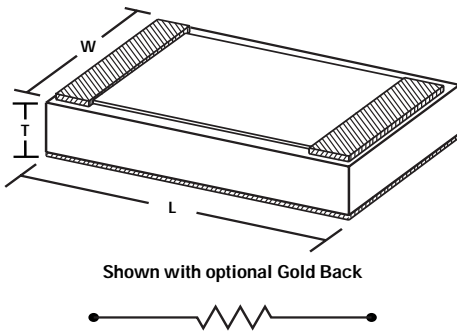


# MICROWAVE CHIP RESISTORS

## MSMW SERIES



### MECHANICAL DATA

SERIES	L	W	T	TOLERANCE
MSMW 110	0.040" x	0.020" 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 110	2Ω – 18KΩ	125mW
MSMW 112	10Ω – 3KΩ	125mW
MSMW 115	2Ω – 800Ω	125mW
MSMW 118	2Ω – 300Ω	125mW
MSMW 120	5Ω – 250Ω	125mW
MSMW 121	3Ω – 3KΩ	500mW
MSMW 122	2Ω – 300Ω	125mW
MSMW 124	25Ω – 400Ω	500mW

ABSOLUTE TOLERANCE 1%, 2%, 5%, 10%  
 T.C.R. ±50ppm/°C STANDARD (NiCr); ±150ppm/°C STANDARD (TaN)

CONSULT SALES FOR OTHER VALUES / TOLERANCES AND NICHROME VALUES UNDER 50Ω.

### 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
FREQUENCY	DC THROUGH 20 GHz
STRAY DISTRIBUTED CAPACITANCE	
ALUMINA / NiCr	0.06pF
ALUMINA / TaN	0.08pF
QUARTZ / NiCr	0.02pF
QUARTZ / TaN	0.05pF

### PART NUMBER DESIGNATION

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

EXAMPLES: MSMW 110AT-10001F-GB = 110 Series, Alumina Substrate, 10KΩ, ±1% Tol., ±150ppm/°C, Tantalum, Gold Backside.  
 MSMW 110AT-5R000K-G = 110 Series, Alumina Substrate, 5Ω, ±10% Tol., ±150ppm/°C, Tantalum, Bare Back.

\*Always used when no other option is required.

\*\*Consult sales for power capabilities on Quartz substrate



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