

## Thick Film Chip Resistors & Arrays Quick Reference Data

### ■ General purpose Chip-R

Type	Series No.	Size	Power Rating @ 70°C	TCR (ppm/°C)	Max. RCWV	Max. Overload Voltage	Resistance Tolerance (±%)	Resistance Range	Standard Resistance Value	Operating Temperature	
General purpose  (Included Non Pb free and Pb free)	WR12X / WR12W	1206 (3216)	1/4W	100	200V	400V	1%	1Ω ~ 10MΩ	E-96	-55°C ~+155°C	
				200			5%		E-24		
	WR08X / WR08W	0805 (2012)	1/8W	100	150V	300V	1%		E-96		
				200			5%		E-24		
	WR06X / WR06W	0603 (1608)	1/10W	100	50V	100V	1%		E-96		
				200			5%		E-24		
	WR04X / WR04W	0402 (1005)	1/16W	200	50V	100V	1%		E-96		
				200*			5%		E-24		
	WR02X	0201 (0603)	1/20W	300	15V	30V	5%		10Ω ~ 1MΩ		E-24
	Power Resistors	WR25X	2512 (6432)	1W	200	250V	500V		1%		1Ω ~ 10MΩ
200*					5%			E-24			
WR18X		1218 (3248)	1W	100	200V	400V	1%	E-96			
				100			5%	E-24			
WR20X		2010 (5025)	1/2W	200	200V	400V	1%	E-96			
				200*			5%	E-24			

Remark :

\* means TCR200ppm@10Ω ~ 1MΩ. Detail resistance v.s. TCR please refer to specification.

Pb free terminations for other products upon customer requested.

### ■ Low resistance Chip-R

Type	Series No.	Size	Power rating @ 70°C	TCR (ppm/°C)	Max. RCWV	Max. Overload Voltage	Resistance Tolerance (±%)	Resistance Range	Standard Resistance Value	Operating Temperature
Thick film Low Ohmic	WW25X	2512 (6432)	1W	≤1500**	250V	500V	1	0.020Ω ~ 0.976Ω	Upon requested	-55°C ~+155°C
	WW18X	1218 (3248)	1W		200V	400V	5	0.020Ω ~ 0.910Ω		
							1	0.020Ω ~ 0.976Ω		
	WW20X	2010 (5025)	1/2W		200V	400V	5	0.020Ω ~ 0.910Ω		
				1			0.020Ω ~ 0.976Ω			
	WW12X	1206 (3216)	1/4W	200V	400V	1%, 2%, 5%	0.020Ω ~ 0.976Ω			
	WW08X	0805 (2012)	1/8W	100V	200V					
Sensing type Low ohmic	WW06X	0603 (1608)	1/10W	≤600	50V	100V	1%, 2%, 5%	0.100Ω ~ 0.976Ω		
							1%, 5%			
WW04X	0402 (1005)	1/16W	≤100	250V	500V	1%, 5%	0.010Ω ~ 0.002Ω			

Remark : 1. \*\* means TCR1500ppm@0.02Ω. Detail resistance v.s. TCR please refer to specification.  
2. Pb free terminations for other products upon customer requested.

### ■ Chip-Array and Chip-Network

Type	Series No.	Size	Power Rating @ 70°C	TCR (ppm/°C)	Max. RCWV	Max. Overload Voltage	Resistance Tolerance (±%)	Resistance Range	Standard Resistance Value	Operating Temperature
Arrays	WA06X	0603x4 Convex	1/10W	200	50V	100V	1%, 5%	10Ω ~ 1MΩ	E-24	-55°C ~+155°C
	WA06T	0603x4 Concave	1/16W	200	50V	100V	5%	10Ω ~ 1MΩ	E-24	
	WA04X	0805 (0402x4)	1/16W	300	25V	50V	5%	10Ω ~ 1MΩ	E-24	
	WA04Y	0404 (0402x2)	1/16W	300	25V	50V	5%	10Ω ~ 1MΩ	E-24	
	WA06W	0602x8 Convex	1/16W	200	25V	50V	5%	10Ω ~ 100KΩ	E-24	-55°C ~+125°C
Network	WT04X	1206 (10p8R)	1/16W	200	25V	50V	5%	10Ω ~ 100KΩ	E-24	-55°C ~+155°C

Remark : Pb free terminations for other products upon customer requested.

### ■ Special Functionality Chip-R

Type	Series No.	Size	Power rating @ 70°C	TCR (ppm/°C)	Max. RCWV	Max. Overload Voltage	Resistance Tolerance (±%)	Resistance Range	Standard Resistance Value	Operating Temperature
High Ohmic	WF12G	1206 (3216)	1/4W	300	200V	400V	5	11MΩ ~ 30MΩ	E-24	-55°C ~+125°C
	WF08G	0805 (2012)	1/8W		150V	300V				
	WF06G	0603 (1608)	1/16W		50V	100V				
High Precision	WF12H	1206 (3216)	1/4W	100	200V	400V	0.1 ~ 0.5	10Ω ~ 1MΩ	E-96	
	WF08H	0805 (2012)	1/8W		100V	200V				
	WF06H	0603 (1608)	1/10W		50V	100V				
	WF04H	0402 (1005)	1/16W	200	50V	100V	0.5 ~ 1	90Ω ~ 1MΩ	E96	
	WF12K	1206 (3216)	1/4 W	50	200V	400V				
Trimmable	WF20M	2010 (5025)	1/2 W	200	200V	400V	0/-20, 0/-30	1Ω ~ 10MΩ	E-24	
	WF12M	1206 (3216)	1/4 W		200V	400V				
	WF08M	0805 (2012)	1/8 W		100V	200V				
	WF06M	0603 (1608)	1/10 W		50V	100V				
Au termination	WF06D	0603 (1608)	1/10 W	100	50V	100V	1	10Ω ~ 1MΩ	E-96	
				200	50V	100V	5	1Ω ~ 10MΩ	E-24	
	WF04D	0402 (1005)	1/16 W	100	50V	100V	1	10Ω ~ 1MΩ	E-96	
				200	50V	100V	5	1Ω ~ 10MΩ	E-24	
Special Resistance	WFxxX	Upon requested	Depend on Size			Upon requested	Non E96 resistance	Upon requested		

### ■ Chip attenuator

Type	Series No.	Size	Attenuation (dB)	Tolerance (dB)	Impedance	VSWR	Freq. Range	Construction	Operating Temperature
Attenuator	WA04P	0402x2 Convex	1~10 dB	±0.3dB, ±0.5dB	50Ω	Max. 1.3	DC to 2GHz	4p3R, π type	-55°C ~+155°C

Remark : Pb free terminations for other products upon customer requested.