

- Features:**
- WWS offers miniature size at higher power rating
  - High performance for low cost
  - High power to size ratio
  - MWW – completely molded construction with welded terminations
  - Complete welded terminations
  - Tinned copper leads
  - Available in non-inductive styles
  - High temperature silicone coating
  - RoHS compliant
  - Higher operating temperatures available
  - Bulk packaging available - contact Stackpole for package quantities



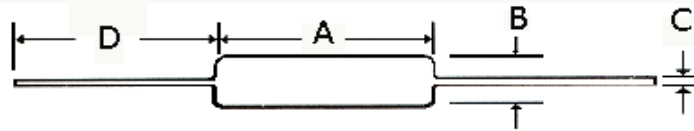
**Electrical Specifications**

Type / Code	MIL-R-26 Ref.	Dielectric Strength (V) (1)	Power Rating (W) @ 125°C	Power Rating (W) @ 70°C	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance (*)			
						0.1%	0.5%	1%	5%
WW12	-	500 V	0.4 W	0.5 W	$< 1\Omega = \pm 90\text{ppm}/^\circ\text{C}$ $1\Omega \text{ to } 10\Omega = \pm 50\text{ppm}/^\circ\text{C}$ $> 10\Omega = \pm 20\text{ppm}/^\circ\text{C}$	5 - 2K	3 - 2K	3 - 2K	5 - 2K
WW1	-	500 V	1 W	1.1 W		2 - 3K	2 - 3K	2 - 3K	2 - 3K
WW1A	RW-70	500 V	1 W	1.3 W		1 - 5K	1 - 5K	1 - 5K	1 - 5K
WW2	RW-69	1000 V	1.5 W	2.1 W		1 - 10K	0.5 - 10K	0.5 - 10K	0.5 - 10K
WW2S	-	500 V	2.5 W	2.6 W		1 - 10K	0.5 - 10K	0.5 - 10K	0.5 - 10K
WW2A	-	1000 V	2.5 W	2.6 W		1 - 10K	0.5 - 10K	0.5 - 10K	0.5 - 10K
WW3	RW-79	1000 V	3 W	3.2 W		1 - 22K	0.5 - 22K	0.5 - 22K	0.5 - 22K
WWS3	-	1000 V	3 W	3.2 W		3 - 10K	1 - 10K	1 - 10K	1 - 10K
WW3A	-	1000 V	3 W	3.4 W		1 - 30K	0.5 - 30K	0.5 - 30K	0.5 - 30K
WW4	-	1000 V	4 W	4.3 W		1 - 40K	0.5 - 40K	0.5 - 40K	0.5 - 40K
WWS4	RW-79	1000 V	4 W	4.3 W		1 - 22K	0.5 - 22K	0.5 - 22K	0.5 - 22K
WW5	RW-67, RW-74	1000 V	5 W	5.1 W		1 - 50K	0.5 - 50K	0.5 - 50K	0.5 - 50K
WWS5	-	1000 V	5 W	5.1 W		1 - 40K	0.5 - 40K	0.5 - 40K	0.5 - 40K
WW7	-	1000 V	6.5 W	7.2 W		1 - 70K	0.5 - 70K	0.5 - 70K	0.5 - 70K
WWS7	RW-67, RW-74	1000 V	6.5 W	7.2 W		1 - 50K	0.5 - 50K	0.5 - 50K	0.5 - 50K
WW7B	-	1000 V	7 W	7.7 W		1 - 70K	0.5 - 70K	0.5 - 70K	0.5 - 70K
WW10	RW-78	1000 V	10 W	11 W		1 - 100K	0.5 - 100K	0.5 - 100K	0.5 - 100K
WWS10	-	1000 V	10 W	11 W		1 - 70K	0.5 - 70K	0.5 - 70K	0.5 - 70K
NWW12	-	500 V	0.4 W	0.5 W		10 - 1K	10 - 1K	10 - 1K	10 - 1K
NWW1	-	500 V	1 W	1.1 W		4 - 1.5K	4 - 1.5K	2 - 1.5K	2 - 1.5K
NWW1A	RW-70	500 V	1 W	1.3 W		2 - 2.5K	2 - 2.5K	1 - 2.5K	1 - 2.5K
NWW2	RW-69	1000 V	1.5 W	2.1 W		2 - 5K	2 - 5K	1 - 5K	1 - 5K
NWWS2	-	500 V	2.5 W	2.6 W		2 - 5K	2 - 5K	1 - 5K	1 - 5K
NWW2A	-	1000 V	2.5 W	2.6 W		2 - 5K	2 - 5K	1 - 5K	1 - 5K
NWW3	RW-79	1000 V	3 W	3.2 W		2 - 11K	2 - 11K	1 - 11K	1 - 11K
NWWS3	-	1000 V	3 W	3.2 W		5 - 5K	5 - 5K	3 - 5K	3 - 5K
NWW3A	-	1000 V	3 W	3.4 W		2 - 15K	2 - 15K	1 - 15K	1 - 15K
NWW4	-	1000 V	4 W	4.3 W		2 - 20K	2 - 20K	1 - 20K	1 - 20K
NWWS4	RW-79	1000 V	4 W	4.3 W		2 - 11K	2 - 11K	1 - 11K	1 - 11K
NWW5	RW-67, RW-74	1000 V	5 W	5.1 W		2 - 25K	2 - 25K	1 - 25K	1 - 25K
NWWS5	-	1000 V	5 W	5.1 W		2 - 20K	2 - 20K	1 - 20K	1 - 20K
NWW7	-	1000 V	6.5 W	7.2 W		2 - 35K	2 - 35K	1 - 35K	1 - 35K
NWWS7	RW-67, RW-74	1000 V	6.5 W	7.2 W		2 - 25K	2 - 25K	1 - 25K	1 - 25K
NWW7B	-	1000 V	7 W	7.7 W		2 - 35K	2 - 35K	1 - 35K	1 - 35K
NWW10	RW-78	1000 V	10 W	11 W	2 - 50K	2 - 50K	1 - 50K	1 - 50K	
NWWS10	-	1000 V	10 W	11 W	2 - 35K	2 - 35K	1 - 35K	1 - 35K	
MWW1	RW-70	1000 V	1 W	1.3 W	5 - 2K	5 - 2K	5 - 2K	5 - 2K	
MWW3	RW-79	1000 V	3 W	3.2 W	3 - 20K	3 - 20K	3 - 20K	3 - 20K	
MWW5	RW-67, RW-74	1000 V	5 W	5.5 W	2 - 40K	2 - 40K	2 - 40K	2 - 40K	
MWW10	RW-68, RW-74	1000 V	10 W	11 W	2 - 80K	2 - 80K	2 - 80K	2 - 80K	
NMWW1	RW-70	1000 V	1 W	1.3 W	10 - 1K	10 - 1K	5 - 1K	5 - 1K	
NMWW3	RW-79	1000 V	3 W	3.2 W	5 - 10K	5 - 10K	3 - 10K	3 - 10K	
NMWW5	RW-67, RW-74	1000 V	5 W	5.5 W	3 - 20K	3 - 20K	2 - 20K	2 - 20K	
NMWW10	RW-68, RW-74	1000 V	10 W	11 W	3 - 40K	3 - 40K	2 - 40K	2 - 40K	

(\*) Other resistance values available - contact factory for details.

Performance Characteristics		
Test	Test Condition	Result
Moisture Resistance	1000 hours, 95% R.H., 40°C	1% max
Load Life	1000 hours, cycled power 1.5 hours ON, 0.5 hours OFF, 25°C	1%
Temperature Cycling	5 cycles, -55°C to 200°C	0.5%
Short Time Overload	5 times rated power for 5 seconds	1%

Operating Temperature Range: -55°C to +350°C

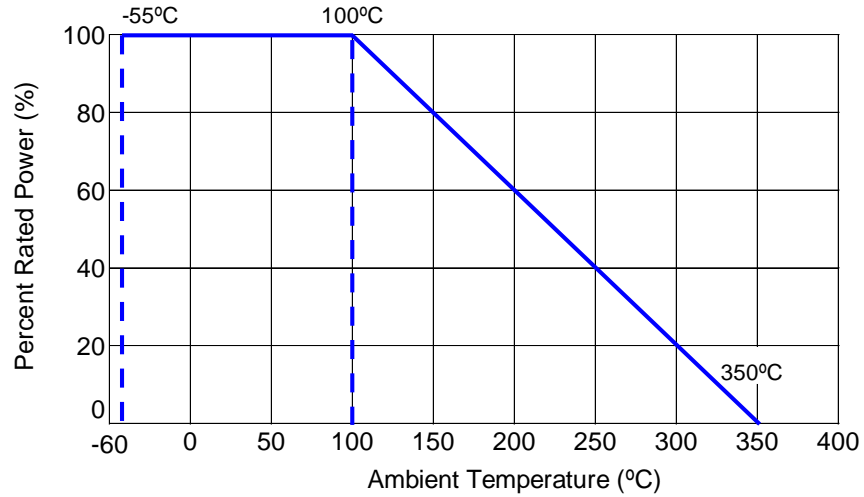


Mechanical Specifications					
Type / Code	A	B	C	D (Bulk) (1)	Unit
WW12 / NWW12	0.312 ± 0.062	0.110 ± 0.031	0.025 ± 0.002	1.500 typ.	inches
	7.92 ± 1.57	2.79 ± 0.79	0.64 ± 0.05	38.10 typ.	mm
WW1, WWS2 / NWW1, NWWS2	0.375 ± 0.062	0.110 ± 0.031	0.025 ± 0.002	1.500 typ.	inches
	9.53 ± 1.57	2.79 ± 0.79	0.64 ± 0.05	38.10 typ.	mm
WW1A / NWW1A	0.420 ± 0.062	0.110 ± 0.031	0.025 ± 0.002	1.500 typ.	inches
	10.67 ± 1.57	2.79 ± 0.79	0.64 ± 0.05	38.10 typ.	mm
WW2, WWS3 / NWW2, NWWS3	0.370 ± 0.062	0.156 ± 0.031	0.032 ± 0.002	1.500 typ.	inches
	9.40 ± 1.57	3.96 ± 0.79	0.81 ± 0.05	38.10 typ.	mm
WW2A / NWW2A	0.550 ± 0.062	0.156 ± 0.031	0.032 ± 0.002	1.500 typ.	inches
	13.97 ± 1.57	3.96 ± 0.79	0.81 ± 0.05	38.10 typ.	mm
WW3, WWS4 / NWW3, NWWS4	0.560 ± 0.062	0.187 ± 0.031	0.032 ± 0.002	1.500 typ.	inches
	14.22 ± 1.57	4.75 ± 0.79	0.81 ± 0.05	38.10 typ.	mm
WW3A / NWW3A	0.500 ± 0.062	0.218 ± 0.031	0.032 ± 0.002	1.500 typ.	inches
	12.70 ± 1.57	5.54 ± 0.79	0.81 ± 0.05	38.10 typ.	mm
WW4, WWS5 / NWW4, NWWS5	0.700 ± 0.062	0.270 ± 0.031	0.036 ± 0.002	1.500 typ.	inches
	17.78 ± 1.57	6.86 ± 0.79	0.91 ± 0.05	38.10 typ.	mm
WW5, WWS7 / NWW5, NWWS7	0.875 ± 0.062	0.312 ± 0.031	0.036 ± 0.002	1.500 typ.	inches
	22.23 ± 1.57	7.92 ± 0.79	0.91 ± 0.05	38.10 typ.	mm
WW7 / NWW7	1.000 ± 0.062	0.312 ± 0.031	0.036 ± 0.002	1.500 typ.	inches
	25.40 ± 1.57	7.92 ± 0.79	0.91 ± 0.05	38.10 typ.	mm
WW7B, WWS10 / NWW7B, NWWS10	1.200 ± 0.062	0.312 ± 0.031	0.036 ± 0.002	1.500 typ.	inches
	30.48 ± 1.57	7.92 ± 0.79	0.91 ± 0.05	38.10 typ.	mm
WW10 / NWW10	1.780 ± 0.062	0.375 ± 0.031	0.040 ± 0.002 (2)	1.500 typ.	inches
	45.21 ± 1.57	9.53 ± 0.79	1.02 ± 0.05 (2)	38.10 typ.	mm
MWW1 / NMWW1	0.385 ± 0.062	0.135 ± 0.031	0.032 ± 0.002	1.500 typ.	inches
	9.78 ± 1.57	3.43 ± 0.79	0.81 ± 0.05	38.10 typ.	mm
MWW3 / NMWW3	0.560 ± 0.062	0.205 ± 0.031	0.032 ± 0.002	1.500 typ.	inches
	14.22 ± 1.57	5.21 ± 0.79	0.81 ± 0.05	38.10 typ.	mm
MWW5 / NMWW5	0.925 ± 0.062	0.330 ± 0.031	0.036 ± 0.002	1.500 typ.	inches
	23.50 ± 1.57	8.38 ± 0.79	0.91 ± 0.05	38.10 typ.	mm
MWW10 / NMWW10	1.965 ± 0.062	0.480 ± 0.031	0.040 ± 0.002	1.500 typ.	inches
	49.91 ± 1.57	12.19 ± 0.79	1.02 ± 0.05	38.10 typ.	mm

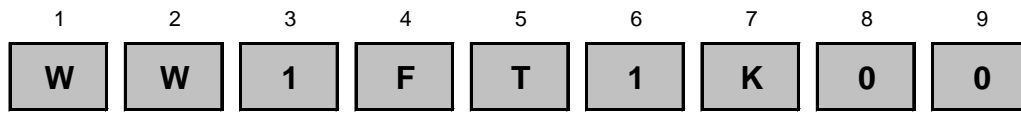
(1) See "Resistor Packaging Specification Document" for lead length dimension for tape and reel packaged product

(2) Available in 0.036" / 0.91mm

Power Derating Curve:



**How to Order**



Product Series		Type/Code	Power Rating		Tolerance		Packaging			Resistance Value	
WW	Standard		@ 125°C	@ 70°C	Code	Tol	Code	Description	Quantity		
WWS	Mini	WW12 / NWW12	0.4W	0.5 W	B	0.1%	T	11" Tape and Reel	2,500	Four characters with the multiplier used as the decimal holder. 0.1 ohm = R100 2 Kohm = 2K00	
MWW	Molded	WW1 / NWW1	1W	1.1 W	D	0.5%					
NWW	Non-Inductive	WW1A / NWW1A	1W	1.3 W	F	1%					
NWWs	Mini Non-Inductive	WW2 / NWW2	1.5W	2.1 W	J	5%			MWW1 / NMWW1		2,000
		WWS2 / NWWs2	2.5W	2.6 W							
		WW2A / NWW2A	2.5W	2.6 W							
		WW3 / NWW3	3W	3.2 W							
		WWS3 / NWWs3	3W	3.2 W							
		WW3A / NWW3A	3W	3.4 W							
		WW4 / NWW4	4W	4.3 W							
WWS4 / NWWs4	4W	4.3 W	500								
WW5 / NWW5	5W	5.1 W									
WWS5 / NWWs5	5W	5.1 W									
WW7 / NWW7	6.5W	7.2 W	250								
WWS7 / NWWs7	6.5W	7.2 W									
WW7B / NWW7B	7W	7.7 W									
WW10 / NWW10	10W	11.0 W									
WWS10 / NWWs10	10W	11.0 W									
MWW1 / NMWW1	1W	1.3 W									
MWW3 / NMWW3	3W	3.2 W									
MWW5 / NMWW5	5W	5.5 W									
MWW10 / NMWW10	10W	11.0 W									