Automotive and Anti-Sulfuration Chip Resistor 0603

RoHS Compliant

Description

The resistors are constructed in a high grade ceramic body (aluminium oxide). Internal metal electrodes are added at each end and connected by a resistive paste that is applied to the top surface of the substrate. The composition of the paste is adjusted to give the approximate resistance required and the value is trimmed to within tolerance by laser cutting of this resistive layer

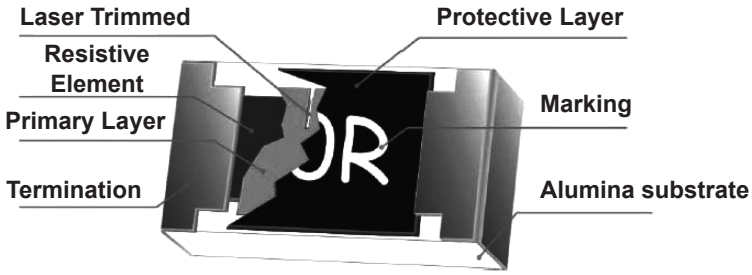
Features:

- High reliability and stability ±1%
- Sulfuration resistant
- Automotive grade AEC Q-200 compliant
- 100% CCD inspection
- Lead-free

Applications:

Automotive application
Consumer electrical equipment
EDP, computer application
Telecom application

The resistive layer is covered with a protective coat. Finally, the two external end terminations are added. For ease of soldering the outer layer of these end terminations is a Tin (lead free) alloy



Construction of a Chip-R

Quick Reference Data

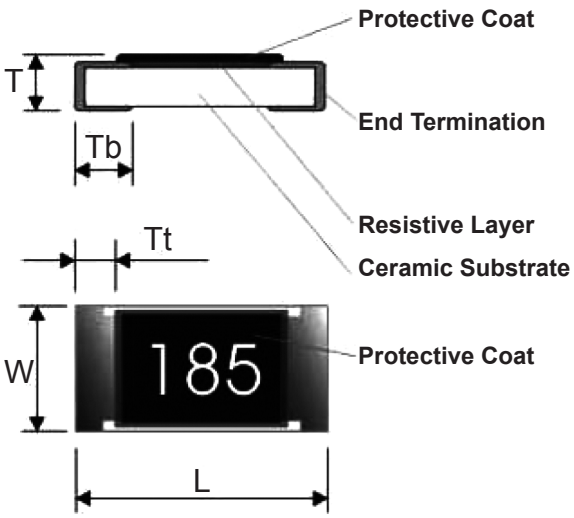
Item	General Specification	
Series no.	MCMR06	
Size code	0603	
Resistance range	1Ω to 10MΩ (±5% tolerance), Jumper 1Ω to 10MΩ (±1% tolerance)	
Resistance tolerance	±1% E96 / E24	±5% E24
TCR (ppm/°C) R > 1MΩ 10Ω < R ≤ 1MΩ R ≤ 10Ω	 ≤ +200 ≤ +100 -200 to +400	
Maximum dissipation at T_{amb} = 70°C	1/10W	
Maximum operation voltage (DC or RMS)	75V	
Maximum overload voltage (DC or RMS)	150V	
Climatic category (IEC 60068)	55/155/56	

Note:

1. This is the maximum voltage that may be continuously supplied to the resistor element, see “IEC publication 60115-8”
2. Maximum operation voltage : So called RCWV (rated continuous working voltage) is determined by

$$RCWV = \sqrt{\text{Rated Power} \times \text{Resistance Value}} \text{ or maximum RCWV listed above, whichever is lower}$$

3. The resistance of jumper is defined < 0.05Ω

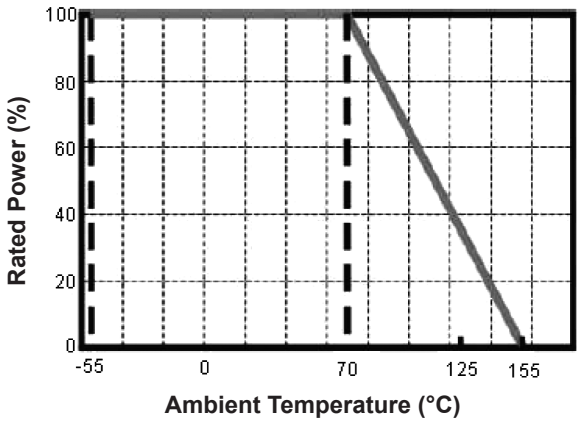


Dimensions (mm)

MCMR06 (0603)	L	W	T	Tb	Tt
	1.6 ±0.1	0.8 ±0.1	0.45 ±0.15	0.3 ±0.15	0.2 ±0.1

Derating

The power that the resistor can dissipate depends on the operating temperature



Max. dissipation in percentage of rated power as a function of the ambient temperature

Marking

Size \ No. of Digit of Code \ Tolerance	±5%	±1%
MCMR06 (0603)	3-digits marking	3-digits marking

3-digits marking (±5% : 0603)

Each resistor is marked with a three digits code on the protective coating to designate the nominal resistance value

3-Digits Marking (1% : 0603)

Nominal Resistance				Description											
1. E-24 series				As 0603 WR06X ±5%											
2. E-96 series				The 1st two digit codes are referring to the CODE on the table, the 3rd code is the index of resistance value: Y = 10^{-2}, X = 10^{-1}, A = 10^{0}, B = 10^{1}, C = 10^{2}, D = 10^{3}, E = 10^{4}, F = 10^{5} EX : 17.8Ω = 25 X, 178Ω = 25 A, 1K78 = 25 B 17K8 = 25 C, 178 K = 25 D, 1M78 = 25 E											
3. Remark				There is no marking for the items are not under E-24 and E-96 series											
Code	R_value	Code	R_value	Code	R_value	Code	R_value	Code	R_value	Code	R_value	Code	R_value	Code	R_value
1	100	13	133	25	178	37	237	49	316	61	422	73	562	85	750
2	102	14	137	26	182	38	243	50	324	62	432	74	576	86	768
3	105	15	140	27	187	39	249	51	332	63	442	75	590	87	787
4	107	16	143	28	191	40	255	52	340	64	453	76	604	88	806
5	110	17	147	29	196	41	261	53	348	65	464	77	619	89	825
6	113	18	150	30	200	42	267	54	357	66	475	78	634	90	845
7	115	19	154	31	205	43	274	55	365	67	487	79	649	91	866
8	118	20	158	32	210	44	280	56	374	68	499	80	665	92	887
9	121	21	162	33	215	45	287	57	383	69	511	81	681	93	909
10	124	22	165	34	221	46	294	58	392	70	523	82	698	94	931
11	127	23	169	35	226	47	301	59	402	71	536	83	715	95	953
12	130	24	174	36	232	48	309	60	412	72	549	84	732	96	976

Example

Resistance	10Ω	12Ω	100Ω	6,800Ω	47,000Ω
3-digits marking (0603 ±5%)	100	120	101	682	473

Functional Description

Product characterization

Standard values of nominal resistance are taken from the E24 series for resistors with a tolerance of ±5%, and E24+E96 series for resistors with a tolerance of ±1%. The values of the E24 / E96 series are in accordance with “IEC publication 60063”

Mounting:

Due to their rectangular shapes and small tolerances, surface mountable resistors are suitable for handling by automatic placement systems

Chip placement can be on ceramic substrates and printed-circuit boards (PCBs)

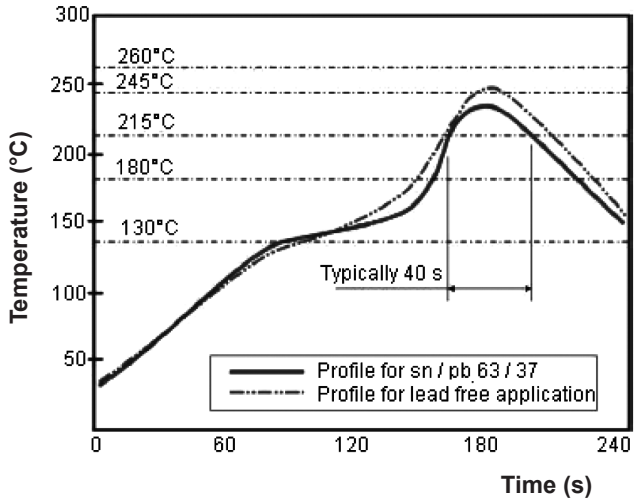
Electrical connection to the circuit is by individual soldering condition

The end terminations guarantee a reliable contact

Soldering Condition

The robust construction of chip resistors allows them to be completely immersed in a solder bath of 260°C for 10 seconds. Therefore, it is possible to mount surface mount resistors on one side of a PCB and other discrete components on the reverse (mixed PCBs)

Surface mount resistors are tested for solderability at 235°C during 2 seconds. The test condition for no leaching is 260°C for 30 seconds. Typical examples of soldering processes that provide reliable joints without any damage are given in below.



Infrared soldering profile for Chip Resistors

Test and Requirements

Essentially all tests are carried out according to the schedule of IEC publication 115-8, category LCT/UCT/56 (rated temperature range : Lower Category Temperature, Upper Category Temperature; damp heat, long term, 56 days). The testing also meets the requirements specified by EIA, EIAJ and JIS

The tests are carried out in accordance with IEC publication 68, “Recommended basic climatic and mechanical robustness testing procedure for electronic components” and under standard atmospheric conditions according to IEC 60068-1, sub-clause 5.3. Unless otherwise specified, the following value supplied :

Temperature : 15°C to 35°C

Relative humidity : 45% to 75%

Air pressure : 86kPa to 106kPa (860 mbar to 1,060 mbar)

All soldering tests are performed with midly activated flux

Test and Requirements

Test	Procedure / Test Method	Requirement	
		Resistance ±5%, ±1%	0Ω
Electrical Characteristics JISC5201-1: 1998 Clause 4.8	- DC resistance values measurement - Temperature Coefficient of Resistance (T.C.R) Natural resistance change per change in degree centigrade $\frac{R2 - R1}{R1 (t2 - t1)} \times 10^6$ (ppm/°C) t_1 : 20°C +5°C -1°C R1 : Resistance at reference temperature R2 : Resistance at test temperature	Within the specified tolerance Refer to “Quick Reference Data”	
Resistance to soldering heat (R.S.H) MIL-STD-202 method 210	Un-mounted chips completely immersed for 10 ±1 second in a SAC solder bath at 270°C ±5°C	ΔR/R Max. ± (0.5%+0.05Ω) No visible damage	< 50mΩ
Solderability J-STD-002	a) Bake the sample for 155°C dwell time 4 hours / solder dipping 235°C / 5 s b) Steam the sample dwell time 1 hour/ solder dipping 215°C/ 5 s c) Steam the sample dwell time 1 hour/ solder dipping 260°C / 7 s	95% coverage minimum, good tinning No visible damage	
Temperature cycling JESD22 method JA-104	1,000 cycles, -55°C to +155°C, dwell time 5 to 10mins	ΔR/R Max. ± (0.5%+0.05Ω) No visible damage	< 50mΩ
Moisture Resistance MIL-STD-202 method 106	65 ±2°C, 80 to 100% RH, 10 cycles, 24 hours / cycle	ΔR/R Max. ± (0.5%+0.05Ω) No visible damage	< 50mΩ
Bias Humidity MIL-STD-202 method 103	1,000 +48/-0 hours; 85°C, 85% RH, 10% of operation Power	ΔR/R Max. ± (1%+0.05Ω) No visible damage	< 50mΩ
Operational Life MIL-STD-202 method 108	1,000 +48/-0 hours; 35% of operation power, 125 ±2°C	ΔR/R Max. ± (1%+0.05 Ω) No visible damage	< 50mΩ
High Temperature Exposure MIL-STD-202 method 108	1,000+48/-0 hours; without load in a temperature chamber controlled 155±3°C	ΔR/R Max. ± (1%+0.05 Ω) No visible damage	< 50mΩ
Mechanical Shock MIL-STD-202 method 213	1/2 sine pulse / 1,500 g peak / Velocity 15.4 ft/s	Within the specified tolerance No visible damage	< 50mΩ
Board Flex AEC-Q200-005	Resistors mounted on a 90 mm glass epoxy resin PCB(FR4), bending once 2 mm for 10 s	ΔR/R Max. ± (1%+0.05 Ω) No visible damage	< 50mΩ
Terminal strength AEC-Q200-006	Pressurizing force: 1 Kg, Test time: 60±1 s	No remarkable damage or removal of the terminations	
Vibration MIL-STD-202 method 204	Test 5 g’s for 20 minimum, 12 cycles each of 3 orientations	ΔR/R Max. ± (1%+0.05 Ω) No visible damage	< 50mΩ
Thermal shock MIL-STD-202 method 107	Test –55 to 155 / dwell time 15 minimum / maximum transfer time 20 seconds 300 cycles	ΔR/R Max. ± (0.5%+0.05 Ω) No visible damage	< 50mΩ
ESD AEC-Q200-002	Test contact 1 KV (0.5 KV for 0402 only)	ΔR/R Max. ± (1%+0.05 Ω) No visible damage	< 50mΩ

Test Condition for Jumper (0Ω)

Item	MCMR06 (0603)
Power rating at +70°C	1/10 W
Resistance	Max. 50mΩ
Rated current	1A
Peak current	3A
Operating temperature	-55°C to +155°C

MCMR06 (0603):

1. Reeled tape packaging : 8 mm width paper taping 5,000 pieces per 7” reel, 10 k pieces per 10” reel, 20 k pieces per 13” reel
2. Bulk packaging : 5,000 pieces per poly-bag

Part Number Table

Description	Part Number
Resistor, 0603, 10M, 1%, Anti Sulfur	MCMR06W1005FTL
Resistor, 0603, 1M18, 1%, Anti Sulfur	MCMR06W1184FTL
Resistor, 0603, 1M54, 1%, Anti Sulfur	MCMR06W1544FTL
Resistor, 0603, 2M, 1%, Anti Sulfur	MCMR06W2004FTL
Resistor, 0603, 2M61, 1%, Anti Sulfur	MCMR06W2614FTL
Resistor, 0603, 3M3, 1%, Anti Sulfur	MCMR06W3304FTL
Resistor, 0603, 4R7, 1%, Anti Sulfur	MCMR06W4R70FTL
Resistor, 0R, 100mW, 0.05R, Anti Sulphur	MCMR06X000 PTL
Resistor, 10R, 0603, 5%, Anti Sulfur	MCMR06X100 JTL
Resistor, 0603, 100R, 1%, Anti Sulfur	MCMR06X1000FTL
Resistor, 1K, 100mW, 1%, Anti Sulphur	MCMR06X1001FTL
Resistor, 10K, 100mW, 1%, Anti Sulphur	MCMR06X1002FTL
Resistor, 100K, 100mW, 1%, Anti Sulphur	MCMR06X1003FTL
Resistor, 1MR, 100mW, 1%, Anti Sulphur	MCMR06X1004FTL
Resistor, 100R, 0603, 5%, Anti Sulfur	MCMR06X101 JTL
Resistor, 1K, 0603, 5%, Anti Sulfur	MCMR06X102 JTL
Resistor, 0603, 102K, 1%, Anti Sulfur	MCMR06X1023FTL
Resistor, 10K, 0603, 5%, Anti Sulfur	MCMR06X103 JTL
Resistor, 100K, 0603, 5%, Anti Sulfur	MCMR06X104 JTL
Resistor, 1M, 0603, 5%, Anti Sulfur	MCMR06X105 JTL
Resistor, 10M, 0603, 5%, Anti Sulfur	MCMR06X106 JTL
Resistor, 0603, 1K07, 1%, Anti Sulfur	MCMR06X1071FTL
Resistor, 0603, 10R, 1%, Anti Sulfur	MCMR06X10R0FTL

Description	Part Number
Resistor, 0603, 1K1, 1%, Anti Sulfur	MCMR06X1101FTL
Resistor, 0603, 11K, 1%, Anti Sulfur	MCMR06X1102FTL
Resistor, 0603, 1K13, 1%, Anti Sulfur	MCMR06X1131FTL
Resistor, 0603, 1K15, 1%, Anti Sulfur	MCMR06X1151FTL
Resistor, 0603, 115K, 1%, Anti Sulfur	MCMR06X1153FTL
Resistor, 0603, 11K8, 1%, Anti Sulfur	MCMR06X1182FTL
Resistor, 0603, 120R, 1%, Anti Sulfur	MCMR06X1200FTL
Resistor, 0603, 1K2, 1%, Anti Sulfur	MCMR06X1201FTL
Resistor, 0603, 12K, 1%, Anti Sulfur	MCMR06X1202FTL
Resistor, 0603, 120K, 1%, Anti Sulfur	MCMR06X1203FTL
Resistor, 0603, 121R, 1%, Anti Sulfur	MCMR06X1210FTL
Resistor, 0603, 1K21, 1%, Anti Sulfur	MCMR06X1211FTL
Resistor, 0603, 121K, 1%, Anti Sulfur	MCMR06X1213FTL
Resistor, 1K2, 0603, 5%, Anti Sulfur	MCMR06X122 JTL
Resistor, 0603, 1K24, 1%, Anti Sulfur	MCMR06X1241FTL
Resistor, 1M2, 0603, 5%, Anti Sulfur	MCMR06X125 JTL
Resistor, 0603, 1K27, 1%, Anti Sulfur	MCMR06X1271FTL
Resistor, 0603, 12R, 1%, Anti Sulfur	MCMR06X12R0FTL
Resistor, 0603, 130R, 1%, Anti Sulfur	MCMR06X1300FTL
Resistor, 0603, 130K, 1%, Anti Sulfur	MCMR06X1303FTL
Resistor, 0603, 13K7, 1%, Anti Sulfur	MCMR06X1372FTL
Resistor, 0603, 1K4, 1%, Anti Sulfur	MCMR06X1401FTL
Resistor, 0603, 14K, 1%, Anti Sulfur	MCMR06X1402FTL
Resistor, 0603, 1K71, 1%, Anti Sulfur	MCMR06X1471FTL
Resistor, 0603, 150R, 1%, Anti Sulfur	MCMR06X1500FTL
Resistor, 0603, 1K5, 1%, Anti Sulfur	MCMR06X1501FTL
Resistor, 15K, 100mW, 1%, Anti Sulphur	MCMR06X1502FTL
Resistor, 0603, 150K, 1%, Anti Sulfur	MCMR06X1503FTL
Resistor, 150R, 0603, 5%, Anti Sulfur	MCMR06X151 JTL
Resistor, 1K5, 0603, 5%, Anti Sulfur	MCMR06X152 JTL
Resistor, 150K, 0603, 5%, Anti Sulfur	MCMR06X154 JTL
Resistor, 0603, 15K4, 1%, Anti Sulfur	MCMR06X1542FTL
Resistor, 0603, 15K8, 1%, Anti Sulfur	MCMR06X1582FTL
Resistor, 0603, 1K6, 1%, Anti Sulfur	MCMR06X1601FTL
Resistor, 0603, 16K, 1%, Anti Sulfur	MCMR06X1602FTL
Resistor, 16K, 0603, 5%, Anti Sulfur	MCMR06X163 JTL
Resistor, 0603, 165K, 1%, Anti Sulfur	MCMR06X1653FTL

Description	Part Number
Resistor, 0603, 174R, 1%, Anti Sulfur	MCMR06X1740FTL
Resistor, 0603, 1K74, 1%, Anti Sulfur	MCMR06X1741FTL
Resistor, 0603, 1K8, 1%, Anti Sulfur	MCMR06X1801FTL
Resistor, 0603, 18K, 1%, Anti Sulfur	MCMR06X1802FTL
Resistor, 0603, 180K, 1%, Anti Sulfur	MCMR06X1803FTL
Resistor, 180R, 0603, 5%, Anti Sulfur	MCMR06X181 JTL
Resistor, 0603, 1K82, 1%, Anti Sulfur	MCMR06X1821FTL
Resistor, 180K, 0603, 5%, Anti Sulfur	MCMR06X184 JTL
Resistor, 0603, 18K7, 1%, Anti Sulfur	MCMR06X1872FTL
Resistor, 0603, 196R, 1%, Anti Sulfur	MCMR06X1960FTL
Resistor, 0603, 1K96, 1%, Anti Sulfur	MCMR06X1961FTL
Resistor, 0603, 19K6, 1%, Anti Sulfur	MCMR06X1962FTL
Resistor, 1R0, 0603, 5%, Anti Sulfur	MCMR06X1R0 JTL
Resistor, 0603, 200R, 1%, Anti Sulfur	MCMR06X2000FTL
Resistor, 0603, 2K, 1%, Anti Sulfur	MCMR06X2001FTL
Resistor, 0603, 20K, 1%, Anti Sulfur	MCMR06X2002FTL
Resistor, 0603, 200K, 1%, Anti Sulfur	MCMR06X2003FTL
Resistor, 2K, 0603, 5%, Anti Sulfur	MCMR06X202 JTL
Resistor, 20K, 0603, 5%, Anti Sulfur	MCMR06X203 JTL
Resistor, 0603, 20R, 1%, Anti Sulfur	MCMR06X20R0FTL
Resistor, 0603, 2K1, 1%, Anti Sulfur	MCMR06X2101FTL
Resistor, 0603, 2K15, 1%, Anti Sulfur	MCMR06X2151FTL
Resistor, 0603, 220R, 1%, Anti Sulfur	MCMR06X2200FTL
Resistor, 0603, 2K2, 1%, Anti Sulfur	MCMR06X2201FTL
Resistor, 0603, 22K, 1%, Anti Sulfur	MCMR06X2202FTL
Resistor, 0603, 220K, 1%, Anti Sulfur	MCMR06X2203FTL
Resistor, 0603, 22K1, 1%, Anti Sulfur	MCMR06X2212FTL
Resistor, 0603, 221K, 1%, Anti Sulfur	MCMR06X2213FTL
Resistor, 0603, 2M21, 1%, Anti Sulfur	MCMR06X2214FTL
Resistor, 2K2, 0603, 5%, Anti Sulfur	MCMR06X222 JTL
Resistor, 220K, 0603, 5%, Anti Sulfur	MCMR06X224 JTL
Resistor, 0603, 22R1, 1%, Anti Sulfur	MCMR06X22R1FTL
Resistor, 0603, 23K2, 1%, Anti Sulfur	MCMR06X2322FTL
Resistor, 0603, 23K7, 1%, Anti Sulfur	MCMR06X2372FTL
Resistor, 0603, 240R, 1%, Anti Sulfur	MCMR06X2400FTL
Resistor, 0603, 2K4, 1%, Anti Sulfur	MCMR06X2401FTL
Resistor, 0603, 24K, 1%, Anti Sulfur	MCMR06X2402FTL

Description	Part Number
Resistor, 2K4, 0603, 5%, Anti Sulfur	MCMR06X242 JTL
Resistor, 0603, 249R, 1%, Anti Sulfur	MCMR06X2490FTL
Resistor, 0603, 24K9, 1%, Anti Sulfur	MCMR06X2492FTL
Resistor, 0603, 24R3, 1%, Anti Sulfur	MCMR06X24R3FTL
Resistor, 0603, 2K55, 1%, Anti Sulfur	MCMR06X2551FTL
Resistor, 0603, 2K61, 1%, Anti Sulfur	MCMR06X2611FTL
Resistor, 0603, 270R, 1%, Anti Sulfur	MCMR06X2700FTL
Resistor, 0603, 2K7, 1%, Anti Sulfur	MCMR06X2701FTL
Resistor, 0603, 27K, 1%, Anti Sulfur	MCMR06X2702FTL
Resistor, 0603, 270K, 1%, Anti Sulfur	MCMR06X2703FTL
Resistor, 27K, 0603, 5%, Anti Sulfur	MCMR06X273 JTL
Resistor, 0603, 28K, 1%, Anti Sulfur	MCMR06X2802FTL
Resistor, 0603, 2K94, 1%, Anti Sulfur	MCMR06X2941FTL
Resistor, 0603, 294K, 1%, Anti Sulfur	MCMR06X2943FTL
Resistor, 2R2, 0603, 5%, Anti Sulfur	MCMR06X2R2 JTL
Resistor, 0603, 3K, 1%, Anti Sulfur	MCMR06X3001FTL
Resistor, 0603, 30K, 1%, Anti Sulfur	MCMR06X3002FTL
Resistor, 300R, 0603, 5%, Anti Sulfur	MCMR06X301 JTL
Resistor, 0603, 3K01, 1%, Anti Sulfur	MCMR06X3011FTL
Resistor, 0603, 30K1, 1%, Anti Sulfur	MCMR06X3012FTL
Resistor, 300K, 0603, 5%, Anti Sulfur	MCMR06X304 JTL
Resistor, 0603, 3K16, 1%, Anti Sulfur	MCMR06X3161FTL
Resistor, 0603, 31K6, 1%, Anti Sulfur	MCMR06X3162FTL
Resistor, 33R, 0603, 5%, Anti Sulfur	MCMR06X330 JTL
Resistor, 330R, 100mW, 1%, Anti Sulphur	MCMR06X3300FTL
Resistor, 0603, 33K, 1%, Anti Sulfur	MCMR06X3302FTL
Resistor, 0603, 330K, 1%, Anti Sulfur	MCMR06X3303FTL
Resistor, 330R, 0603, 5%, Anti Sulfur	MCMR06X331 JTL
Resistor, 33K, 0603, 5%, Anti Sulfur	MCMR06X333 JTL
Resistor, 0603, 33R, 1%, Anti Sulfur	MCMR06X33R0FTL
Resistor, 0603, 348K, 1%, Anti Sulfur	MCMR06X3483FTL
Resistor, 0603, 3K57, 1%, Anti Sulfur	MCMR06X3571FTL
Resistor, 0603, 360R, 1%, Anti Sulfur	MCMR06X3600FTL
Resistor, 0603, 3K6, 1%, Anti Sulfur	MCMR06X3601FTL
Resistor, 0603, 360K, 1%, Anti Sulfur	MCMR06X3603FTL
Resistor, 0603, 3K65, 1%, Anti Sulfur	MCMR06X3651FTL
Resistor, 0603, 36R, 1%, Anti Sulfur	MCMR06X36R0FTL

Description	Part Number
Resistor, 0603, 374R, 1%, Anti Sulfur	MCMR06X3740FTL
Resistor, 0603, 3K74, 1%, Anti Sulfur	MCMR06X3741FTL
Resistor, 0603, 3K83, 1%, Anti Sulfur	MCMR06X3831FTL
Resistor, 0603, 390R, 1%, Anti Sulfur	MCMR06X3900FTL
Resistor, 0603, 3K9, 1%, Anti Sulfur	MCMR06X3901FTL
Resistor, 0603, 39K, 1%, Anti Sulfur	MCMR06X3902FTL
Resistor, 390R, 0603, 5%, Anti Sulfur	MCMR06X391 JTL
Resistor, 0603, 39R, 1%, Anti Sulfur	MCMR06X39R0FTL
Resistor, 3R3, 0603, 5%, Anti Sulfur	MCMR06X3R3 JTL
Resistor, 0603, 40K2, 1%, Anti Sulfur	MCMR06X4022FTL
Resistor, 0603, 422R, 1%, Anti Sulfur	MCMR06X4220FTL
Resistor, 0603, 42K2, 1%, Anti Sulfur	MCMR06X4222FTL
Resistor, 0603, 4K3, 1%, Anti Sulfur	MCMR06X4301FTL
Resistor, 0603, 43K, 1%, Anti Sulfur	MCMR06X4302FTL
Resistor, 0603, 43K2, 1%, Anti Sulfur	MCMR06X4322FTL
Resistor, 0603, 43R, 1%, Anti Sulfur	MCMR06X43R0FTL
Resistor, 0603, 4K42, 1%, Anti Sulfur	MCMR06X4421FTL
Resistor, 0603, 44R2, 1%, Anti Sulfur	MCMR06X44R2FTL
Resistor, 0603, 45R3, 1%, Anti Sulfur	MCMR06X45R3FTL
Resistor, 47R, 0603, 5%, Anti Sulfur	MCMR06X470 JTL
Resistor, 0603, 470R, 1%, Anti Sulfur	MCMR06X4700FTL
Resistor, 4.7K, 100mW, 1%, Anti Sulphur	MCMR06X4701FTL
Resistor, 47K, 100mW, 1%, Anti Sulphur	MCMR06X4702FTL
Resistor, 0603, 470K, 1%, Anti Sulfur	MCMR06X4703FTL
Resistor, 470R, 0603, 5%, Anti Sulfur	MCMR06X471 JTL
Resistor, 4K7, 0603, 5%, Anti Sulfur	MCMR06X472 JTL
Resistor, 47K, 0603, 5%, Anti Sulfur	MCMR06X473 JTL
Resistor, 470K, 0603, 5%, Anti Sulfur	MCMR06X474 JTL
Resistor, 0603, 4K75, 1%, Anti Sulfur	MCMR06X4751FTL
Resistor, 0603, 47K5, 1%, Anti Sulfur	MCMR06X4752FTL
Resistor, 0603, 48K7, 1%, Anti Sulfur	MCMR06X4872FTL
Resistor, 0603, 49R9, 1%, Anti Sulfur	MCMR06X49R9FTL
Resistor, 0603, 4R7, 1%, Anti Sulfur	MCMR06X4R70FTL
Resistor, 0603, 5K1, 1%, Anti Sulfur	MCMR06X5101FTL
Resistor, 0603, 51K, 1%, Anti Sulfur	MCMR06X5102FTL
Resistor, 0603, 510K, 1%, Anti Sulfur	MCMR06X5103FTL
Resistor, 0603, 5K11, 1%, Anti Sulfur	MCMR06X5111FTL

Description	Part Number
Resistor, 0603, 51K1, 1%, Anti Sulfur	MCMR06X5112FTL
Resistor, 5K1, 0603, 5%, Anti Sulfur	MCMR06X512 JTL
Resistor, 0603, 51R, 1%, Anti Sulfur	MCMR06X51R0FTL
Resistor, 0603, 52R3, 1%, Anti Sulfur	MCMR06X52R3FTL
Resistor, 0603, 5K49, 1%, Anti Sulfur	MCMR06X5491FTL
Resistor, 0603, 54K9, 1%, Anti Sulfur	MCMR06X5492FTL
Resistor, 0603, 549K, 1%, Anti Sulfur	MCMR06X5493FTL
Resistor, 0603, 54R9, 1%, Anti Sulfur	MCMR06X54R9FTL
Resistor, 0603, 560R, 1%, Anti Sulfur	MCMR06X5600FTL
Resistor, 0603, 5K6, 1%, Anti Sulfur	MCMR06X5601FTL
Resistor, 560R, 0603, 5%, Anti Sulfur	MCMR06X561 JTL
Resistor, 0603, 56K2, 1%, Anti Sulfur	MCMR06X5622FTL
Resistor, 0603, 5K76, 1%, Anti Sulfur	MCMR06X5761FTL
Resistor, 0603, 59K, 1%, Anti Sulfur	MCMR06X5902FTL
Resistor, 5R1, 0603, 5%, Anti Sulfur	MCMR06X5R1 JTL
Resistor, 5R6, 0603, 5%, Anti Sulfur	MCMR06X5R6 JTL
Resistor, 0603, 6K04, 1%, Anti Sulfur	MCMR06X6041FTL
Resistor, 0603, 60R4, 1%, Anti Sulfur	MCMR06X60R4FTL
Resistor, 0603, 620R, 1%, Anti Sulfur	MCMR06X6200FTL
Resistor, 0603, 6K2, 1%, Anti Sulfur	MCMR06X6201FTL
Resistor, 0603, 62K, 1%, Anti Sulfur	MCMR06X6202FTL
Resistor, 620K, 0603, 5%, Anti Sulfur	MCMR06X624 JTL
Resistor, 0603, 62R, 1%, Anti Sulfur	MCMR06X62R0FTL
Resistor, 0603, 6K34, 1%, Anti Sulfur	MCMR06X6341FTL
Resistor, 0603, 649R, 1%, Anti Sulfur	MCMR06X6490FTL
Resistor, 0603, 6K49, 1%, Anti Sulfur	MCMR06X6491FTL
Resistor, 0603, 6K65, 1%, Anti Sulfur	MCMR06X6651FTL
Resistor, 0603, 66R5, 1%, Anti Sulfur	MCMR06X66R5FTL
Resistor, 0603, 680R, 1%, Anti Sulfur	MCMR06X6800FTL
Resistor, 0603, 6K8, 1%, Anti Sulfur	MCMR06X6801FTL
Resistor, 0603, 68K, 1%, Anti Sulfur	MCMR06X6802FTL
Resistor, 680R, 0603, 5%, Anti Sulfur	MCMR06X681 JTL
Resistor, 0603, 681R, 1%, Anti Sulfur	MCMR06X6810FTL
Resistor, 0603, 68R, 1%, Anti Sulfur	MCMR06X68R0FTL
Resistor, 0603, 6K98, 1%, Anti Sulfur	MCMR06X6981FTL
Resistor, 0603, 698K, 1%, Anti Sulfur	MCMR06X6983FTL
Resistor, 0603, 71R5, 1%, Anti Sulfur	MCMR06X71R5FTL

Description	Part Number
Resistor, 0603, 7K32, 1%, Anti Sulfur	MCMR06X7321FTL
Resistor, 75R, 0603, 5%, Anti Sulfur	MCMR06X750 JTL
Resistor, 0603, 7K5, 1%, Anti Sulfur	MCMR06X7501FTL
Resistor, 0603, 75R, 1%, Anti Sulfur	MCMR06X75R0FTL
Resistor, 0603, 787R, 1%, Anti Sulfur	MCMR06X7870FTL
Resistor, 0603, 80K6, 1%, Anti Sulfur	MCMR06X8062FTL
Resistor, 0603, 8K2, 1%, Anti Sulfur	MCMR06X8201FTL
Resistor, 0603, 82K, 1%, Anti Sulfur	MCMR06X8202FTL
Resistor, 820R, 0603, 5%, Anti Sulfur	MCMR06X821 JTL
Resistor, 0603, 82R, 1%, Anti Sulfur	MCMR06X82R0FTL
Resistor, 0603, 9K09, 1%, Anti Sulfur	MCMR06X9091FTL
Resistor, 0603, 90K9, 1%, Anti Sulfur	MCMR06X9092FTL
Resistor, 0603, 9K1, 1%, Anti Sulfur	MCMR06X9101FTL
Resistor, 0603, 91K, 1%, Anti Sulfur	MCMR06X9102FTL
Resistor, 0603, 91R, 1%, Anti Sulfur	MCMR06X91R0FTL
Resistor, 0603, 95R3, 1%, Anti Sulfur	MCMR06X95R3FTL
Resistor, 0603, 9K76, 1%, Anti Sulfur	MCMR06X9761FTL

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