

Soldering conditions for Resistors
Lead free paste
(Sn-3Ag-0.5Cu) version

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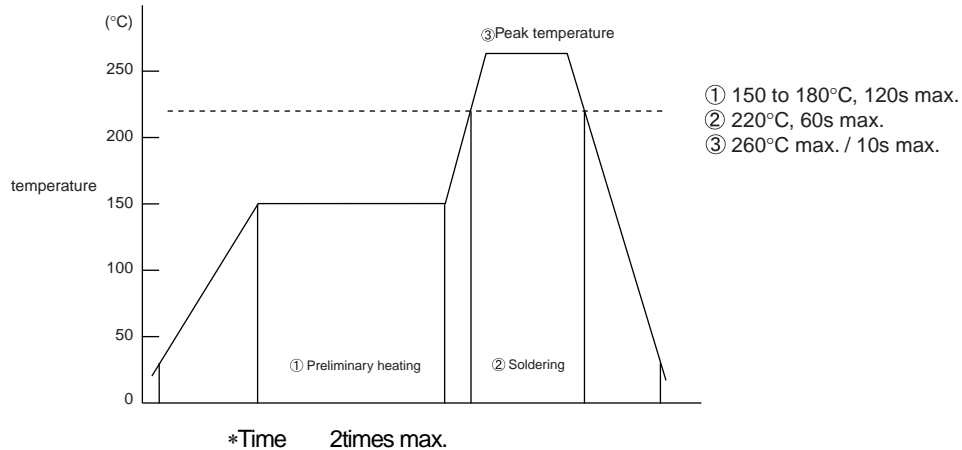
Resistors

● **Recommended reflow soldering conditions**

Corresponded products

MCR series / MNR series / PMR series / ESR series / UCR series

KTR series / RCN series / LTR series / TRR series / MVR series



● **Recommended flow soldering conditions**

Peak temperature 265°C, 10s max.

Corresponded products

MCR series (except for MCR006 series) / MNR series (except for MNR02 / 04 / 12 / 14 / 15 / 18 series) /

ESR series / KTR series / LTR series / TRR series / UCR series

● **Recommended hand soldering conditions**

Temperature less than 350°C

Time less than 3s

Times one time

Watt less than 20W

Corresponded products

MCR series (except for MCR006 series) / MNR series (except for MNR15 / 18 series) /

PMR series / ESR series / KTR series / RCN series / LTR series / TRR series / UCR series

Resistors

● Recommended washing conditions

Corresponded products

MCR series / MNR series / PMR series / ESR series / UCR series

KTR series / RCN series / LTR series / TRR series / MVR series

1. Washing liquid

washing liquid	manufacturers
water	-
ethanol	-
methanol	-
pine alpha ST-100S	ARAKAWA CHEMICAL
clean through 750H	KAO
technocare FRW-1	TOSHIBA TECHNOCARE

2. Condition of washing

washing bath		time	temperature	remarks
first bath	ultrasonic bath	less than 2min	less than 60°C	25 to 28kHz, 15W / L
second bath	immersion bath	less than 2min	less than 40°C	
third bath	immersion bath	less than 2min	room temperature	

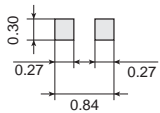
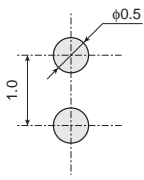
3. Condition of drying

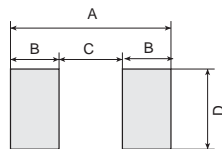
	time	temperature	remarks
Drying machine	less than 5min	less than 100°C	

Resistors

●Sample of land pattern

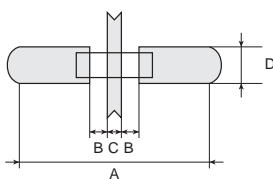
(Unit : mm)

MCR006	MCR01, TRR01
	
PMR	



Type \ Dimension	A	B	C	D
PMR03	2.5	1.0	0.5	0.9
PMR25	4.0	1.5	1.0	2.8
PMR50	6.0	2.1	1.8	2.8
PMR100	7.6	2.3	3.0	3.8

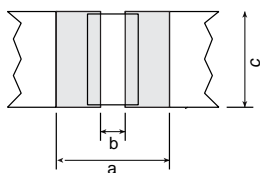
MCR / ESR / KTR



Type \ Dimension	A	B	C	D reference
MCR03, TRR03	2.7	0.3	0.2	0.52 to 0.92
MCR10, ESR10, KTR10, TRR10	3.5	0.3 to 0.4	0.3	1.1 to 1.3
MCR18, ESR18, KTR18, TRR18	5.0	0.8	0.6	1.4 to 1.8
MCR25	5.0	0.8	0.6	2.1 to 3.0
MCR50	8.4	1.6	0.6	2.1 to 3.0
MCR100	10.5	1.6	0.6	2.56 to 4.8

* C dimension is for the case of a cross-circuit between the two lands(feet) of a resistor.

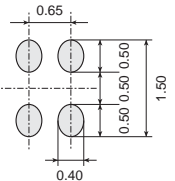
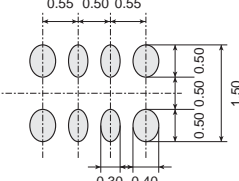
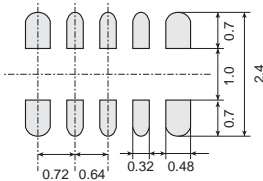
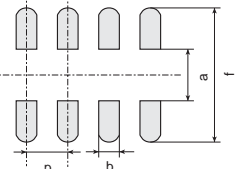
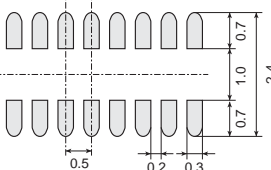
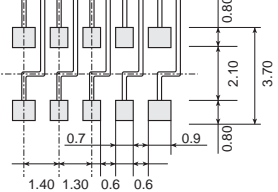
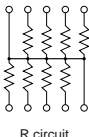
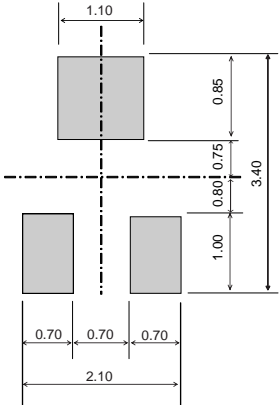
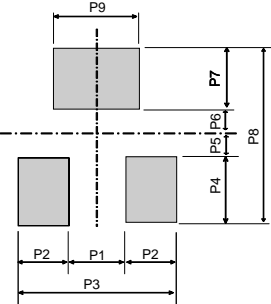
LTR10 / LTR18 / LTR50



Type \ Dimension	a	b	c
LTR10	2.70	0.40 to 0.60	1.90 to 2.10
LTR18	2.90	0.45 to 0.65	3.10 to 3.30
LTR50	3.35	0.60 to 0.80	4.90 to 5.10

Resistors

(Unit: mm)

MNR02 / RCN02	MNR04	MNR15																																
																																		
MNR12 / MNR14 / MNR32 / MNR34	MNR18																																	
 <table border="1" data-bbox="359 963 694 1064"> <thead> <tr> <th>Type</th> <th>Dimension</th> <th>a</th> <th>b</th> <th>p</th> <th>f</th> </tr> </thead> <tbody> <tr> <td>MNR12 / 14</td> <td></td> <td>1.0</td> <td>0.4</td> <td>0.8</td> <td>2.6</td> </tr> <tr> <td>MNR32 / 34</td> <td></td> <td>2.1</td> <td>0.8</td> <td>1.27</td> <td>4.1</td> </tr> </tbody> </table>	Type	Dimension	a	b	p	f	MNR12 / 14		1.0	0.4	0.8	2.6	MNR32 / 34		2.1	0.8	1.27	4.1																
Type	Dimension	a	b	p	f																													
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MNR32 / 34		2.1	0.8	1.27	4.1																													
MNR35																																		
  <p>R circuit</p>																																		
MVR21	MVR22/32/34 Series																																	
	 <table border="1" data-bbox="821 1803 1220 1915"> <thead> <tr> <th>Type</th> <th>Dimension</th> <th>P1</th> <th>P2</th> <th>P3</th> <th>P4</th> <th>P5</th> <th>P6</th> <th>P7</th> <th>P8</th> <th>P9</th> </tr> </thead> <tbody> <tr> <td>MVR22</td> <td></td> <td>0.7</td> <td>0.65</td> <td>2.0</td> <td>0.8</td> <td>0.8</td> <td>0.7</td> <td>0.9</td> <td>3.2</td> <td>1.1</td> </tr> <tr> <td>MVR32/MVR34 (Type3 / Reflow type)</td> <td></td> <td>0.8</td> <td>1.2</td> <td>3.2</td> <td>1.2</td> <td>1.0</td> <td>0.9</td> <td>1.5</td> <td>4.6</td> <td>1.6</td> </tr> </tbody> </table>	Type	Dimension	P1	P2	P3	P4	P5	P6	P7	P8	P9	MVR22		0.7	0.65	2.0	0.8	0.8	0.7	0.9	3.2	1.1	MVR32/MVR34 (Type3 / Reflow type)		0.8	1.2	3.2	1.2	1.0	0.9	1.5	4.6	1.6
Type	Dimension	P1	P2	P3	P4	P5	P6	P7	P8	P9																								
MVR22		0.7	0.65	2.0	0.8	0.8	0.7	0.9	3.2	1.1																								
MVR32/MVR34 (Type3 / Reflow type)		0.8	1.2	3.2	1.2	1.0	0.9	1.5	4.6	1.6																								

Notes

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