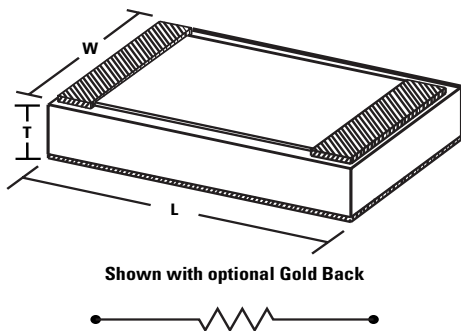


MICROWAVE CHIP RESISTORS

MSMW SERIES

All MSMW parts can be Wire-Bonded, Ribbon-Bonded and offered with Solder Bumps. Parts are manufactured using specialized Laser Trimming for Optimal Performance over Operating Frequency Range.



MECHANICAL DATA

SERIES	L	W	T	TOLERANCE
MSMW 21	0.020" x	0.010" x	0.010"	(±0.003")
MSMW 110	0.037" x	0.017" x	0.010"	(±0.003")
MSMW 112	0.050" x	0.050" x	0.010"	(±0.003")
MSMW 115	0.050" x	0.025" x	0.010"	(±0.003")
MSMW 118	0.021" x	0.017" x	0.010"	(±0.003")
MSMW 120	0.100" x	0.050" x	0.010"	(±0.003")
MSMW 121	0.100" x	0.100" x	0.010"	(±0.003")
MSMW 122	0.020" x	0.016" x	0.010"	(±0.003")
MSMW 124	0.150" x	0.085" x	0.010"	(±0.003")

ELECTRICAL DATA

SERIES	OHMIC VALUE	POWER RATING @ 70°C
MSMW 21	2Ω - 400Ω	50mW
MSMW 110	2Ω - 1KΩ	125mW
MSMW 112	2Ω - 3KΩ	125mW
MSMW 115	2Ω - 2KΩ	125mW
MSMW 118	2Ω - 300Ω	125mW
MSMW 120	5Ω - 5KΩ	125mW
MSMW 121	10Ω - 5KΩ	500mW
MSMW 122	2Ω - 360Ω	125mW
MSMW 124	10Ω - 5KΩ	500mW

ABSOLUTE TOLERANCE 1%, 2%, 5%, 10%
T.C.R. ±25ppm/°C STANDARD (NiCr); ±150ppm/°C STANDARD (TaN)

CONSULT SALES FOR OTHER VALUES / TOLERANCES

SERIES DATA

SUBSTRATE MATERIAL	99.6% ALUMINA STANDARD, QUARTZ** OPTIONAL
CURRENT NOISE	-20dB TYPICAL
OPERATING VOLTAGE	100 V MAX.
SHORT TERM OVERLOAD	5X RATED POWER, 25°C, 5 SEC., ±0.25% MAX. ΔR/R: ±0.1% MSI TYPICAL
HIGH TEMP EXPOSURE	150°C, 100 HRS., ±0.25% MAX. ΔR/R: ±0.03% MSI TYPICAL
THERMAL SHOCK	MIL-STD 202, METHOD 107F, ±0.25% MAX. ΔR/R: ±0.1% MSI TYPICAL
MOISTURE RESISTANCE	MIL-STD 202, METHOD 106, ±0.5% MAX. ΔR/R: ±0.1% MSI TYPICAL
STABILITY	1000 HRS., 70°C, 100% POWER, ±0.5% MAX. ΔR/R: ±0.1% MSI TYPICAL
OPERATING TEMP RANGE	-55°C TO +150°C
STORAGE TEMP	+150°C
STRAY DISTRIBUTED CAPACITANCE	
ALUMINA	0.06pF
QUARTZ	0.02pF

PART NUMBER DESIGNATION

MSMW	XX	XXXXX	X	X
	SUBSTRATE / RESISTIVE FILM	OHMIC VALUE	TOLERANCE	OPTION
21	AT = Alumina / TaN	5-Digit	F = 1%	F = ±100ppm/°C
110, 112	AN = Alumina / NiCr	Number: 1st	G = 2%	G = Gold Bond
115, 118	QT = Quartz / TaN	4 Digits Are	J = 5%	Pads Std.*
120, 121	QN = Quartz / NiCr	Significant	K = 10%	GB = Gold Backside
122, 124	PT = Polished / TaN	With "R" As		T = With Solder
	PN = Polished / NiCr	Decimal		Bumps
		Point When		T3 = With Leadfree
		Required.		Solder Bumps
		5th Digit		
		Represents		
		Number of		
		Zeros.		

EXAMPLE: MSMW 110AN-10000F-GB = 110 Series, Alumina Substrate, 1KΩ, ±1% Tol., ±25ppm/°C, Nichrome, Gold Backside.

*Always used when no other option is required.

**Consult Sales for power capabilities on Quartz substrate



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DCN TF 109-G-0306

MICROWAVE
& RF
RESISTORS