	≥ 0R1	≤ 130R	≥ 150R	≤ 1K5
CRS500	CR257-0	≥ 0R027	≤ 0R047	≥ 0R051	≤ 0R082	≥ 0R091	≤ 0R13	≥ 0R15	≤ 150R	≥ 160R	≤ 5K1
CRS550	CR258-0	≥ 0R033	≤ 0R062	≥ 0R068	≤ 0R13	≥ 0R15	≤ 0R16	≥ 0R18	≤ 160R	≥ 180R	≤ 6K8
CRS720	CR259-0	≥ 0R047	≤ 0R075	≥ 0R082	≤ 0R15	≥ 0R16	≤ 0R24	≥ 0R27	≤ 180R	≥ 200R	≤ 8K2

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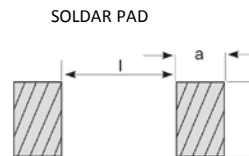
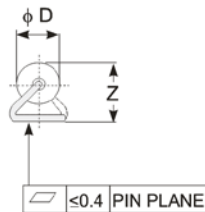
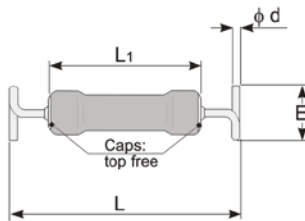
PACKAGING

The standard packaging for CRS in axial type is taped, dimensions below.

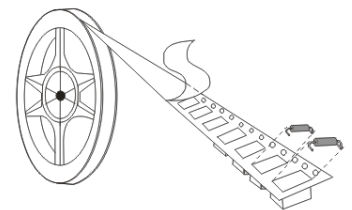
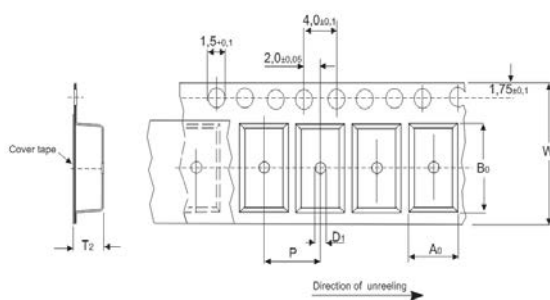


New P/N Type	Historical P/N:	Pack Code	Pieces	Forming Type (Inner Taping dim.)	A	C	S
CRS110	CR251-0	T = Taped Ammo pack	1000	52-	52	65	5
CRS200	CR252-0		1000	52-	52	65	5
CRS250	CR253-0		1000	73-	73	85	10
CRS300	CR254-0		1000		73	85	10
CRS350	CR255-0		500		73	85	10
CRS400	CR256-0		1000		73	85	10
CRS500	CR257-0		500		73	85	10
CRS550	CR258-0		500		73	85	10
CRS720	CR259-0		500		73	85	10

SMD LEAD CONFIGURATIONS



New P/N Type	Historical P/N	Size	L	L ₁ max.	Ø D max	Ø d ±0,05	E	Z max	I	a	b
CRS110	RZC1	5315	13,4±0,5	9,0	3,0	0,65	5,0±0,5	7,0	10	10	10
CRS200	RZC2	5315		9,7	4,0	0,80					
CRS250	RZC3	6720	17,0±1,0	14,5	4,5	0,65		7,5	14		
CRS300	RZC4	6720		12,6	6,0	0,80					
CRS400	RZC6	8424	20,9±1,0	17,0	6,0	0,80		8,0	16		



Type	A0	B0	W	D1	P	T2
CRS110 CRS200	5,0	13,7	24	2,0	8	7,2
CRS250 CRS300	5,7	16,7	24	2,0	8	7,6
CRS400	6,0	21,4	32	2,0	12	8,1

Type	W1	W2	N	A
CRS110 CRS200	25,4	29,5	90	330
CRS250 CRS300				
CRS400	33,4	37,4	100	380

Type	Packaging	Pieces
CRS110 CRS200	13(inch) Blister tape	1000
CRS250 CRS300		
CRS400	15(inch) Blister tape	

Ordering Code for SMD :

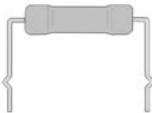
CRS	300	J	K	-	ZB-	150R	AA
Serie	* Power rating	Tol.	Pack-Code	TCR	Forming type	R Value	Special
		J = ±5%	K = Blister Tape Reel	- Base on spec.	ZB- Z version		AA = Standard

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ALTERNATIVE LEAD CONFIGURATIONS

This type CRS is also available in a different pre-forming, as shown below, other's upon request.

THOUGH HOLE VERSION

			
Axial Goal Post (AG-)	Axial Goal Post Kink (AK-)	Radial (RD-)	Radial 2 Kink (RK-)