

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

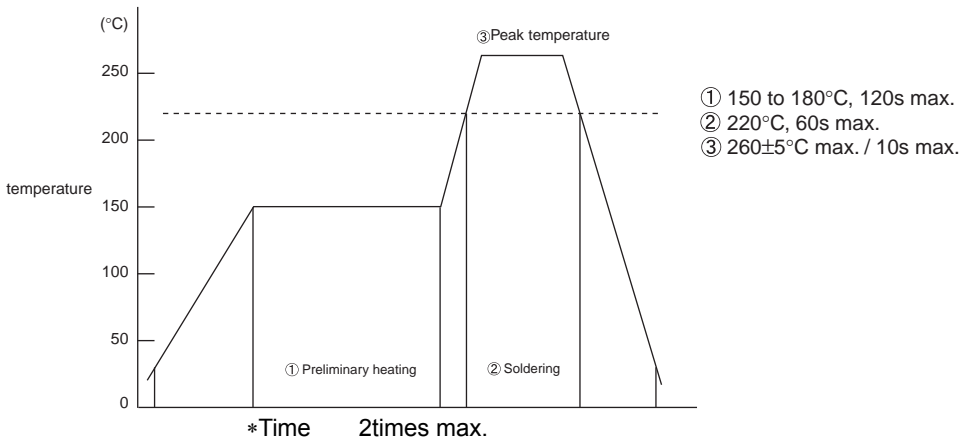
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● Recommended reflow soldering conditions

Corresponded products

MCR series / MNR series / ESR series / KTR series / TRR series /
LTR series / PMR series / PML series / UCR series / PSR series



● Recommended flow soldering conditions

Peak temperature 265°C, 10s max.

Number of times one time

Corresponded products

MCR series (except for MCR004 series) / MNR series (except for MNR02 / 04 / 12 / 14 / 15 / 18 series) /
ESR series / KTR series / LTR series / TRR series / PSR series

● Recommended hand soldering conditions

Temperature 350°C

Time 3s Max.

Times one time

Watt 20W Max.

Corresponded products

MCR series (except for MCR004 / 006 series) / MNR series (except for MNR15 / 18 series) /
ESR series / KTR series / TRR series / LTR series / PMR series / PML series / UCR series / PSR series

● **Recommended washing conditions**

Corresponded products

MCR series / MNR series / ESR series / KTR series / TRR series /
LTR series / PMR series / PML series / UCR series

*Please contact us about PSR 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

*Alternative HCFC : The use of HCFC as AK225AES left to the discretion of customers.

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	

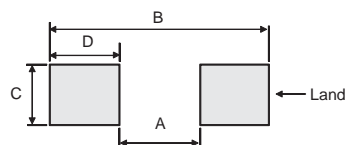
3. Condition of drying

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

●Sample of land pattern

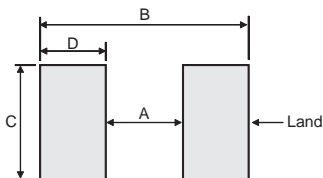
(Unit : mm)

MCR / ESR / KTR / TRR



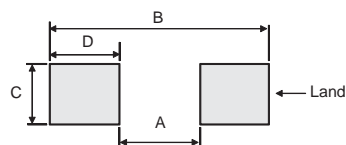
MCR	ESR	KTR	TRR	Dimensions			
				A	B	C	D
MCR004	-	-	-	0.2	0.4	0.16	0.1
MCR006	-	-	-	0.3	0.84	0.3	0.27
MCR01	ESR01	-	TRR01	0.5	1.3	0.5	0.4
MCR03	ESR03	KTR03	TRR03	1.0	2.0	0.8	0.5
MCR10	ESR10	KTR10	TRR10	1.2	2.6	1.15	0.7
MCR18	ESR18	KTR18	TRR18	2.2	4.0	1.5	0.9
MCR25	ESR25	KTR25	-	2.2	4.0	2.3	0.9
MCR50	-	-	-	3.8	6.0	2.3	1.1
MCR100	-	-	-	5.1	8.1	3.0	1.5

LTR / LTR - Low ohmic -



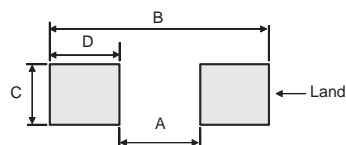
LTR	LTR -low ohmic-	Dimensions			
		A	B	C	D
LTR10		0.50	2.70	2.00	1.10
LTR18		0.60	2.90	3.20	1.15
LTR50	-	0.75	3.35	5.00	1.30
LTR100		0.83	3.69	6.4	1.43

UCR



Part No.	Dimensions			
	A	B	C	D
UCR01	0.5	1.8	0.5	0.65
UCR03	0.5	2.5	0.9	1.0
UCR10	0.8	3.4	1.3	1.3
UCR18	1.4	4.0	1.8	1.3

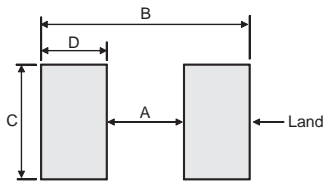
PMR/PMR - Jumper type -



Part No.	Dimensions			
	A	B	C	D
PMR01	0.5	1.8	0.5	0.65
PMR03	0.5	2.5	0.9	1.0
PMR10	0.8	3.4	1.3	1.3
PMR18	1.0	4.0	1.8	1.5
PMR25	1.0	4.0	2.8	1.5
PMR50	1.8	6.0	2.8	2.1
PMR100	1.2 (1mΩ) 2.4 (2,3,4,6mΩ, Jumper) 3.0 (5,7,8,9,10mΩ)	6.8 (1mΩ) 7.6 (2 to 10mΩ, Jumper)	3.4 (1mΩ) 3.8 (2 to 10mΩ, Jumper)	2.8 (1mΩ) 2.6 (2,3,4,6mΩ, Jumper) 2.3 (5,7,8,9,10mΩ)

(Unit : mm)

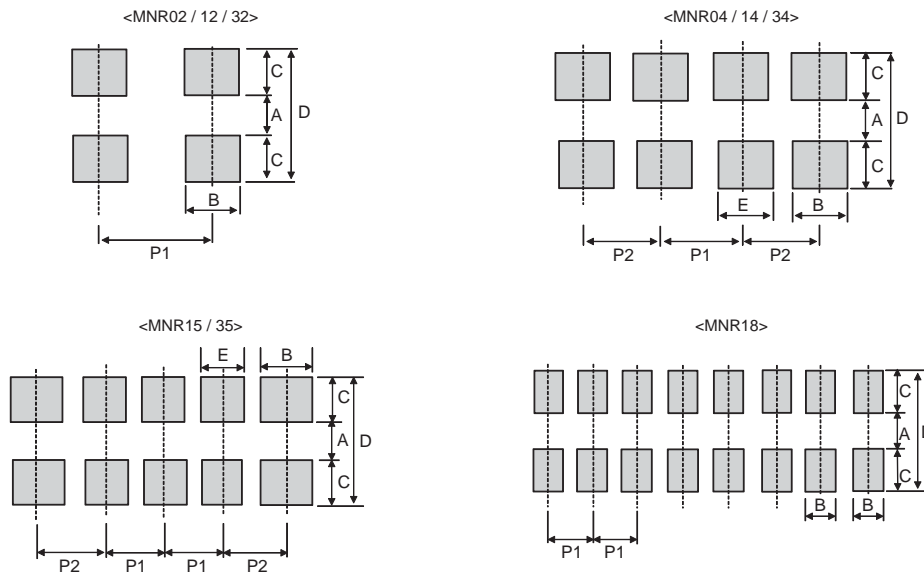
PML



Part No.	A	B	C	D
PML10	0.14	1.6	2.0	0.73
PML18	0.325	2.675	3.2	1.175
PML100	0.8	4.2	6.4	1.7

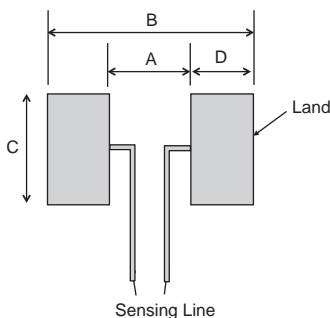
MNR

Land



Part No.	A	B	C	D	E	P1	P2
MNR02	0.5	0.35 to 0.4	0.5	1.5	-	0.65 to 0.7	-
MNR04	0.5	0.4	0.5	1.5	0.3	0.5	0.5 to 0.55
MNR12	1.0	0.4 to 0.6	0.7 to 0.8	2.4 to 2.6	-	0.8 to 1.0	-
MNR14	1.0	0.4 to 0.6	0.7 to 0.8	2.4 to 2.6	0.4	0.8	0.8 to 0.9
MNR15	1.0	0.48	0.7 to 0.8	2.4 to 2.6	0.32	0.64	0.72
MNR18	1.0	0.3	0.7 to 0.8	2.4 to 2.6	-	0.5	-
MNR32	2.1	0.8 to 1.0	0.8 to 1.0	3.7 to 4.1	-	1.27 to 1.6	-
MNR34	2.1	0.8 to 1.0	0.8 to 1.0	3.7 to 4.1	0.7 to 0.8	1.27 to 1.35	1.27 to 1.45
MNR35	2.1	0.8 to 1.0	0.8 to 1.0	3.7 to 4.1	0.7 to 0.8	1.27 to 1.3	1.27 to 1.4

PSR



Type	A	B	C	D
PSR500	5.60	16.00	8.75	5.20
PSR400		11.00	6.20	2.70

*This land pattern is only for standard pattern.
This does not guarantee the characteristics of the parts

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