



<b>RSMD</b> <b>Film Type Chip Fixed Resistor</b>	Document No. 文件编号	YF-SE-02-11/A00
	Released Date 文件日期	2018-12-20
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**■ Feature:**

- Low power, small size, wide resistance range;
- Stable performance of high voltage, superior mechanical;
- Chip products, reflow and wave-flow solder are available;
- RoHS compliant, halogen free, lead free;

**■ Product Application:**

- Consumer electronics;
- Industrial/automation system;
- Automotive electronics;
- Meter/Instruments;

**■ Parts Number Explanation:**

RSMD	-	1206	-	1/4W	-	331	-	J	-	T
Product Type		Dimension		Rated Power		Resistance		Tolerance		Packing
		0201		0.125W		5R6=5.6Ω		B:±0.1%		T: Belt/Reel type
		0402		0.25W		150R=15Ω		D:±0.5%		B: Bulk type
		0603		0.5W		511=510Ω		F:±1%		
		0805		0.6W		1331=1.33KΩ		G:±2%		
		1206		1W		472=4.7KΩ		J:±5%		
		1210		2W		753=75KΩ		K:±10%		
		2010		3W		105=1MΩ				
		2512								

**■ RoHS declaration:**

The products meet the standards of RoHS 2.0(2011/65/EU).

**■ Reliability standard**

Weldability Standard:	IEC60068-2-20
Environment Standard:	SJ/T 11363-2006, RoHS 2011/65/EU
QC standard:	MIL-STD-105E, GB/T 2828.1-2003
Performance:	IEC60115-2008, GB/T5729-2003



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■ Rating Voltage:

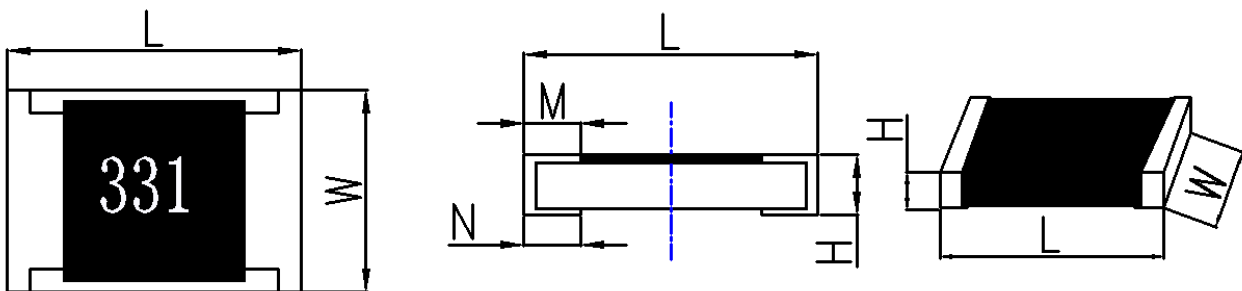
The following equation may be used to determine the DC(Direct Current) or AC(Alternating Current)(RMS, root mean square value) of normal rated power. However, if the result value exceeds the max. using voltage, the max. using voltage is to be used:

$U_P = \sqrt{P \times R}$	U <sub>P</sub> : Rating voltage (V) P: Rating Power (W) R: Resistance(Ω)
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■ Standard electrical specifications:

Dimension	Rated Power At 70°C	Max. Rating Voltage(U <sub>R</sub> )	Max. Overload Voltage(U <sub>L</sub> )	Insulation Voltage(U <sub>N</sub> )	T.C.R. PPM/°C	Operating Temperature
0201	1/20W	25VDC	50VDC	75VAC	±10ppm ~ 400ppm	-55°C ~ +125°C
0402	1/16W	50VDC	100VDC	150VAC		
0603	1/10W	50VDC	100VDC	150VAC		
0805	1/8W	150VDC	300VDC	430VAC		
1206	1/4W	200VDC	400VDC	570VAC		
1210	1/3W	200VDC	400VDC	600VAC		
2010	3/4W	200VDC	400VDC	600VAC		
2512	1W	200VDC	400VDC	600VAC		

■ Type dimension:



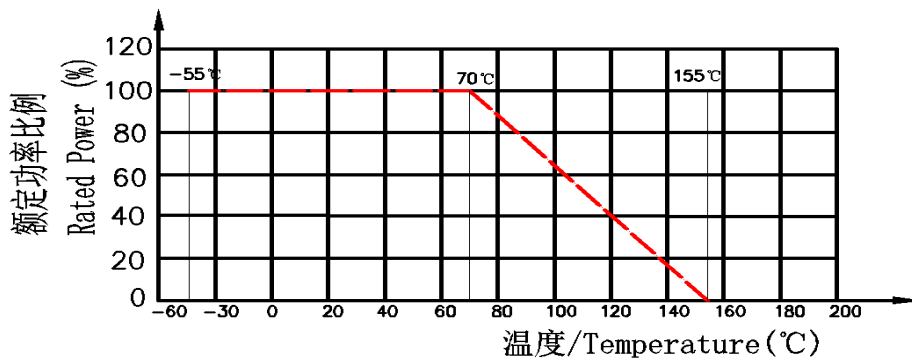
Dimension	Resistance	Dimension(mm)				N.W.
		L	W	H±0.1	N±0.2	
0201	4.7Ω~1MΩ	0.6±0.05	0.3±0.05	0.23±0.05	0.15±0.05	
0402	4.7Ω~1MΩ	1.0±0.10	0.5±0.10	0.3±0.10	0.25±0.10	
0603	1Ω~1MΩ	1.6±0.15	0.8±0.15	0.4±0.10	0.3±0.20	
0805	1Ω~1MΩ	2.0±0.20	1.25±0.20	0.5±0.10	0.4±0.20	
1206	1Ω~1MΩ	3.2±0.20	1.6±0.20	0.55±0.10	0.5±0.20	
1210	1Ω~1MΩ	3.2±0.20	2.5±0.20	0.55±0.10	0.5±0.20	
2010	1Ω~1MΩ	5.0±0.20	2.5±0.20	0.55±0.10	0.6±0.20	
2512	1Ω~1MΩ	6.4±0.20	3.2±0.20	0.55±0.10	0.6±0.20	



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■ Power Derating Curve:

Rated power is the highest using power under 70°C and continuous duty. At the same time, the overload power is fit for mechanical properties and electrical properties. When the temperature is over 70°C, the power must be derated in accordance with the curve as below:



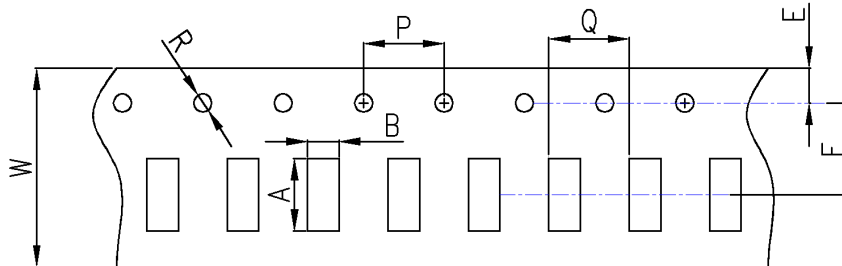
■ Product performance:

Test Item	Test Method	Procedure	Requirements										
Substrate Strength	IEC60115-1 4.33	Pressurizing force:5N, 10 seconds	No damage										
Body strength	IEC60115-1 4.15	Central part pressurizing force:5N for 60seconds	No damage										
Vibration	IEC60115-1 4.22	10~55HZ/0.75mm/2H*3	No damage										
Soldering Heat	IEC60115-1 4.18	270±5°C, 10S	ΔR/R≤±0.5%										
Solderability	IEC60115-1 4.17	245±5°C, 3±0.5S	≥95%										
T.C.R.	IEC60115-1 4.8	$T.C.R. = \frac{R - R_0}{R_0} \times \frac{1}{T - T_0} \times 10^6$ (PPM/°C) R <sub>0</sub> :Resistance at room temperature(T <sub>0</sub> ); R: Resistance at T=T <sub>0</sub> +50;	Refer to Ratings										
Short Time Overload	IEC60115-1 4.13	Min(2.5×U <sub>P</sub> , U <sub>R</sub> ), 5s	ΔR/R≤±2.0%										
Withstanding voltage	IEC60115-1 4.7	U <sub>N</sub> , 60S, I≤1mA.	ΔR/R≤±0.5%										
Insulation resistance	IEC60115-1 4.6	DC100V, R>100MΩ	ΔR/R≤±0.5%										
Endurance	IEC60115-1 4.25	Min(U <sub>P</sub> , U <sub>R</sub> ), 1.5H- ON and 0.5H-OFF for 1000H.	ΔR/R≤±5%										
Intermittent Overload	IEC60115-1 4.39	Min(U <sub>P</sub> , U <sub>R</sub> ), 1s-ON/25s-OFF for 10000 cycle	No damage ΔR/R≤±5%										
Temperature Cycle	IEC60115-1 4.19	Cycle Below: <table border="1" style="margin-left: 20px;"> <tr> <td>Temperature</td> <td>25°C</td> <td>150°C</td> <td>25°C</td> <td>-55°C</td> </tr> <tr> <td>Duration</td> <td>15min</td> <td>15min</td> <td>15min</td> <td>15min</td> </tr> </table> Cycle Time:1000Hrs.	Temperature	25°C	150°C	25°C	-55°C	Duration	15min	15min	15min	15min	No damage ΔR/R≤±0.5%
Temperature	25°C	150°C	25°C	-55°C									
Duration	15min	15min	15min	15min									
Solvent Resistance	IEC6011-1 4.29	In iso-probyl alcohol(IPA) for 10H in normal condition	No damage ΔR/R≤±1.0%										

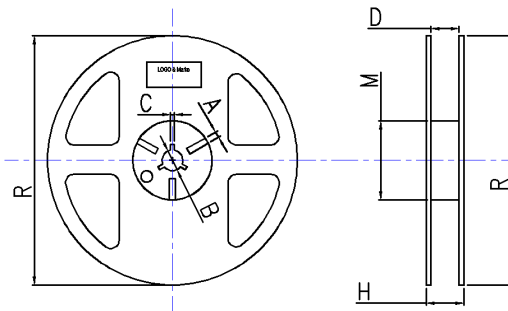


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■ Embossed Dimensions(Reel):



Type	Dimension(mm)							
	W±0.5	E±0.2	F±0.1	P±0.5	Q±0.5	R±0.2	A±0.2	B±0.2
0201	8	1.75	3.5	4	2	1.5	0.7	0.4
0402	8	1.75	5.5	4	2	1.5	1.2	0.7
0603	8	1.75	3.5	4	4	1.5	1.85	1.1
0805	8	1.75	3.5	4	4	1.5	2.35	1.65
1206	8	1.75	3.5	4	4	1.5	3.5	1.9
1210	8	1.75	3.5	4	4	1.5	3.5	2.8
2010	12	1.75	5.5	4	4	1.5	5.5	2.8
2512	12	1.75	5.5	4	4	1.5	6.8	3.5



Type	MPQ	Dimension(mm)						
		R±2.0	D±1.0	H±1.0	M±2.0	A±0.5	B±0.5	C±0.5
0201	10,000 PCS	178	9.5	11.5	60	2	13	5.5
0402	10,000 PCS	178	9.5	11.5	60	2	13	5.5
0603	5,000 PCS	178	9.5	11.5	60	2	13	5.5
0805	5,000 PCS	178	9.5	11.5	60	2	13	5.5
1206	5,000 PCS	178	9.5	11.5	60	2	13	5.5
1210	5,000 PCS	178	9.5	11.5	60	2	13	5.5
2010	4,000 PCS	178	13	15	60	2	13	5.5
2512	4,000 PCS	178	13	15	60	2	13	5.5