

PANASONIC Thin Film Resistors



RoHS Compliant This product is RoHS compliant.

Features:

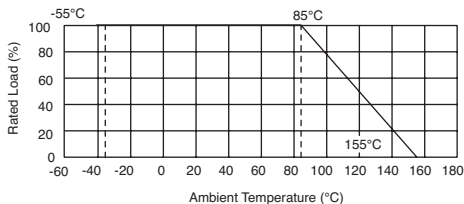
- High reliability: Stable at high temperature and humidity (85°C 85% RH rated load, Category temperature range: -55°C to +155°C)
- High accuracy: Small resistance tolerance and Temperature Coefficient of Resistance
- High performance: Low current noise, excellent non-linearity
- Reference Standard: IEC 60115-8, JIS C 5201-8, EIAJ RC-2133A



Type (in.)	DIMENSIONS: (mm)					Mass(lb) (g/1000pcs.)
	L	W	a	b	t	
ERA2A (0402)	1.00 (±0.10)	0.50 (0.10±0.05)	0.15 (±0.10)	0.25 (±0.10)	0.35 (±0.05)	0.6
ERA3A (0603)	1.60 (±0.20)	0.80 (±0.20)	0.30 (±0.20)	0.30 (±0.20)	0.45 (±0.10)	2
ERA6A (0805)	2.00 (±0.20)	1.25 (±0.10)	0.40 (±0.25)	0.40 (±0.25)	0.50 (±0.10)	4
ERA8A (1206)	3.20 (±0.20)	1.60 (±0.10)	0.50 (±0.25)	0.50 (±0.25)	0.60 (±0.10)	4

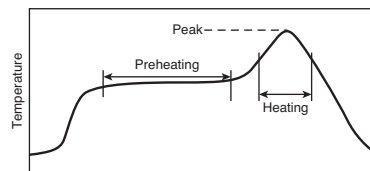
Power Derating Curve:

For resistors operated in ambient temperatures above 85°C, power rating shall be derated in accordance with the figure on the right.



Recommended Soldering Conditions:

- Reflow soldering shall be performed a maximum of two times
- Please contact us for additional information when used in conditions other than those specified
- Please measure the temperature of the terminals and study every kind of solder and printed circuit board for solderability before actual use



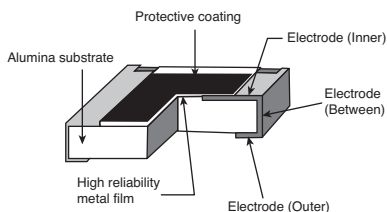
For Soldering (Example: Sn/Pb)			For Lead-Free Soldering (Example: Sn/Ag/Cu)		
	Temperature	Time		Temperature	Time
Preheating	140°C to 160°C	60s to 120s	Preheating	150°C to 180°C	60s to 120s
Main heating	Above 200°C	30s to 40s	Main heating	Above 230°C	30s to 40s
Peak	235°C±5°C	max. 10s	Peak	max. 260°C	max. 10s

• Recommended soldering conditions for flow

	For Soldering		For Lead-Free Soldering	
	Temperature	Time	Temperature	Time
Preheating	140°C to 180°C	60s to 120s	150°C to 180°C	60s to 120s
Soldering	245°C ± 5°C	20s to 30s	max. 260°C	max. 10s

SMD Resistors

Panasonic



0.1% 25PPM THIN FILM CHIP RESISTORS

TABLE OF STOCKED VALUES

Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code
10	100	56	560	180	181	475	4750	1.21K	1211	3.9K	392	10K	103	27.4K	2742	75K	753	205K	2053	619K	6193
11	110	56.2	56R2	182	1820	499	4990	1.3K	132	3.92K	3921	10.2K	1022	30K	303	76.8K	7682	220K	224	620K	624
12	120	61.9	61R9	200	201	510	511	1.37K	1371	4.3K	432	11K	113	30.1K	3012	82K	823	221K	2213	562K	5623
13	130	62	620	205	2050	511	5110	1.5K	152	4.32K	4321	11.5K	1152	33K	333	82.5K	8252	240K	244	680K	684
15	150	68	680	221	2210	560	561	1.54K	1541	4.7K	472	12K	123	33.2K	3322	90.9K	9092	243K	2433	681K	6813
16	160	68.1	68R1	240	241	562	5620	1.6K	162	4.75K	4751	12.1K	1212	36K	363	91K	913	270K	274	715K	7153
18	180	82	820	249	2490	619	6190	1.82K	1821	4.99K	4991	13K	133	39K	393	100K	104	274K	2743	750K	754
20	200	82.5	82R5	270	271	680	681	2.0K	202	5.11K	5111	13.3K	1332	39.2K	3922	102K	1023	300K	304	820K	824
22	220	90.9	90R9	274	2740	681	6810	2.05K	2051	5.6K	562	15.4K	1542	43.2K	4322	110K	114	301K	3013	825K	8253
24	240	91	910	300	301	750	751	2.2K	222	5.62K	5621	16K	163	47K	473	113K	1133	330K	334	909K	9093
30	300	100	101	301	3010	768	7680	2.21K	2211	6.19K	6191	16.5K	1652	47.5K	4752	121K	1213	332K	3323	910K	914
33	330	110	111	330	331	820	821	2.4K	242	6.2K	622	18K	183	49.9K	4992	130K	134	390K	394	1M	105
36	360	115	1150	332	3320	825	8250	2.49K	2491	6.8K	682	18.2K	1822	51K	513	133K	1333	392K	3923		
39	390	120	121	360	361	909	9090	2.7K	272	6.81K	6811	20K	203	51.1K	5112	150K	154	430K	434		
43	430	121	1210	365	3650	910	911	2.74K	2741	7.5K	752	20.5K	2052	56K	563	154K	1543	470K	474		
47	470	130	131	390	391	1.0K	101	3.0K	302	7.68K	7681	22K	223	56.2K	5622	160K	164	475K	4753		
47.5	47R5	133	1330	392	3920	1.02K	1021	3.01K	3011	8.2K	822	22.1K	2212	61.9K	6192	162K	1623	499K	4993		
49.9	49R9	150	151	430	431	1.1K	112	3.3K	332	8.25K	8251	24K	243	62K	623	180K	184	510K	514		
51	510	160	161	432	4320	1.15K	1151	3.32K	3321	9.09K	9091	24.3K	2432	68K	683	182K	1823	511K	5113		
51.1	51R1	165	1650	470	471	1.2K	122	3.6K	362	9.1K	912	27K	273	68.1K	6812	200K	204	560K	564		



For quantities greater than listed, call for quote.

Size	MOUSER STOCK NO.		Panasonic Part No.	Value Range	Power Rating @85°C	RCWW (max Vdc)	Max. Overload Voltage (Vdc)	Tolerance	T.C.R. (ppm/°C)	Price Each				Reel Quantity	Price Per Piece
	Value	Suffix								1	100	500	1000		
0402	667-ERA-2AEB-	Code- X	ERA-2AEB-Code-X	47-100K E24	0.063	25	50	±0.1%	25	.65	.219	.147	.11	10000	.061
0603	667-ERA-3AEB-	Code- V	ERA-3AEB-Code-V	47-330K E24	0.10	75	150	±0.1%	25	.54	.168	.099	.076	5000	.043
0805	667-ERA-6AEB-	Code- V	ERA-6AEB-Code-V	47-1M E24	0.125	100	200	±0.1%	25	.54	.168	.099	.076	5000	.043
1206	667-ERA-8AEB-	Code- V	ERA-8AEB-Code-V	47-1M E24	0.25	150	300	±0.1%	25	.67	.374	.312	.287	5000	.159

0.05% 10PPM THIN FILM CHIP RESISTORS

TABLE OF STOCKED VALUES

Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code	Value (Ω)	Code
1.2K	122	2.2K	222	3.9K	392	5.6K	562	1K	102	15K	153	27K	273	47K	473	68K	683		
1.5K	152	2.7K	272	4.7K	472	6.8K	682	10K	103	18K	183	33K	333	51K	513	82K	823		
1.8K	182	3.3K	332	5.1K	512	8.5K	822	12K	123	22K	223	39K	393	56K	563	100K	104		



For quantities greater than listed, call for quote.

Size	MOUSER STOCK NO.		Panasonic Part No.	Value Range	Power Rating @85°C	RCWW (max Vdc)	Max. Overload Voltage (Vdc)	Tolerance	T.C.R. (ppm/°C)	Price Each				Reel Quantity	Price Per Piece
	Value	Suffix								1	100	500	1000		
0603	667-ERA-3ARW-	Code- V	ERA-3ARW-Code-V	1.2K-100K	0.10	75	150	0.05%	10	1.20	.664	.553	.509	5000	.283
0805	667-ERA-6ARW-	Code- V	ERA-6ARW-Code-V	1.2K-100K	0.125	100	200	0.05%	10	1.32	.731	.609	.56	5000	.312

