Passive Plus Inc.
RF & Microwave Components

Resistor Selection Charts

◆ Microwave Resistance By Case Size

Case Size mils	Case Size inches	Min (Ω)	Max (Ω)
12 x 9	(0.012 x 0.009)	4	500
14 x 12	(0.014 x .0012)	4	750
20 x 10	(0.020 x 0.100)	6	1000
15 x 15	(0.015 x 0.015)	4	1000
20 x 20	(0.020 x 0.020)	4	1250
30 x 20	(0.030 x 0.020)	4	2500
40 x 20	(0.040 x 0.020)	4	3750
30 x 30	(0.030 x 0.030)	2	2500
35 x 35	(0.035 x 0.035)	2	3000
40 x 40	(0.040 x 0.040)	2	3750
50 x 25	(0.050 x 0.025)	3	5000
60 x 30	(0.060 x 0.030)	3	5000
50 x 50	(0.050 x 0.050)	2	5000
60 x 60	(0.060 x 0.060)	2	5000
80 x 50	(0.080 x 0.050)	2	5000
100 x 50	(0.100 x 0.050)	2	5000
120 x 60	(0.12 x 0.060)	2	5000
100 x 100	(0.100 x 0.100)	2	5000

◆ Standard Resistance Ranges by Case Size

Case Size mils	Case Size inches	Min (Ω)	Max (Ω) Alumina	Max (Ω) Silicon
12 x 9	(0.012 x 0.009)	1 - 3	25K	150K
14 x 12	(0.014 x .0012)	1 - 3	40K	200K
20 x 10	(0.020 x 0.100)	1 - 3	60K	250K
15 x 15	(0.015 x 0.015)	1 - 2	70K	500K
20 x 20	(0.020 x 0.020)	1 - 2	125K	750K
30 x 20	(0.030 x 0.020)	1 - 2	200K	1M
40 x 20	(0.040 x 0.020)	1 - 2	250K	1.5M
30 x 30	(0.030 x 0.030)	1 - 2	275K	2M
35 x 35	(0.035 x 0.035)	1 - 2	300K	3M
40 x 40	(0.040 x 0.040)	1 - 2	500K	5M
50 x 25	(0.050 x 0.025)	1 - 2	300K	3M
60 x 30	(0.060 x 0.030)	1 - 2	500K	6M
50 x 50	(0.050 x 0.050)	1 - 2	700K	7M
60 x 60	(0.060 x 0.060)	1 - 2	2M	15M
80 x 50	(0.080 x 0.050)	1 - 2	2M	20M
100 x 50	(0.100 x 0.050)	1 - 2	2.5M	25M
120 x 60	(0.12 x 0.060)	1 - 2	3M	30M
100 x 100	(0.100 x 0.100)	1 - 2	3.5M	35M

◆ Power Handling by Material and Case Size

Case Size mils	Case Size inches	Alumina (C35)	Silicon (C-22)	AlN (C-28)	BeO (C-25)	Quartz (C-20)
12 x 9	(0.012 x 0.009)	50 mW	50 mW	200 mW	400 mW	10 mW
14 x 12	(0.014 x .0012)	100 mW	100 mW	400 mW	800 mW	20 mW
20 x 10	(0.020 x 0.100)	100 mW	100 mW	400 mW	800 mW	20 mW
15 x 15	(0.015 x 0.015)	100 mW	100 mW	400 mW	800 mW	20 mW
20 x 20	(0.020 x 0.020)	250 mW	250 mW	1.0 W	2.0 W	50 mW
30 x 20	(0.030 x 0.020)	250 mW	250 mW	1.0 W	2.0 W	50 mW
40 x 20	(0.040 x 0.020)	250 mW	250 mW	1.0 W	2.0 W	50 mW
30 x 30	(0.030 x 0.030)	250 mW	250 mW	1.0 W	2.0 W	50 mW
35 x 35	(0.035 x 0.035)	250 mW	250 mW	1.0 W	2.0 W	50 mW
40 x 40	(0.040 x 0.040)	350 mW	350 mW	1.4 W	2.8 W	70 mW
50 x 25	(0.050 x 0.025)	350 mW	350 mW	1.4 W	2.8 W	70 mW
60 x 30	(0.060 x 0.030)	500 mW	500 mW	2.0 W	4.0 W	100 mW
50 x 50	(0.050 x 0.050)	500 mW	500 mW	2.0 W	4.0 W	100 mW
60 x 60	(0.060 x 0.060)	500 mW	500 mW	2.0 W	4.0 W	100 mW
80 x 50	(0.080 x 0.050)	500 mW	500 mW	2.0 W	4.0 W	100 mW
100 x 50	(0.100 x 0.050)	500 mW	500 mW	2.0 W	4.0 W	100 mW
120 x 60	(0.12 x 0.060)	750 mW	750 mW	3.0 W	6.0 W	125 mW
100 x 100	(0.100 x 0.100)	750 mW	750 mW	3.0 W	6.0 W	125 mW

◆ Power Codes

Watts	Code
10 mW	A
20 mW	B
50 mW	C
75 mW	D
100 mW	E
150mW	F
250 mW	G
500 mW	H
750 mW	J
1.0 W	K
2.0 W	L
3.0 W	N
4.0 W	P
5.0 W	Q
10 W	S
15W	T
20W	V
25W	W
50 W	X

Resistor Selection Charts

◆ Standard Resistance Tolerance Codes

Tolerance	Code	Tolerance	Code	Tolerance	Code	Tolerance	Code
± 20%	M	± 5%	J	± 1%	F	± 0.05%	Q
± 15%	L	± 3%	H	± 0.5%	D	± 0.01%	S
± 10%	K	± 2%	G	± 0.1%	B		

◆ Bonding Pad Metalizations

Metalization		Code
Top Side	Bottom Side	
Pd / Au	–	A
Pd / Au	Ta / Pd / Au	D
Pd / Au	Ti / Pt / Au	L
Pd / Au	Au (Sputtered)	K
Solder Applications		R
Ni / Au	Application Specific	P
Ti / Pt / Au	–	C
TiW / Au	–	E
TiW / Au	Ta / Pd / Au	F
Window	Silicon Only	W
Custom (Application - Specific)		X

Higher power ratings, additional sizes, and custom resistors available. Please contact sales@passiveplus.com.

◆ Materials Available

Material	Code
Quartz	20
Silicon	22
Beryllium Oxide (BeO)	25
Aluminum Nitride (AlN)	28
Alumina (Al_2O_3)	35
Custom substrates available	

◆ Temperature Coefficient of Resistance

TCR	Available on TaN	Available on NiCr	Code
±150ppm / °C	Standard	No	Q
±100ppm / °C	Yes	No	V
±50ppm / °C	Yes	Yes	W
±25ppm / °C		Standard	X
±10ppm / °C		Yes	Y
±5ppm / °C		Yes	Z

Performance Specifications

Typical PPI commercial testing includes 100% visual inspection, 100% electrical testing with short time overload, and TCR sampling. Our parts meet or exceed additional MIL-PRF-55342 and MIL-STD-202 requirements.