

- 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
 - “B” packaging code denotes bulk packaging - contact Stackpole for package quantities

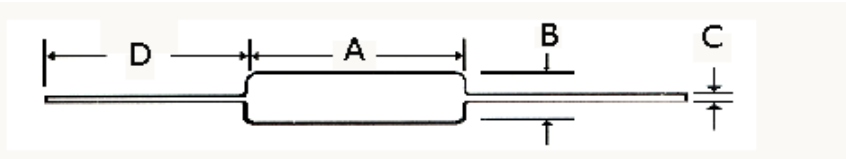


Electrical Specifications								
Type / Code	MIL-R-26 Ref.	Power Rating (W) @ 125°C	Power Rating (W) @ 70°C	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance (*)			
					0.1%	0.5%	1%	5%
WW12	-	0.4 W	0.5 W	$< 1\Omega = \pm 90\text{ppm}/^\circ\text{C}$ $1\Omega \text{ to } 10\Omega = \pm 50\text{ppm}/^\circ\text{C}$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

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

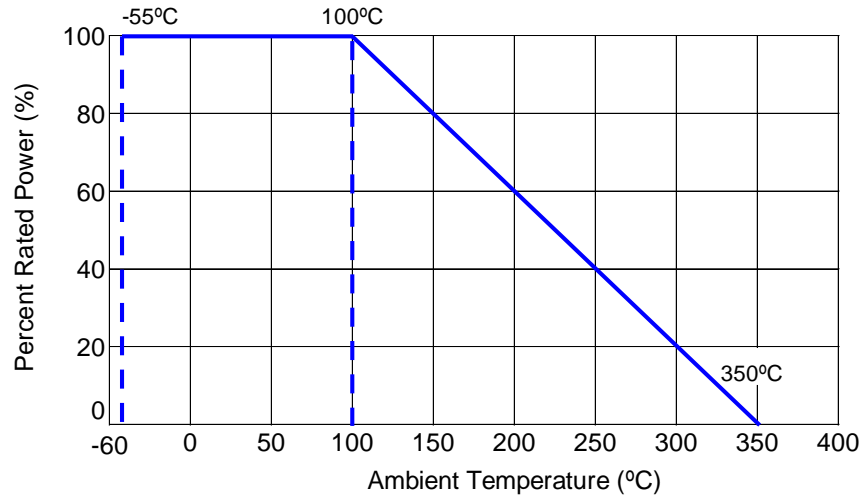


Mechanical Specifications					
Type / Code	A	B	C	D (Bulk) (1)	Unit
WW12 / NWW12	0.312 ± 0.062	0.110 ± 0.031	0.025 ± 0.002	1.500 typ.	inches
	7.92 ± 1.57	2.79 ± 0.79	0.64 ± 0.05	38.10 typ.	mm
WW1, WWS2 / NWW1, NWWS2	0.375 ± 0.062	0.110 ± 0.031	0.025 ± 0.002	1.500 typ.	inches
	9.53 ± 1.57	2.79 ± 0.79	0.64 ± 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

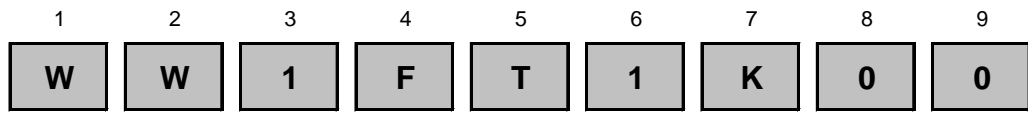
(1) See "Resistor Packaging Specification Document" for lead length dimension for tape and reel packaged product

(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	WW12 / NWW12	2,500	Four characters with the multiplier used as the decimal holder. 0.5 ohm = R500 1 ohm = 1R00 10 Kohm = 10K0
MWW	Molded	WW1 / NWW1	1W	1.1 W	D	0.5%			WW1 / NWW1		
NWW	Non-Inductive	WW1A / NWW1A	1W	1.3 W	F	1%			WWS2 / NWS2		
NWWWS	Mini Non-Inductive	WW2 / NWW2	1.5W	2.1 W	J	5%			WW1A / NWW1A		
		WWS2 / NWS2	2.5W	2.6 W					MWW1 / NMWW1		
		WW2A / NWW2A	2.5W	2.6 W					WW2 / NWW2		
		WW3 / NWW3	3W	3.2 W					WWS3 / NWS3		
		WWS3 / NWS3	3W	3.2 W					WW2A / NWW2A		
WW3A / NWW3A	3W	3.4 W	WW3 / NWW3	2,000							
WW4 / NWW4	4W	4.3 W	WWS4 / NWS4								
WWS4 / NWS4	4W	4.3 W	MWW3 / NMWW3								
WW5 / NWW5	5W	5.1 W	WW3A / NWW3A		500						
WWS5 / NWS5	5W	5.1 W	WW4 / NWW4								
WW7 / NWW7	6.5W	7.2 W	WWS5 / NWS5								
WWS7 / NWS7	6.5W	7.2 W	WW5 / NWW5								
WW7B / NWW7B	7W	7.7 W	WWS7 / NWS7								
WW10 / NWW10	10W	11.0 W	WW7 / NWW7	250							
WWS10 / NWS10	10W	11.0 W	WW7B / NWW7B								
MWW1 / NMWW1	1W	1.3 W	WWS10 / NWS10								
MWW3 / NMWW3	3W	3.2 W	MWW5 / NMWW5								
MWW5 / NMWW5	5W	5.5 W	WW10 / NWW10								
MWW10 / NMWW10	10W	11.0 W	MWW10 / NMWW10								
B	Bulk	Contact Stackpole for package quantities.									

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