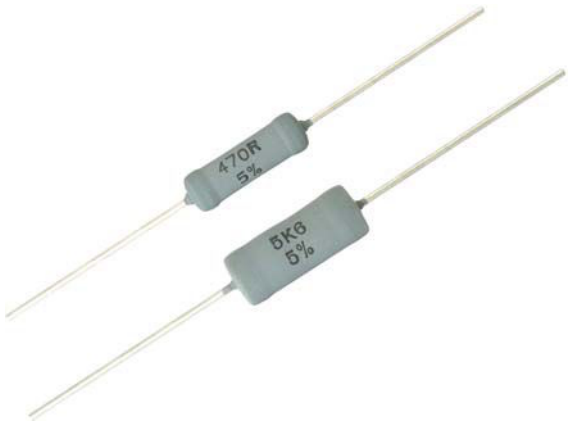
High Surge Axial Cemented Wirewound Resistors



FEATURES

- Standard version Z300-C00
- High voltage surge (up to 12 kV) for special version
- Non flammable cement coating
- High grade ceramic core
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

GREEN (5-2008)

APPLICATIONS

- Energy meter
- Appliances
- Ballast

STANDARD ELECTRICAL SPECIFICATIONS				
MODEL	POWER RATING P_{40} W	POWER RATING P_{70} W	RESISTANCE RANGE Ω TCR [1][2] = ± 200 ppm/K	TOLERANCE [3] ± %
Z301-C	1	0.9	0.30 to 2K	10, 5
ZDA0411-C	2	1.8	0.47 to 4.3K	10, 5
Z302-C	3	2.5	0.22 to 3.3K	10, 5
Z303-C	4	3.5	0.47 to 3.9K	10, 5
Z304-C	5	4.7	0.62 to 5.6K	10, 5
Z305-C	6	5.4	0.15 to 10K	10, 5

Notes

(1) Lower TCR products are available on request

(2) TCR of values <1R is ±400ppm/K

(3) Resistance value to be selected for ± 10 % tolerance from E12 and for ± 5 % from E24, 1 % tolerance available on request.

PART NUMBER AND PRODUCT DESCRIPTION

Part Number: Z340818347 00J6DC10

Z	3	4	0	8	1	8	3	4	7	0	0	J	6	D	C	1	0

MODEL	TCR/MATERIAL	VALUE	TOLERANCE CODE	PACKAGING CODE	SPECIAL [1]
Z310309 = Z301-C **ZDA0411** = ZDA0411-C **Z320414** = Z302-C **Z330617** = Z303-C **Z340818** = Z304-C **Z350922** = Z305-C	**1** = ± 100 ppm/K **3** = ± 200 ppm/K **4** = SWI (special winding)	**3 digit value** **1 digit multiplier** MULTIPLIER **7** = $*10^{-3}$ **8** = $*10^{-2}$ **9** = $*10^{-1}$ **0** = $*10^{0}$ **1** = $*10^{1}$ **2** = $*10^{2}$	**J** = ± 5.0 % **K** = ± 10.0 %	(See Packaging Table)	**C00** = Standard **C04** = 4 kV surge **C06** = 6 kV surge **C08** = 8 kV surge **C10** = 10 kV surge **C12** = 12 kV surge

Product Description: Z304-C 3 470R 5 % AC G63 CD1278

Z304-C	3	470R	5 %	AC G63	CD1278
MODEL	TCR/MATERIAL	VALUE	TOLERANCE CODE	PACKAGING DESCRIPTION	**Blank** = Standard **CDxxxx** = Speciality

MINIMUM RESISTANCE VALUE FOR HANDLING SURGE VOLTAGE AS PER IEC61000-4-5 (1.2/50 µS PULSE)

POWER	TYPE	4 kV SURGE	6 kV SURGE	8 kV SURGE	10 kV SURGE	12 kV SURGE
1 W	Z301-C	430R	1K5	-	-	-
2 W	ZDA0411-C	180R	510R	1K1	2K2	3K3
3 W	Z302-C	62R	330R	680R	1K8	2K2
4 W	Z303-C	27R	91R	220R	470R	820R
5 W	Z304-C	15R	43R	82R	100R	330R
6 W	Z305-C	4.7R	18R	27R	68R	130R

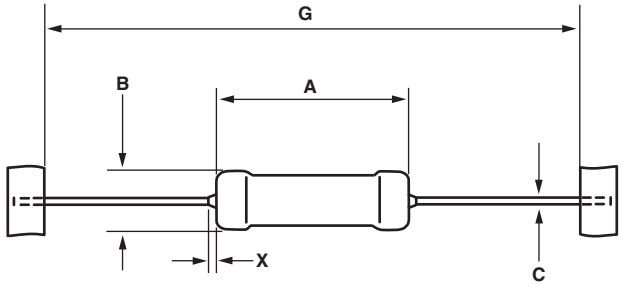
Note

[1] As surge handling capacity depends upon resistor model and ohmic value, please check feasibility of resistor model, ohmic value and desired surge handling voltage with factory. (ww1resistors@vishay.com)

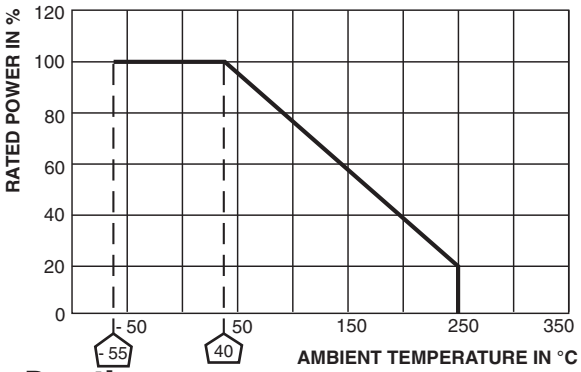
PACKAGING TABLE

MODEL	TAPE LENGTH (G) (mm)	AMMO PACK		
		PIECES	PACKAGING CODE	PACKAGING DESCRIPTION
Z301-C, ZDA0411-C	53	1000	21	A1 G53
Z302-C	53	500	2C	AC G53
	73	500	4C	AC G73
	83	250	6C	AC G83
Z303-C	53	500	2C	AC G53
	83	500	6C	AC G83
Z304-C	63	250	6D	AC G63
	83	250	6E	AB G83
Z305-C	83	250	6B	AB G83

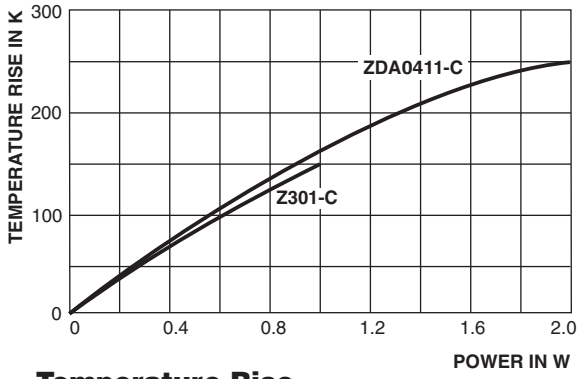
DIMENSIONS



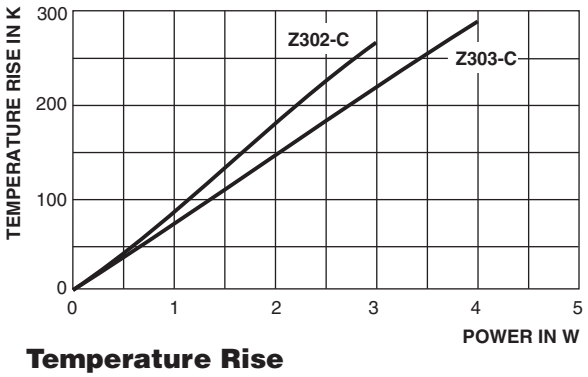
MODEL	DIMENSIONS in millimeters (inches)					
	$A_{MAX.}$	$B_{MAX.}$	$C_{MAX.}$	G	$X_{MAX.}$	MASS (g)
Z301-C	8.5 (0.355)	3 (0.118)	0.7 (0.027)	53 ± 1 (2.087 ± 0.039)	2 (0.079)	0.5
ZDA0411-C	11 (0.433)	4 (0.157)	0.7 (0.027)	53 ± 1 (2.087 ± 0.039)	2 (0.079)	0.8
Z302-C	13 (0.512)	4.8 (0.189)	0.8 (0.031)	53 ± 1 (2.087 ± 0.039) 73 ± 1 (2.87 ± 0.039) 83 ± 1 (3.268 ± 0.039)	2 (0.079)	1.1
Z303-C	15.8 (0.622)	5.5 (0.217)	0.8 (0.031)	53 ± 1 (2.087 ± 0.039) 83 ± 1 (3.268 ± 0.039)	3 (0.118)	1.4
Z304-C	18 (0.709)	7.5 (0.295)	0.8 (0.031)	63 ± 1 (2.48 ± 0.039)	3 (0.118)	1.9
Z305-C	22.3 (0.878)	8.7 (0.343)	0.8 (0.031)	83 ± 1 (3.268 ± 0.039)	3 (0.118)	3.7



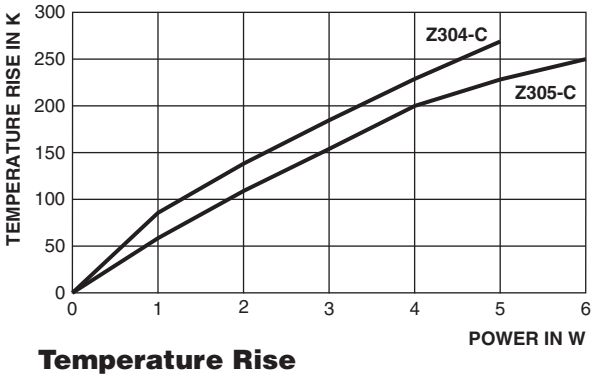
Derating



Temperature Rise



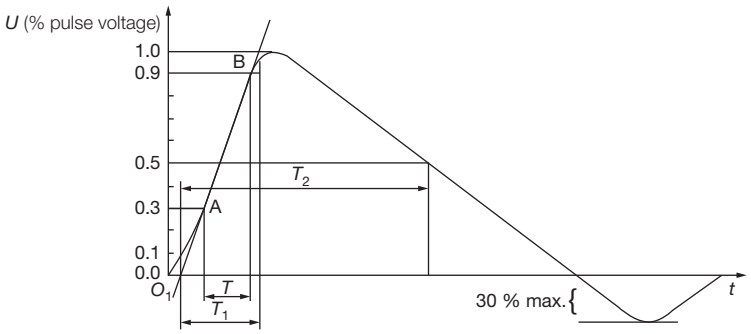
Temperature Rise



Temperature Rise

HIGH VOLTAGE SURGE

The specially designed Z300-C high surge wirewound resistors are tested for surge handling capability by applying surge voltage as per the 1.2 µs/50 µs exponential open circuit voltage waveform according to IEC 61000-4-5 standard as shown below:



Front time: T_1 = 1.67 x T = 1.2 µs ± 30 %
Time to half-value: T_2 = 50 µs ± 20 %

Waveform of open-circuit voltage (1.2 µs/50 µs) at the output of pulse generator

PERFORMANCE	
TEST	**PERMISSIBLE CHANGE**
Climatic category (LCT/UCT/days)	40/200/56
Damp heat, steady state, IEC 60115-1, 4.24 (40 ± 2) °C, 56 days, (93 ± 3) % RH	ΔR = ± (3 % R + 0.1 Ω)
Climatic sequence IEC 60115-1 4.23	ΔR = ± (3 % R + 0.1 Ω)
Endurance at room temperature (116 % P_{70}), 1000 h, IEC 60115-1, 4.25.2	ΔR = ± (3 % R + 0.1 Ω)
Endurance at UCT, 200 °C (30 % P_{70}), 1000 h, IEC 60115-1, 4.25.3	ΔR = ± (3 % R + 0.1 Ω)
Short time overload, IEC 60115-1, 4.13 10 x rated power P_{40} for 5 s	ΔR = ± (2 % R + 0.05 Ω)
Resistance to soldering heat, IEC 60115-1, 4.18 (260 ± 5) °C, (10 ± 1) s	ΔR = ± (1 % R + 0.05 Ω)
Robustness of termination, IEC 60115-1, 4.16	ΔR = ± (0.5 % R + 0.05 Ω)

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