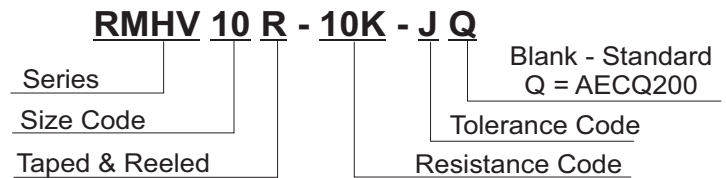


### INTRODUCTION

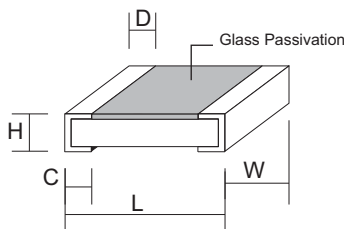
RFE International, Inc. offers a wide range of chip resistors to meet your application requirements. They are made with metal glazed thick film on a high purity ceramic substrate which is overcoated for stability and protection.

- Standard Series See RM Series
- Anti-Sulfur Thick Film see RMS Series
- High Power Thick Film see RMH Series
- Anti-Sulfur see RMV Series
- Anti-Sulfur High Power see RMP Series
- Thin Film see RMT Series
- Fusible Resistors see RMF Series
- Thick Film Array Chip see RCN Series
- Metal Array Low-Resistance see LR Series

### PART NUMBER EXAMPLE



### DIMENSIONS



Size Code	Max. Dimension (mm)				
	L	W	H	C	D
RMHV06 (0603)	1.60±0.20	0.80±0.15	0.40±0.10	0.20±0.10	0.20±0.10
RMHV10 (0805)	2.00±0.20	1.25±0.15	0.50±0.15	0.30±0.15	0.40±0.15
RMHV12 (1206)	3.05±0.10	1.60±0.20	0.55±0.15	0.40±0.20	0.50±0.20

### RESISTANCE CODE

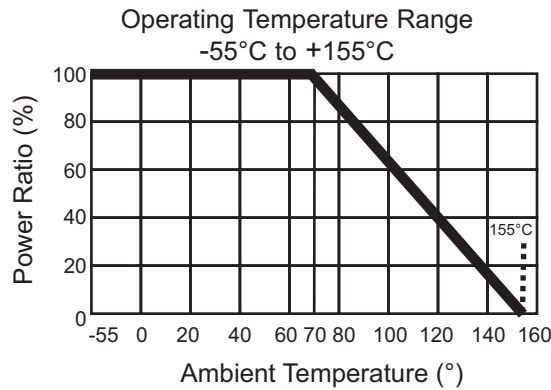
Ohms	1.0	100	1.5K	15K	1.0 Meg
Code	1R0	100R	1K5	15K	1M0

### ELECTRICAL CHARACTERISTICS & RESISTANCE RANGE

Code	Size	Rated Power at 70°C	Max. Working Voltage	Max. Overload Voltage	T.C.R. (PPM/°C)	Resistance Range	
						F (±1%)	J (±5%)
RMHV06	(0603)	1/3 W	75V	125V	±100	10Ω ~ 1MΩ	---
					±200	1Ω ~ 9.76Ω	1Ω ~ 1MΩ
RMHV10	(0805)	1/2 W	200V	300V	±100	10Ω ~ 1MΩ	---
					±150	1Ω ~ 9.76Ω	---
					±200	---	1Ω ~ 1MΩ
RMHV12	(1206)	3/4 W	250V	500V	±100	1Ω ~ 1MΩ	---
					±200	---	1Ω ~ 1MΩ

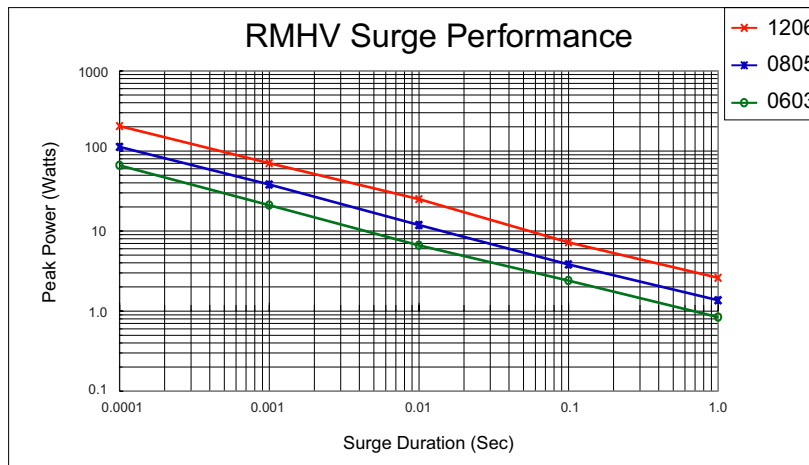
■ **PERFORMANCE CHARACTERISTICS**

Power Derating Curve



Power rating or current rating is in the case based on continuous full-load at ambient temperature of 70°C. For operation at ambient temperature in excess of 70°C, the load should be derated in accordance with figure of derating Curve.

■ **SURGE PERFORMANCE CURVE**



■ **Voltage Rating or Current Rating**

Resistance Range:  $\geq 1\Omega$

Rated Voltage: The resistor shall have a DC continuous working voltage or a RMS AC continuous working voltage at commercial-line frequency and wave form corresponding to the power rating, as determined formula as follows:

$$E = \sqrt{P \times R}$$

E = Rated Voltage (V)  
 P = Power Rating (W)  
 R = Nominal Resistance ( $\Omega$ )

### ■ PULSE LOAD DATA

#### Single Pulse Load, max

Size	0.000001 Sec	0.00001 Sec	0.0001 Sec	0.001 Sec	0.01 Sec	0.1 Sec	1 Sec
RMHV06 (0603)	--	75	55	15	8	25	1.85
RMHV10 (0805)	--	280	100	30	10.5	3.5	1.25
RMHV12 (1206)	875	350	120	55	20	6.5	2.5

Maximum pulse load, single pulse;  $V \leq V$  max working. Permissible resistance change equivalent to 8000 h operation

This data is for reference only and represents typical performance. The actual performance may vary depending upon operating conditions, such as (but not limited to) temperature and application environment.

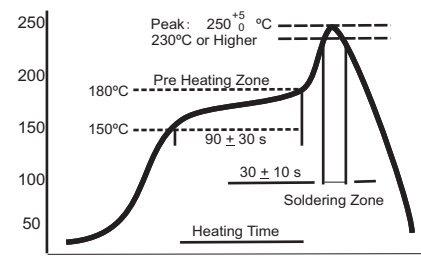
#### Continuous Pulse Load, max

Size	0.000001 Sec	0.00001 Sec	0.0001 Sec	0.001 Sec	0.01 Sec	0.1 Sec	1 Sec
RMHV06 (0603)	--	50	20	7	2.5	0.95	0.4
RMHV10 (0805)	--	100	40	10.5	5	1.5	0.55
RMHV12 (1206)	375	200	80	27	9	3	0.9

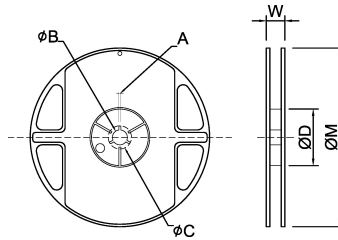
Maximum pulse load, continuous pulse;  $\text{nom } P \leq \text{rated } P$  and  $V \leq V$  max working. Permissible resistance change equivalent to 8000 h operation

This data is for reference only and represents typical performance. The actual performance may vary depending upon operating conditions, such as (but not limited to) temperature and application environment.

### TEST PROCEDURES & REQUIREMENTS

Test Item	Test Method	Procedure	Requirements
Temperature Coefficient of Resistance (T.C.R.)	JIS C 5201-1 Clause 4.8	-55°C ~ +155°C, 20°C is the reference temperature	Refer to Ratings
Short Time Overload	JIS C 5201-1 Clause 4.13	General: 2.5 times RCWV or Max. Overload voltage for 5 seconds High Power: 2.5 times RCWV or Max. Overload voltage for 2 seconds	±1: $\Delta R \leq \pm(1.0\%+0.05\Omega)$ ±5: $\Delta R \leq \pm(2.0\%+0.1\Omega)$
IR Reflow	Sony SS-00254	 <p>The graph shows a temperature profile for IR reflow. The y-axis is temperature in °C (50 to 250) and the x-axis is Heating Time. Key points include: Peak at 250 ± 5 °C (230°C or Higher), Pre Heating Zone at 180°C, a 90 ± 30 s dwell at 150°C, a 30 ± 10 s dwell at the Soldering Zone, and a final peak at 250 ± 5 °C.</p>	±1: $\pm(1.0\%+0.05\Omega)$ ±5: $\pm(2.0\%+0.1\Omega)$
Leaching	Sony SS-00254-9	260 ± 5°C for 30 seconds	> 95% Coverage
Soldering Heat	JIS C 5201-1 Clause 4.18	260 ± 5°C for 10 seconds	±1: $\pm(0.5\%+0.05\Omega)$ ±5: $\pm(1.0\%+0.05\Omega)$
Temperature Cycling	JIS C 5201-1 Clause 4.19	-55°C ~ +155°C, 5 cycles	0.1% ' 0.5% ' 1% $\pm(0.5\%+0.05\Omega)$ 2% ' 5% $\pm(1.0\%+0.1\Omega)$
Electric Iron	Sony SS-00254-5	Preheating temperature: 350 ± 5°C Electric Iron preheating time: 3 +1/-0 sec.	±1: $\pm(0.5\%+0.05\Omega)$ ±5: $\pm(1.0\%+0.05\Omega)$
Resistance to Solvent	JIS C 5201-1 Clause 4.29	The tested resistor be immersed into isopropyl alcohol of 20~25°C for 60 seconds. Then the resistor is left in the room for 48 hours.	±1: $\pm(0.5\%+0.05\Omega)$ ±5: $\pm(1.0\%+0.05\Omega)$
Load Life in Humidity	JIS C 5201-1 Clause 4.24	40 ± 2°C, 90~95% R.H. or Max. working voltage for 1000 hours with 1.5 hrs "ON" and 0.5hr "OFF".	0.1% ' 0.5% ' 1% $\pm(0.5\%+0.05\Omega)$ 2% ' 5% $\pm(3.0\%+0.1\Omega)$
Load Life (Endurance)	JIS C 5201-1 Clause 4.25	70 ± 2°C, or Max. working voltage for 1000 hours with 1.5 hrs "ON" and 0.5hr "OFF".	0.1% ' 0.5% ' 1% $\pm(1.0\%+0.05\Omega)$ 2% ' 5% $\pm(3.0\%+0.1\Omega)$
Terminal Bending Strength	JIS C 5201-1 Clause 4.33	Bending once for 5 seconds D: RM Series 0402 ' 0603 ' 0805 = 5mm RM Series 1206 ' 1210 ' 1812 = 3mm RM Series 1218 ' 2010 ' 2512 ' 2030 = 2mm	±1: $\pm(1.0\%+0.05\Omega)$ ±5: $\pm(1.0\%+0.05\Omega)$
Insulation Resistance	JIS C 5201-1 Clause 4.6	Max Overload Voltage for 1 min.	≥ 10G

### PACKAGE & DIMENSION (mm)

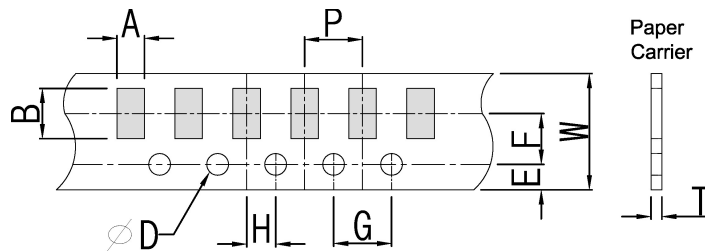


Unit:mm

Size	Package Qty		A	ΦB	ΦC	ΦD	W	ΦM
RMHV06 (0603)	7"	5K/reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
RMHV10 (0805)	7"	5K/reel	2.0±0.5	13.5±1.0	21±1.0	100±1.0	11.5±2.0	254±2.0
RMHV12 (1206)	7"	5K/reel	2.0±0.5	13.5±1.0	21±1.0	100±1.0	11.5±2.0	330±2.0

### TAPING SPECIFICATION

Paper Type  
(P= 2.0 ± 0.1)



Unit:mm

Size	A	B	W	E	F	G	H	T	ØD
RMHV06(0603)	1.05±0.20	1.80±0.20	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	2.0±0.05	0.60±0.10	1.50±0.10
RMHV10(0805)	1.55±0.20	2.30±0.20	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	2.0±0.05	0.75±0.10	1.50±0.10
RMHV12(1206)	1.90±0.20	3.50±0.20	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	2.0±0.05	0.75±0.10	1.50±0.10