KAMAYA OHM

No.:	RMC-K-HTS-0006 /13
Date:	2022. 8. 19

Data sheet

Title: FIXED THICK FILM CHIP RESISTORS; RECTANGULAR TYPE

Style: RMC1/32,1/20,1/16S,1/16,1/10,1/8,1/4,1/2,1

RoHS COMPLIANCE ITEM
Halogen and Antimony Free

Note: ・Stock conditions
Temperature: +5°C ~ +35°C
Relative humidity: 25% ~ 75%
The period of guarantee: Within 2 year from shipment by the company.
Solderability shall be satisfied.

・Product specification contained in this data sheet are subject to change at any time without notice

・If you have any questions or a Purchasing Specification for any quality agreement is necessary, please contact our sales staff.

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1. Scope

1.1 This data sheet covers the detail requirements for fixed thick film chip resistors; rectangular type, style of RMC1/32, 1/20, 1/16S, 1/16, 1/10, 1/8, 1/4, 1/2, 1.

1.2 Applicable documents

JIS C 5201–1:2011, JIS C 5201–8:2014, JIS C 5201–8–1: 2014
IEC60115–1:2008, IEC60115–8: 2009, IEC60115–8–1: 2014
EIAJ RC–2134C–2010

2. Classification

Type designation shall be the following form.

(Example) 1)

RMC	1/8	–	123	J	TP
1	2	3	4	5	6
Style					

2)

RMC	1/8		JP		TP
1	2		4		6
Style					

1 Fixed thick film chip resistors; rectangular type
2 Rated dissipation and / or dimension — Style
3 Temperature coefficient of resistance

K	±100×10^{-6}/ °C
–(Dash)	Standard

4 Rated resistance

123	E24 Series, 3 digit, Ex. 123--> 12kΩ,
1000	E96 Series, 4 digit, Ex. 1000-->100Ω 1022--> 10.2kΩ
JP	Chip jumper

5 Tolerance on rated resistance

D	±0.5%
F	±1%
G	±2%
J	±5%

6 Packaging form 1. Scope

B	Bulk (loose package)
PA	Press pocket taping
TH	Paper taping
TP	
TE	Embossed taping

RMC1/4	3.1±0.15	2.5±0.15	0.55±0.15	0.5±0.25	0.5±0.25	0.05~0.3
RMC1/2	5.0±0.15	2.5±0.15	0.55±0.15	0.6±0.2	0.6±0.2	0.05~0.35
RMC1	6.3±0.15	3.2±0.15	0.55±0.15	0.6±0.2	0.6±0.2	0.05~0.35

5.2 Net weight (Reference)

Style	Net weight(mg)
RMC1/32	0.035
RMC1/20	0.16
RMC1/16S	0.6
RMC1/16	2
RMC1/10	5
RMC1/8	9
RMC1/4	16
RMC1/2	25
RMC1	40

6. Marking

The Rated resistance of RMC1/32, 1/20, 1/16S is not be marked.

6.1 RMC1/10,1/8,1/4,1/2,1

The nominal resistance shall be marked in 3 digits or 4 digits and marked on over coat side.

- Malaysia products: E24 series: 3 digits, E96 series: 4 digits
  In case of the resistance value that E96 overlaps with E24, It is marked by either.
- China products(RMC1/10,1/8): J(±5%): 3 digits, F(±1%): 4 digits

Marking example		Contents	Application
Malaysia	China		
123	123	12×10^3 [Ω] → 12 [kΩ]	RMC1/10,1/8,1/4,1/2,1
2R2	2R2	2. 2 [Ω]	Less than 10Ω of RMC1/8,1/4,1/2,1
2 . 2	2R2	2. 2 [Ω]	Less than 10Ω of RMC1/10
5623	5623	562×10^3 [Ω] → 562[kΩ]	RMC1/10,1/8,1/4,1/2,1
12R7	12R7	12.7 [Ω]	RMC1/10,1/81/4,1/2,1

6.2 RMC1/16

The nominal resistance shall be marked in 3 digits (E24 and/or E96) and marked on over coat side.
No marking in the E96 series of a Malaysia.
In case of the resistance value that E96 overlaps with E24, there is a case to mark in E96.

Marking example		Contents	Application
Malaysia	China		
123	123	12×10^3 [Ω] → 12 [kΩ]	E24
2R2	2R2	2. 2 [Ω]	E24
No marking	02C	102×10^2 [Ω] → 10.2 [kΩ]	E96
No marking	51X	332×10^{-1} [Ω] → 33.2 [Ω]	E96

6.2.1 Symbol for E96 series of resistance value

E96	Symbol	E96	Symbol	E96	Symbol	E96	Symbol	E96	Symbol
100	01	162	21	261	41	422	61	681	81
102	02	165	22	267	42	432	62	698	82
105	03	169	23	274	43	442	63	715	83
107	04	174	24	280	44	453	64	732	84
110	05	178	25	287	45	464	65	750	85
113	06	182	26	294	46	475	66	768	86
115	07	187	27	301	47	487	67	787	87
118	08	191	28	309	48	499	68	806	88
121	09	196	29	316	49	511	69	825	89
124	10	200	30	324	50	523	70	845	90
127	11	205	31	332	51	536	71	866	91
130	12	210	32	340	52	549	72	887	92
133	13	215	33	348	53	562	73	909	93
137	14	221	34	357	54	576	74	931	94
140	15	226	35	365	55	590	75	953	95
143	16	232	36	374	56	604	76	976	96
147	17	237	37	388	57	619	77		
150	18	243	38	392	58	634	78		
154	19	249	39	402	59	649	79		
158	20	255	40	412	60	665	80		

6.2.2 Symbol of multipliers

Symbol	Y	X	A	B	C	D	E	F
Multipliers	10^{-2}	10^{-1}	10^{0}	10^{1}	10^{2}	10^{3}	10^{4}	10^{5}

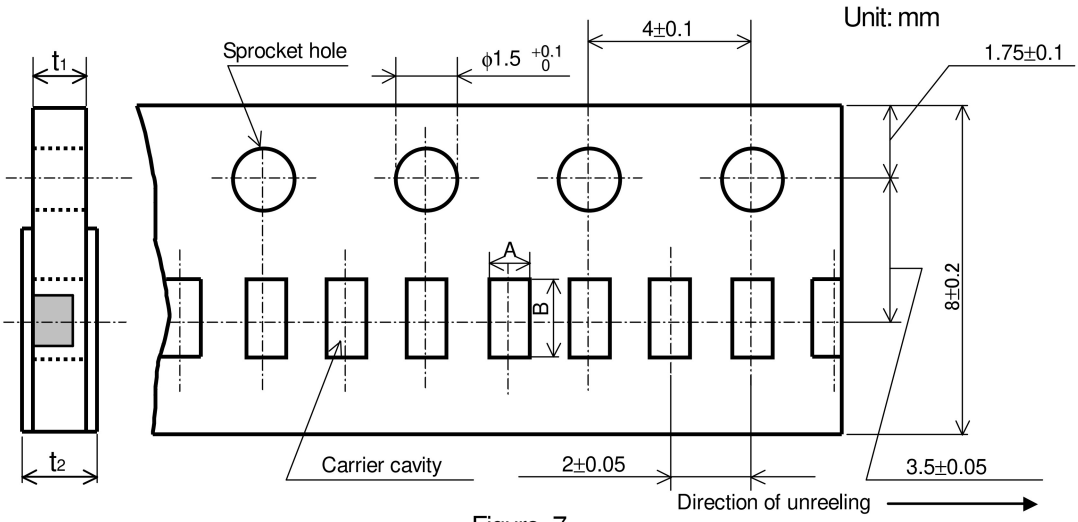
6.3 Marking example of Jumper Chip

Marking example		Contents	Application
Malaysia	China		
○ or 000	000	JP	RMC1/16
○			RMC1/10,1/8
000			RMC1/4,1/2,1

RMC1/20	0.37±0.05	0.67±0.05	0.42±0.03	0.45±0.05	0.27±0.02

9.2.2 Paper taping (8mm width, 2mm pitches)

Taping dimensions shall be in accordance with Figure–7 and Table–6.



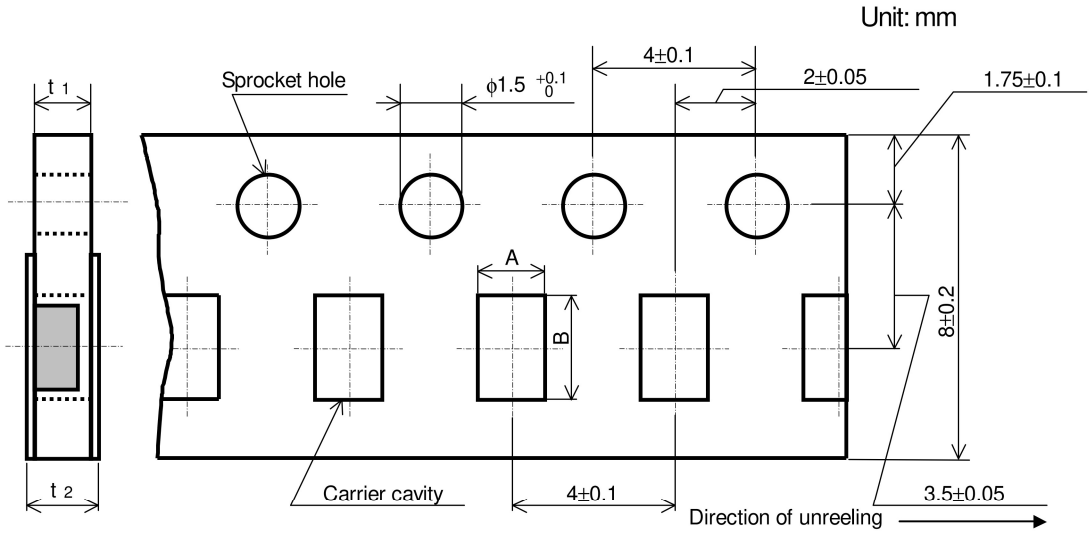
Figure–7

Table–6 Unit: mm

Style	A	B	t_1	t_2
RMC1/16S	$0.65^{+0.05}_{-0.10}$	$1.15^{+0.05}_{-0.10}$	0.4 ± 0.05	0.5max.

9.2.3 Paper taping (8mm width, 4mm pitches)

Taping dimensions shall be in accordance with Figure–8 and Table–7.



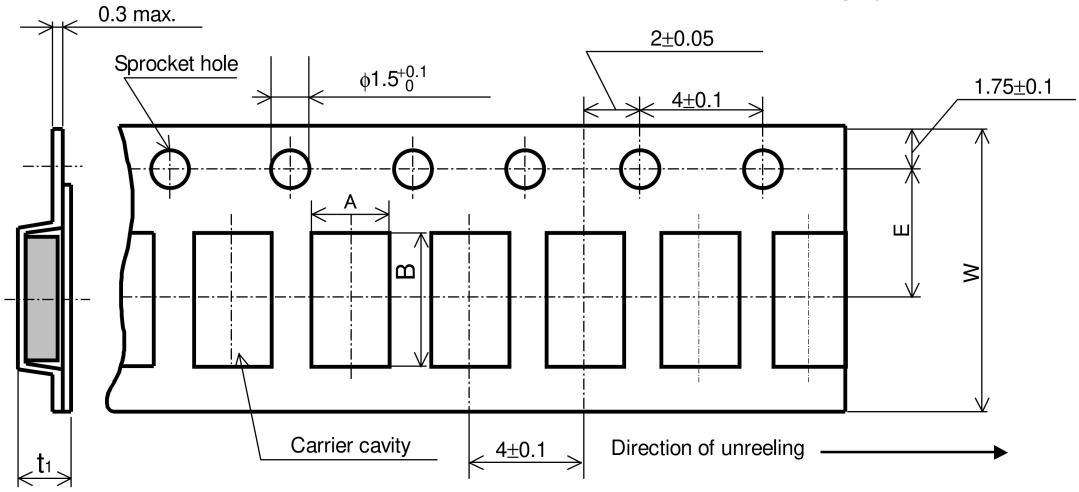
Figure–8

Table–7 Unit: mm

Style	A	B	t_1	t_2
RMC1/16	1.15±0.15	1.9±0.2	0.6±0.1	0.8max.
RMC1/10	1.65±0.15	2.5±0.2	0.8±0.1	1.0max.
RMC1/8	2.00±0.15	3.6±0.2		

9.2.4 Embossed taping dimensions shall be in accordance with Figure–9 and Table–8.

Unit: mm

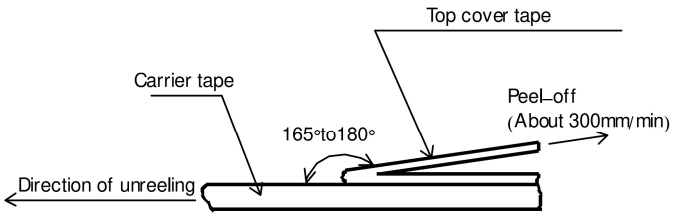


Figure–9

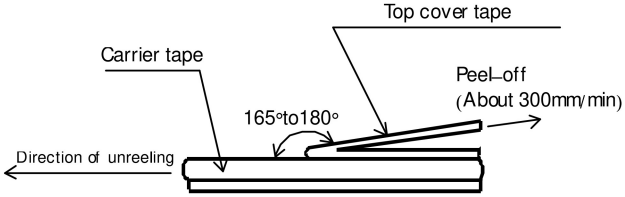
Table–8 Unit: mm

Style	A	B	W	E	t_1
RMC1/4	2.85±0.20	3.5±0.2	8.0±0.3	3.5±0.05	1.0±0.2
RMC1/2	3.1±0.2	5.5±0.2	12.0±0.3	5.5±0.05	1.1±0.15
RMC 1	3.6±0.2	6.9±0.2			

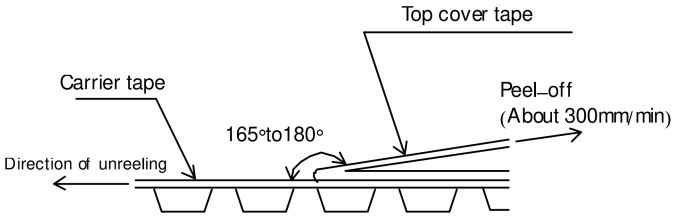
1). The cover tapes shall not cover the sprocket holes.
2). Tapes in adjacent layers shall not stick together in the packing.
3). Components shall not stick to the carrier tape or to the cover tape.
4). Pitch tolerance over any 10 pitches ±0.2mm.
5). The peel strength of the top cover tape shall be with in 0.1N to 0.5N on the test method as shown in the following RMC1/32,1/20: Figure–10, RMC1/16S, 1/16, 1/10, 1/8: Figure–11, RMC1/4, 1/2, 1: Figure–12.
6). When the tape is bent with the minimum radius for RMC1/32, 1/20, 1/16S, 1/16, 1/10,1/8, 1/4: 25 mm, or RMC1/2, 1: 30 mm, the tape shall not be damaged and the components shall maintain their position and orientation in the tape.
7). In no case shall there be two or more consecutive components missing.
The maximum number of missing components shall be one or 0.1%, whichever is greater.
8). The resistors shall be faced to upward at the over coating side in the carrier cavity.



Figure–10



Figure–11



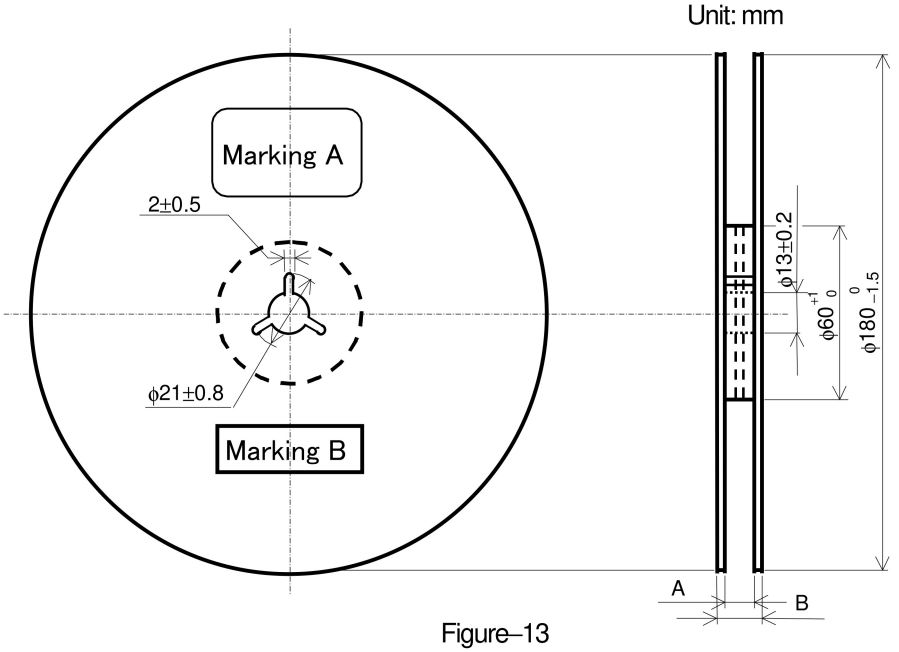
Figure–12

9.3 Reel dimension

Reel dimensions shall be in accordance with the following Figure–13 and Table–9.

Plastic reel (Based on EIAJ ET–7200C)

Unit: mm



Figure–13

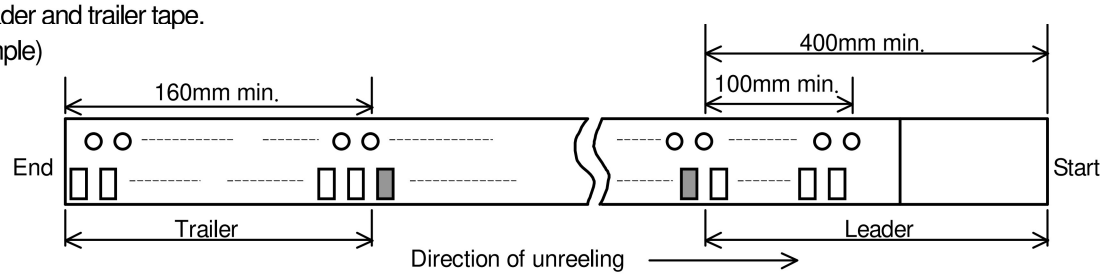
Table–9 Unit: mm

Style	A	B	Note
RMC1/32, 1/20, 1/16S, 1/16, 1/10, 1/8, 1/4	9 $^{+1.0}_{0}$	11.4±1.0	Injection molding
		13±1.0	Vacuum forming
RMC1/2, 1	13 $^{+1.0}_{0}$	17±1.0	Vacuum forming

Note: Marking label shall be marked on a place of Marking A or two place of marking A and B.

9.4 Leader and trailer tape.

(Example)



Figure–14

10. Marking on package

The label of a minimum package shall be legibly marked with follows.

10.1 Marking A

(1) Classification

(Style, Temperature coefficient of resistance, Rated resistance, Tolerance on rated resistance, Packaging form)

(2) Quantity (3) Lot number (4) Manufacturer's name or trade mark (5) Others

10.2 Marking B (KAMAYA Control label)