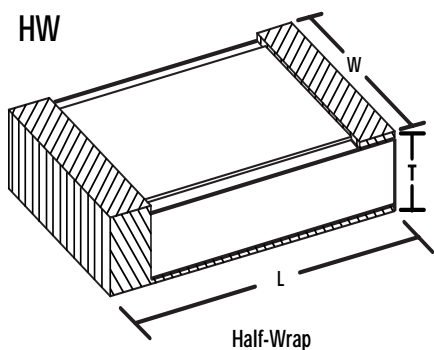
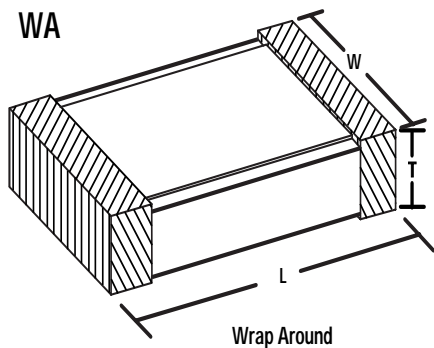


WA SERIES SURFACE MOUNT RESISTORS

DESCRIPTION

Surface mount thick film resistors, printed and fired on 96% alumina with a five sided wraparound termination, and a top conductor pad are offered in a variety of styles to fit a wide range of hybrid microelectronic and surface mount applications. Advanced processing techniques, and HI-Rel construction assure optimum performance where TCR, VCR and operating power are critical factors. WA styles meet and exceed the qualification requirements of MIL-PRF-55342.



STYLE & TYPE	CASE SIZE	LENGTH		WIDTH		THICKNESS Max		VOLTAGE RATING	POWER RATING
		(in)	(mm)	(in)	(mm)	(in)	(mm)		
WA20	0402	0.040	1.020	0.020	0.508	0.017	0.330	40V	0.040W
WA56	0503	0.050	1.140	0.030	0.762	0.017	0.432	80V	0.125W
WA81	0502	0.055	1.400	0.025	0.635	0.017	0.432	50V	0.100W
WA19	0504	0.055	1.270	0.040	1.020	0.017	0.432	68V	0.100W
WA82	0505	0.055	1.400	0.050	1.270	0.017	0.432	80V	0.125W
WA61	0604	0.065	1.520	0.040	1.020	0.022	0.559	65V	0.125W
WA86	0805	0.080	2.030	0.050	1.270	0.022	0.559	122V	0.200W
WA62	0805	0.085	2.160	0.050	1.270	0.022	0.559	122V	0.200W
WA5	1002	0.105	2.540	0.025	0.635	0.017	0.432	172V	0.100W
WA83	1005	0.105	2.670	0.050	1.270	0.022	0.559	177V	0.250W
WA90	1010	0.105	2.670	0.100	2.540	0.022	0.559	156V	0.500W
WA57	1206	0.125	3.050	0.060	1.520	0.022	0.559	200V	0.750W
WA87	1206	0.126	3.200	0.063	1.600	0.022	0.559	188V	0.250W
WA80	1505	0.155	3.940	0.050	1.270	0.022	0.559	302V	0.300W
WA88	2010	0.209	5.310	0.098	2.490	0.022	0.559	352V	0.800W
WA85	2307	0.230	5.840	0.072	1.830	0.022	0.559	380V	0.500W
WA17	2412	0.245	6.170	0.125	3.180	0.035	0.889	476V	2W
WA89	2512	0.259	6.580	0.124	3.150	0.035	0.889	476V	2W
WA30	5024	0.500	12.550	0.243	6.170	0.035	0.889	998V	4W
WA28	6632	0.666	16.920	0.326	8.280	0.035	0.889	1440V	8W
WA26	6645	0.666	16.920	0.495	12.570	0.035	0.889	1440V	8W

Power rating at 70°C derated linearly to 150°C. ($P = E^2/R$)
 Operating temperature range from -55°C to +150°C

ELECTRICAL PERFORMANCE CHARACTERISTICS

MIL-PRF-55342 TEST

MIL-PRF-55342 REQUIREMENT

MSI TYPICAL

Short Term Overload	±0.25%	±0.03%
High Temperature Exposure	±0.50%	±0.05%
Thermal Shock	±0.50%	±0.07%
Low Temperature Operation	±0.25%	±0.05%
Resistance to Bonding Exposure	±0.25%	±0.09%
Moisture Resistance	±0.50%	±0.06%
Stability (Life 70°C 1,000Hrs)	±0.50%	±0.04%
Stability (Life 70°C 10,000Hrs)	±2.00%	±0.07%

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WA SERIES SURFACE MOUNT RESISTORS

AVAILABLE TCR'S* LISTED BY STYLE AND VALUE

STYLE & TYPE	RESISTANCE RANGE IN OHMS													
	0.1 to <1	1 to <5	5 to <10	10 to <25	25 to <50	50 to <50K	50K to <100K	100K to <1M	1M to <10M	10M to <100M	100M to <250M	250M to <500M	500M to <750M	750M to <1G
WA 20	700	300	200	200	200	150	150	150	200	250	350	350	500	800
WA 56	700	350	150	150	150	150	100	200	100	200	300	400	500	800
WA 81	500	350	300	200	150	100	100	100	100	200	300	300	400	600
WA 19	700	300	150	150	150	100	200	200	300	300	350	400	600	800
WA 82	400	300	150	100	100	100	100	100	100	150	350	600	800	1000
WA 61	800	400	200	200	200	100	100	200	200	300	300	400	500	800
WA 86	400	200	200	150	150	100	100	100	100	100	300	300	400	600
WA 62	800	200	200	200	150	150	150	150	200	200	300	300	400	700
WA 5	1000	500	300	300	300	150	150	150	150	150	150	200	200	200
WA 83	600	300	250	200	150	100	100	100	100	200	200	300	400	600
WA 90	400	200	200	100	100	100	100	100	150	200	350	500	800	1000
WA 57	600	250	250	250	200	150	150	150	150	200	250	300	300	400
WA 87	400	200	100	100	100	100	100	100	100	150	200	300	500	600
WA 80	600	400	300	200	150	100	100	100	100	100	200	300	400	500
WA 88	400	200	100	100	100	100	100	100	100	150	300	300	500	600
WA 85	600	400	350	350	200	100	100	100	100	100	200	300	400	500
WA 17	600	200	200	200	200	150	100	100	150	200	250	300	500	600
WA 89	400	200	100	100	100	100	100	100	100	150	300	300	500	600
WA 30	800	400	300	200	200	200	200	200	200	300	300	300	400	500
WA 28	1000	600	400	300	200	150	150	150	200	200	300	300	500	800
WA 26	800	600	400	300	200	150	150	150	200	200	300	300	500	800

*Table indicates optimum TCR values, add 200 for standard values. Units in (±ppm/°C)

STANDARD TERMINATION MATERIALS

Untinned: Palladium Silver, Platinum Gold, Gold with no barrier metal and electrolytic Gold plating over Nickel barrier metal.
Solder Tinned: Palladium Silver, Platinum Gold, With or Without Nickel Barrier Metal

Standard Solder Sn62. Other compositions available including high temperature and Indium solders. Consult Factory.

PART NUMBER DESIGNATION

EXAMPLE: WA81PG-1001F-NS62TR: Wraparound (0.055 x 0.025 x 0.017), Pt Gold Term., 1KΩ, 1% Tol., Ni Barrier, Sn62 Solder, Tape & Reel

WA	81	PG	—	1001	F	—	N	S62	TR
MSI STYLE	TYPE NUMBER	BASE METAL		Value	TOLERANCE		METAL OPTIONS	SOLDER	SPECIFY OPTION
WA HW	See Above Table	PG = Platinum Gold PS = Palladium Silver		**See Note	E = 0.5% F = 1% G = 2% J = 5% K = 10% M = 20% N = 30% Z = >30%		B = Back Metal Style Only N = Nickel Barrier	S60 = Sn60 S62 = Sn62 S63 = Sn63 S96 = Sn96 I50 = In50 I75 = In75 U = No Solder	X = Special Requirements Code Available from Sales Agent. TL10 = Trimless to 10% TL20 = Trimless to 20% TLXX = Trimless Special TR = Tape and Reel. P = Optimum TCR, otherwise Std.

** RESISTANCE VALUE IDENTIFIER

Four digits (xxxx) with provisions for five digits (xxxxx) if necessary. The first three digits represent significant figures. The last digit represents the number of zeros to follow. When fractional values of an ohm are required, the letter "R" is used as a decimal point.



THICK FILM DIVISION

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