



MCR SERIES ~ Thick Film Chip Resistors



FEATURES

- Smaller size of 0201 is available
- Products with Lead Free terminations meet RoHS Compliant .

PART NUMBERING SYSTEM

<u>M C R</u>	<u>0 2 0 1</u>	-	<u>2 2 2 F</u>	-	<u>L F</u>
TYPE	DIMENSIONS		IMPEDANCE		LEAD FREE

SHAPES AND DIMENSIONS

UNIT : mm

TYPE	DIMENSIONS	EIA	RESISTANCE TOLERANCE
MCR0201	0.60x0.30	0201	F=±1% ; J=±5%
MCR0402	1.00x0.50	0402	F=±1% ; J=±5%
MCR0603	1.60x0.80	0603	F=±1% ; J=±5%
MCR0805	2.00x1.25	0805	F=±1% ; J=±5%
MCR1206	3.10x1.55	1206	F=±1% ; J=±5%
MCR1210	3.10x2.50	1210	F=±1% ; J=±5%
MCR2010	5.00x2.50	2010	F=±1% ; J=±5%
MCR2512	6.30x3.20	2512	F=±1% ; J=±5%

DIMENSIONS

TYPE	L	W	T	D1	D2
MCR0201	0.60±0.03	0.30±0.03	0.23±0.03	0.15±0.05	0.15±0.05
MCR0402	1.00±0.10	0.50±0.05	0.35±0.05	0.20±0.10	0.25±0.10
MCR0603	1.60±0.15	0.80±0.10	0.45±0.10	0.30±0.20	0.20±0.20
MCR0805	2.00±0.15	1.25±0.10	0.50±0.10	0.35±0.20	0.40±0.20
MCR1206	3.10±0.20	1.55±0.10	0.55±0.10	0.45±0.20	0.40±0.20
MCR1210	3.10±0.20	2.55±0.20	0.55±0.10	0.50±0.20	0.50±0.20
MCR2010	5.00±0.20	2.50±0.20	0.55±0.10	0.60±0.20	0.50±0.20
MCR2512	6.30±0.20	3.20±0.20	0.55±0.10	0.60±0.20	0.50±0.20



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ELECTRICAL SPECIFICATION TABLE

TYPE	Power Rating @ 70°C	Operating Temp. Range	Max Operating Voltage	Max Overloading Voltage	Resistance Tolerance	Resistance Range	TCR PPM/°C)
MCR0201-E96	1/20W	-55 to +125°C	15V	30V	±1%	10 to 1M	200
MCR0201-E24	1/20W	-55 to +125°C	15V	30V	±1%	10 to 1M	200
MCR0201-E24	1/20W	-55 to +125°C	15V	30V	±5%	10 to 1M	200
MCR0402-E96	1/16W	-55 to +125°C	50V	100V	±1%	1 to 9.76	100
MCR0402-E24	1/16W	-55 to +125°C	50V	100V	±1%	10 to 1M	200
MCR0402-E24	1/16W	-55 to +125°C	50V	100V	±5%	1 to 9.76	200
MCR0402-E24	1/16W	-55 to +125°C	50V	100V	±5%	10 to 1M	200
MCR0402-E24	1/16W	-55 to +125°C	50V	100V	±5%	1.1to 10M	200
MCR0603-E96	1/10W	-55 to +125°C	50V	100V	±1%	1 to 9.76	200
MCR0603-E24	1/10W	-55 to +125°C	50V	100V	±1%	10 to 1M	100
MCR0603-E24	1/10W	-55 to +125°C	50V	100V	±5%	1 to 9.76	200
MCR0603-E24	1/10W	-55 to +125°C	50V	100V	±5%	10 to 1M	100
MCR0603-E24	1/10W	-55 to +125°C	50V	100V	±5%	1.1to 10M	200
MCR0805-E96	1/8W	-55 to +125°C	150V	300V	±1%	1 to 9.76	200
MCR0805-E24	1/8W	-55 to +125°C	150V	300V	±1%	10 to 1M	100
MCR0805-E24	1/8W	-55 to +125°C	150V	300V	±5%	1 to 9.76	200
MCR0805-E24	1/8W	-55 to +125°C	150V	300V	±5%	10 to 1M	100
MCR0805-E24	1/8W	-55 to +125°C	150V	300V	±5%	1.1to 10M	200
MCR1206-E96	1/4W	-55 to +125°C	200V	400V	±1%	1 to 9.76	200
MCR1206-E24	1/4W	-55 to +125°C	200V	400V	±1%	10 to 1M	100
MCR1206-E24	1/4W	-55 to +125°C	200V	400V	±5%	1 to 9.76	200
MCR1206-E24	1/4W	-55 to +125°C	200V	400V	±5%	10 to 1M	100
MCR1206-E96	1/3W	-55 to +125°C	200V	400V	±1%	1 to 9.76	200
MCR1206-E24	1/3W	-55 to +125°C	200V	400V	±1%	10 to 1M	100
MCR1206-E24	1/3W	-55 to +125°C	200V	400V	±5%	1 to 9.76	200
MCR1206-E24	1/3W	-55 to +125	200V	400V	±5%	10 to 1MΩ	100
MCR1206-E24	1/3W	-55 to +125	200V	400V	±5%	1.1to 10MΩ	200

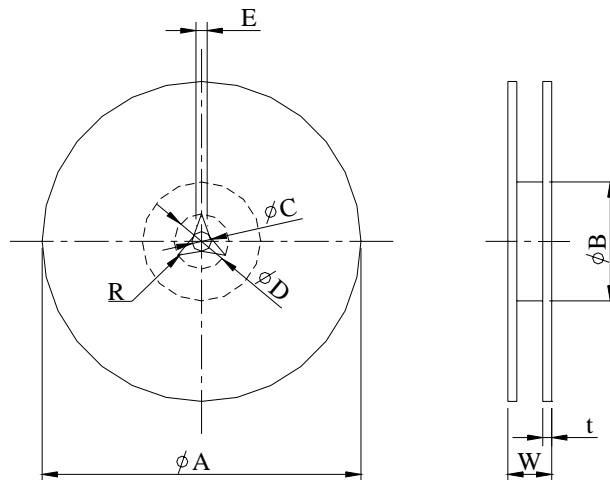


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ELECTRICAL SPECIFICATION TABLE

TYPE	Power Rating @ 70°C	Operating Temp. Range	Operating Voltage(Max)	Overloading Voltage(Max)	Resistance Tolerance	Resistance Range	TCR PPM/°C)
MCR2010-E96	1/2W	-55 to +125°C	200V	400V	±1%	1 to 9.76	200
MCR2010-E24	1/2W	-55 to +125°C	200V	400V	±1%	10 to 1M	100
MCR2010-E24	1/2W	-55 to +125°C	200V	400V	±5%	1 to 9.76	200
MCR2010-E24	1/2W	-55 to +125°C	200V	400V	±5%	10 to 1M	100
MCR2010-E24	1/2W	-55 to +125°C	200V	400V	±5%	1.1to 10M	200
MCR2512-E96	1W	-55 to +125°C	200V	400V	±1%	1 to 9.76	200
MCR2512-E24	1W	-55 to +125°C	200V	400V	±1%	10 to 1M	100
MCR2512-E24	1W	-55 to +125°C	200V	400V	±5%	1 to 9.76	200
MCR2512-E24	1W	-55 to +125°C	200V	400V	±5%	10 to 1M	100
MCR2512-E24	1W	-55 to +125°C	200V	400V	±5%	1.1to 10M	200

PACKAGING SPECIFICATION



TYPE	A	B	C	D	E	W	T	Paper Tape (EA)	Embossed Tape(EA)
MCR0201	178±2	60±1	13±0.2	21±0.8	2	9±0.5	11.4±1.0	10,000	—
MCR0402	178±2	60±1	13±0.2	21±0.8	2	9±0.5	11.4±1.0	10,000	—
MCR0603	178±2	60±1	13±0.2	21±0.8	2	9±0.5	11.4±1.0	5,000	—
MCR0805	178±2	60±1	13±0.2	21±0.8	2	9±0.5	11.4±1.0	5,000	—
MCR1206	178±2	60±1	13±0.2	21±0.8	2	9±0.5	11.4±1.0	5,000	—
MCR1210	178±2	60±1	13±0.2	21±0.8	2	9±0.5	11.4±1.0	5,000	—
MCR2010	178±2	60±1	13±0.2	21±0.8	2	13.5±0.5	15.4±1.0	—	4,000
MCR2512	178±2	60±1	13±0.2	21±0.8	2	13.5±0.5	15.4±1.0	—	4,000



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ENVIRONMENTAL CHARACTERISTICS

NO	ITEM	SPECIFICATION	TEST METHOD
1	Temperature coefficient of Resistance	As spec.	JIS-C-5202 5.2 / IEC 60115-1 4.8 +25/-55/+25/+125,+155/+25°C
2	Thermal Shock	±(1%+0.05)	MIL-STD-202F, Method 107 -55°C to +125,+155°C 5 cycles
3	Short Time Overload	±(2%+0.05)	MIL-R-55342D 4.7.5 RCWV*2.5 or Max overloading Voltage , 5 seconds
4	High Temperature Exposure	±(2%+0.05)	MIL-R-55342D 4.7.6 1000 hours @ 125°C without load
5	Load Life	±(3%+0.05)	MIL-STD-202F, M108 ; RCWV, 70°C ,1.5 hours, 0.5 hours off , total 1000 to 1048 hours
6	Resistance of Soldering Heat	±(1%+0.05)	MIL-R-55342D 4.7.7 260°C±5°C ,10±1 seconds
7	Moisture Resistance	±(2%+0.05)	MIL-STD-202F, Method 103 40°C ,90 to 95%RH, 1000 hours
8	Low Temperature Operation	±(1%+0.05)	MIL-R-55342D 4.7.4 1hour ,-55°C ,followed by 45 minutes of RCWV
9	Bending Strength	±(1%+0.05)	JIS-C-5202 6.1.4 5mm deflection in rather direction , 10 seconds