PANASONIC® 0805/1206/1210/2512 5% & 0805/1206 1%

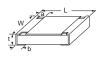
Surface Mount Ultra Low Ohm Thick Film Chip Resistors — 1/10, 1/8, 1/4 and 1 Watt

Rated Continuous Working Voltage (RCWV): The rated voltage at each resistance should be calculated from the following equation: RCWV= \sqrt{P} x R

 $RCWV(V):P(W):R(\Omega)$

Max. overload voltage = RCWVx2.5

	Value	Digi-Key						Pricing					Panasonic
Description	Range	Part No.	10	50	200	1M	3M	5M	9M	10M	24M	50M	Part No.
1/10 W, 0805, 5% Chip Resistors; Tape & Reel (5000/pkg.)	(.118Ω)	P + Value + "BTR-ND"	_	_	_	_	_	225.27/M	_	200.24/M	_		ERJ-6RSJxxxV
1/10 W, 0805, 5% Chip Resistors; Tape & Reel (5000/pkg.)	(.22 ~ 9.1Ω)	P + Value + "BTR-ND"	_		_			96.55/M		85.82/M		64.37/M	ERJ-6RQJxxxV
1/10 W, 0805, 5% Chip Resistors; Tape	(.1 ~ .18Ω)	P + Value + "BCT-ND"	14.32	38.54	88.54	234.38	_	_	_	_	_	_	ERJ-6RSJxxx
1/10 W, 0805, 5% Chip Resistors; Tape	(.22 ~ 9.1Ω)	P + Value + "BCT-ND"	6.45	17.36	39.87	105.55							ERJ-6RQJxxx
1/10 W, 0805, 1% Chip Resistors; Tape & Reel (5000/pkg.)	$(.22 - 9.1\Omega)$	P + Value + "DTR-ND"	_	_	_	_	_	152.87/M	_	135.88/M	_	101.91/M	ERJ-6RQFxxxV
1/10 W, 0805, 1% Chip Resistors; Tape	(.22 ~ 9.1Ω)	P + Value + "DCT-ND"	9.89	26.62	61.15	161.87							ERJ-6RQFxxx
1/8 W, 1206, 5% Chip Resistors; Tape & Reel (5000/pkg.)	(.1 ~ .18Ω)	P + Value + "PTR-ND"	_	_	_	_	_	213.19/M	_	189.50/M	_		ERJ-8RSJxxxV
1/8 W, 1206, 5% Chip Resistors; Tape & Reel (5000/pkg.)	(.22 ~ 9.1Ω)	P + Value + "PTR-ND"	_		_			84.47/M		75.08/M		56.31/M	ERJ-8RQJxxxV
1/8 W, 1206, 5% Chip Resistors; Tape	(.1 ~ .18Ω)	P + Value + "PCT-ND"	13.58	36.54	83.94	222.19	_	_	_	_	_	_	ERJ-8RSJxxx
1/8 W, 1206, 5% Chip Resistors; Tape	(.22 ~ 9.1Ω)	P + Value + "PCT-ND"	5.71	15.37	35.31	93.47							ERJ-8RQJxxx
1/8 W, 1206, 1% Chip Resistors; Tape & Reel (5000/pkg.)	$(.22 - 9.1\Omega)$	P + Value + "RTR-ND"	_	_	_	_	_	140.79/M	_	125.14/M	_	93.86/M	ERJ-8RQFxxxV
1/8 W, 1206, 1% Chip Resistors; Tape	(.22 ~ 9.1Ω)	P + Value + "RCT-ND"	9.15	24.63	56.58	149.78						_	ERJ-8RQFxxx
1/4 W, 1210, 5% Chip Resistors; Tape & Reel (5000/pkg.)	$(.118\Omega)$	P + Value + "STR-ND"	_	_	_	_	_	223.45/M	_	178.76/M	_		ERJ-14RSJxxxU
1/4 W, 1210, 5% Chip Resistors; Tape & Reel (5000/pkg.)	(.22 ~ 9.1Ω)	P + Value + "STR-ND"	_		_			134.08/M		107.26/M		80.45/M	ERJ-14RQJxxxU
1/4 W, 1210, 5% Chip Resistors; Tape	(.1 ~ .18Ω)	P + Value + "SCT-ND"	12.84	34.55	79.37	280.14	_	_	_	_	_	_	ERJ-14RSJxxx
1/4 W, 1210, 5% Chip Resistors; Tape	(.22 ~ 9.1Ω)	P + Value + "SCT-ND"	7.92	21.32	48.99	172.89		_				_	ERJ-14RQJxxx
1 W, 2512, 5% Chip Resistors; Tape & Reel (3000/ pkg.)	(.1 ~ .18Ω)	P + Value + "UTR-ND"	_	_	_	_	536.32/M	_	429.06/M	_	362.02/M	_	ERJ-1WRSJxxxU
1 W, 2512, 5% Chip Resistors; Tape & Reel (3000/ pkg.)	(.22 ~ 9.1Ω)	P + Value + "UTR-ND"			_		286.04/M		228.84/M		193.08/M		ERJ-1WRQJxxxU
1 W, 2512, 5% Chip Resistors; Tape	(.1 ~ .18Ω)	P + Value + "UCT-ND"	25.86	81.65	204.12	612.36	_	_	_	_	_	_	ERJ-1WRSJxxx
1 W, 2512, 5% Chip Resistors; Tape	(.22 ~ 9.1Ω)	P + Value + "UCT-ND"	13.97	44.11	110.27	330.80	_	_	_	_	_	_	ERJ-1WRQJxxx



Type (Power			D	imensions (m	m)			Panasonic
Rating)	Туре	L	W	t	a	b	Temperature Coefficient	Part No.
1/10 Watt	0805	2.00	1.25	0.60	0.40	0.40	.1 ~ .91Ω ±250ppm/°C/1.0 ~ 9.1 Ohm + ±200ppm/C	ERJ-6RS/Q
1/8 Watt	1206	3.20	1.60	0.60	0.50	0.50	.1 ~ .91Ω ±250ppm/°C/1.0 ~ 9.1 Ohm + ±200ppm/C	ERJ-8RS/Q
1/4 Watt	1210	3.20	2.50	0.60	0.50	0.50	.1 ~ .91Ω ±200ppm/°C/1.0 ~ 9.1 Ohm + ±100ppm/C	ERJ-14RS/Q
1 Watt	2512	6.40	3.20	1 10	0.65	1.30	1 ~ 91Q +200npm / °C/1 0 ~ 9 1 0hm + +100npm/C	FR I-1WRS/O

PANASONIC® 0402/0603/0805/1206/1210/2010/2512

Surface Mount 5% Thick Film Chip Resistors — 1/16, 1/10, 1/8, 1/4, 1/2 and 1 Watt

									Stand	dard Res	sistor Va	alues									
								See beld	ow for co	mplete pa	art numbe	rs when c	rdering.								
10 1 11 2 13 15 16	18 20 22 24 27 30	33 36 39 43 47 51	56 62 68 75 82 91	100 110 120 130 150 160	180 200 220 240 270 300	330 360 390 430 470 510	560 620 680 750 820 910	1.0K 1.1K 1.2K 1.3K 1.5K 1.6K	1.8K 2.0K 2.2K 2.4K 2.7K 3.0K	3.3K 3.6K 3.9K 4.3K 4.7K 5.1K	5.6K 6.2K 6.8K 7.5K 8.2K 9.1K	10K 11K 12K 13K 15K 16K	18K 20K 22K 24K 27K 30K	33K 36K 39K 43K 47K 51K	56K 62K 68K 75K 82K 91K	100K 110K 120K 130K 150K 160K	180K 200K 220K 240K 270K 300K	330K 360K 390K 430K 470K 510K	560K 620K 680K 750K 820K 910K	1.0M 1.1M 1.2M 1.3M 1.5M 1.6M	1.8M 2.0M 2.2M

1/8 W 1206 5% Chip Resistor

Assortments

CR2-KIT-ND 200 ea. (same values as kit above)...\$329.00

1/10 W 0805 5% Chip Resistor Assortments

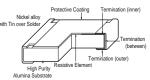
 CR4A-KIT-ND 50 ea. of every other value from 11, 13, 16, 20, etc. 910K (3,000)
 \$89.95

 CR4-KIT-ND 200 ea. (same values as kit above)
 \$349.00

1/16 W 0603 5% Chip Resistor Assortments

1/16 W 0402 5% Chip Resistor Assortments

CR8-KIT-ND 200 ea. (same values as kit above) .. \$399.00





Resistance To Soldering Heat: $\pm~(1.0\%~1~0.1\Omega)$ max. with no evidence of mechanical damage. Test Temperature: $270^{\circ}~\pm~5^{\circ}\text{C}$ Dip Time: 10 Seconds.

Power			Max.							
Rating		Max.	Overload		Dime	nsions	(mm)			Panasonic
(Watt)	Type	RCWV	Voltage	L	W	t	а	b	Temperature Coefficient	Part No.
1/16	0603	50V	100V	1.60	0.8	0.45	0.3	0.3	10Ω ~ 1MΩ: ±250ppm/°C, >1MΩ, ~ -300; +100	ERJ-3GSY
1/16	0402	50V	100V	1.00	0.5	0.35	0.2	0.25	$10\Omega \sim 1M\Omega$: ±200ppm/°C, >1MΩ, ~ -400; +150	ERJ-2GEJ
1/10	0805	150V	200V	2.00	1.25	0.6	0.4	0.4	$10\Omega \sim 1M\Omega$: ±200ppm/°C, >1MΩ, ~ -400; +150	ERJ-6GEY
1/8	1206	200V	400V	3.20	1.60	0.6	0.5	0.5	10Ω ~ 1MΩ: ±200ppm/°C, >1MΩ, ~ -400; +150	ERJ-8GEY
1/8	1206	200V	400V	3.20	1.60	0.6	0.5	0.3	1052 ~ 11VIS2: ±200pp1117 C, >11VIS2, ~ -400 ; +150	ERJ-8GCY
1/4	1210	200V	400V	3.20	2.50	0.60	0.50	0.50	10Ω ~ 1MΩ: ±200ppm/°C	ERJ-14Y
1/2	2010	200V	400V	5.00	2.50	0.60	0.60	0.60	10Ω ~ 1MΩ: ±200ppm/°C	ERJ-12ZY
1	2512	250V	500V	6.40	3 20	1 10	0.65	1 30	10O ~ 1MO: +200nnm / °C	FR I-1WY

	Value	Digi-Key						Pricing					Panasonic
Description	Range	Part No.	10	50	200	1M	3M	5M	9M	10M	24M	50M	Part No.
1/16 W, 0603, 5% Chip Resistors; Tape & Reel (5000/ pkg.)	(10-2.0MΩ)	P + Value + "GTR-ND"†	_	_	_	_	_	7.50/M	_	6.75/M	_	5.63/M	ERJ-3GSYJxxxV
1/16 W, 0603, 5% Chip Resistors; Bulk	$(10-2.0M\Omega)$	P + Value + "GCT-ND"†	.89	2.41	5.53	14.63	_	_	_	_	_	_	ERJ-3GSYJxxx
1/16 W, 0402, 5% Chip Resistors; Tape & Reel (10000/pkg.)	(10-2.0MΩ)	P + Value + "JTR-ND"†	_	_	_	_	_	_	_	18.72/M	_	15.60/M	ERJ-2GEJxxxx
1/16 W, 0402, 5% Chip Resistors; Tape	$(10-2.0M\Omega)$	P + Value + "JCT-ND"†	1.50	4.04	9.29	24.59	_	_	_	_	_	_	ERJ-2GEJxxx
1/10 W, 0805, 5% Chip Resistors; Tape & Reel (5000/pkg.)	(10-2.0MΩ)	P + Value + "ATR-ND"†	_	_	_	_	_	7.50/M	_	6.75/M	_	5.63/M	ERJ-6GEYJxxxV
1/10 W, 0805, 5% Chip Resistors; Bulk	$(10-2.0M\Omega)$	P + Value + "ACT-ND"†	.89	2.41	5.53	14.63	_	_	_	_	_	_	ERJ-6GEYJxxx
1/8 W, 1206, 5% Chip Resistors; Tape & Reel (5000/pkg.)	(10-2.2MΩ)	P + Value + "ETR-ND"†	_	_	_	_	_	8.85/M	_	7.97/M	_	6.64/M	ERJ-8GEYJxxxV
1/8 W, 1206, 5% Chip Resistors; Tape	(10-2.2MΩ)	P + Value + "ECT-ND"†	.96	2.57	5.91	15.64	_	_	_	_	_	_	ERJ-8GEYJxxx
1/8 W, 1206, 5% Chip Resistors; Magazine Pack (200/pkg.)	(10-2.2MΩ)	P + Value + "EMG-ND"*	_	_	5.80	24.55	_	_	_	_	_	_	ERJ-8GCYJxxxM
1/4 W, 1210, 5% Chip Resistors; Tape & Reel (5000/pkg.)	(10-1.0MΩ)	P + Value + "VTR-ND"	_	_	_	_	_	39.13/M	_	31.30/M	_	23.48/M	ERJ-14YJxxxU
1/4 W, 1210, 5% Chip Resistors; Tape	$(10-1.0M\Omega)$	P + Value + "VCT-ND"	2.70	7.27	16.70	58.95	_	_	_	_	_	_	ERJ-14YJxxx
1/2 W, 2010, 5% Chip Resistors; Tape & Reel (5000/pkg.)	(10-1.0MΩ)	P + Value + "WTR-ND"			_	_	_	61.53/M	_	49.22/M	_	36.92/M	ERJ-12ZYJxxxU
1/2 W, 2010, 5% Chip Resistors; Tape	$(10-1.0M\Omega)$	P + Value + "WCT-ND"	3.93	10.59	24.32	85.83	_	_	_	_	_	_	ERJ-12ZYJxxx
1 W, 2512, 5% Chip Resistors; Tape & Reel (3000/pkg.)	(10-1.0MΩ)	P + Value + "XTR-ND"				_	119.50/M	_	95.60/M	_	80.67/M	_	ERJ-1WYJxxxU
1 W, 2512, 5% Chip Resistors; Tape	(10-1.0MΩ)	P + Value + "XCT-ND"	8.77	23.59	54.19	143.44	_	_	_	_	_	_	ERJ-1WYJxxx

† 0.0 (zerohm) value also available.

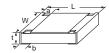
*Magazine pack for Type 1206 not for new design

PANASONIC® ERA 0603/0805 .1% METAL FILM CHIP RESISTORS Surface Mount — Available In 1/16 and 1/10 Watt

					See below		esistor Value						
560	820	1.2K	1.8K	2.7K	3.9K	5.6K	8.2K	12K	18K	27K	39K	56K	82K
620	910	1.3K	2.0K	3.0K	4.3K	6.2K	9.1K	13K	20K	30K	43K	62K	91K
680	1.0K	1.5K	2.2K	3.3K	4.7K	6.8K	10K	15K	22K	33K	47K	68K	100K
750	1.1K	1.6K	2.4K	3.6K	5.1K	7.5K	11K	16K	24K	36K	51K	75K	

Features:

- High reliablity
- Low TCR and current noise
- Excellent non-linearity



Type (Power		Max.	Max. Overload		Dim	ensions (ı	mm)			Panasonic
Rating)	Туре	RCWV	Voltage	L	W	t	а	b	Temperature Coefficient	Part No.
1/16 Watt	0603	75V	150V	1.60	0.80	0.45	0.30	0.30	±25ppm/°C	ERA-3YE
1/10 Watt	0805	100V	200V	2.00	1.25	0.50	0.40	0.40	±25ppm/°C	ERA-6YE

	Value	Digi-Key					Pric	ing				Panasonic
Description	Range	Part No.	10	50	200	1M	5M	10M	25M	50M	100M	Part No.
1/16 W, 0603, .1% Chip Resistors; Tape & Reel (5000/pkg.)	560 - 33K	P + Value + "YTR-ND"	_	_	_	_	184.94/M	147.96/M	124.84/M	115.59/M	110.97/M	ERA-3YEBxxxV
1/16 W, 0603, .1% Chip Resistors; Tape (200/pkg.)	560 - 33K	P + Value + "YCT-ND"	9.16	28.94	72.35	217.06	_	_	_	_	_	ERA-3YEBxxx
1/10 W, 0805, .1% Chip Resistors; Tape & Reel (5000/pkg.)	560 - 100K	P + Value + "ZTR-ND"	_	_	_	_	184.94/M	147.96/M	124.84/M	115.59/M	110.97/M	ERA-6YEBxxxV
1/10 W, 0805, .1% Chip Resistors; Tape (200/pkg.)	560 - 100K	P + Value + "ZCT-ND"	9.16	28.94	72.35	217.06	_	_	_	_	_	ERA-6YEBxxx

YAGEO 5% CARBON FILM RESISTORS

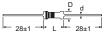
Available In 1/8, 1/4 and 1/2 Watt

								d Resisto								
						See belo	ow for compl	lete part nun	bers when o	ordering.						
1.0	2.7	7 6.8	18	47	120	330	820	2.2K	5.6K	15K	39K	100K	270K	680K	1.8M	4.7M
1.1	3.0	0 7.5	20	51	130	360	910	2.4K	6.2K	16K	43K	110K	300K	750K	2.0M	5.1M
1.2	3.3	3 8.2	22	56	150	390	1.0K	2.7K	6.8K	18K	47K	120K	330K	820K	2.2M	5.6M
1.3	3.6	6 9.1	24	62	160	430	1.1K	3.0K	7.5K	20K	51K	130K	360K	910K	2.4M	6.2M
1.5	3.9	9 10	27	68	180	470	1.2K	3.3K	8.2K	22K	56K	150K	390K	1.0M	2.7M	6.8M
1.6	4.3	3 11	30	75	200	510	1.3K	3.6K	9.1K	24K	62K	160K	430K	1.1M	3.0M	7.5M
1.8	4.	7 12	33	82	220	560	1.5K	3.9K	10K	27K	68K	180K	470K	1.2M	3.3M	8.2M
2.0	5.	1 13	36	91	240	620	1.6K	4.3K	11K	30K	75K	200K	510K	1.3M	3.6M	9.1M
2.2	5.0	6 15	39	100	270	680	1.8K	4.7K	12K	33K	82K	220K	560K	1.5M	3.9M	10M
2.4	6.2	2 16	43	110	300	750	2.0K	5.1K	13K	36K	91K	240K	620K	1.6M	4.3M	

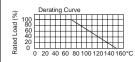
Characteristics

Terminal Strength	Soldering	Temperature Change	Vibration	Moisture Resistance	Load Life	Dielectric Strength	Insulation Resistance	Short-Time Overload	Voltage Coefficient	Solvents Resistance
0.6mm load 10N (1kg): 10s Δ Rmax. 0.25% + 0.05Ω	2s 230°C 0.5% activated flux Δ Rmax. 0.25% + 0.25Ω	½ hr. @ -55°C, ½ hr. @ +155°C 5 cycles; Δ Rmax. 0.25% + 0.25Ω	1.5mm displacement @ 10 to 500 Hz; Δ Rmax. 0.25% + 0.05Ω	Δ Rmax. ±3%	Δ Rmax. ±2.5%	1000 hrs.: 70°C: Pnom or Vmax. Δ Rmax. 1% + 0.05Ω	500Vrms appl. for 1 min.: No breakdown	Room temp., dissipation $6.25 \times$ Pnom. 10 cycles, 5 sec. on, 45 sec. off; Δ Rmax. $0.25\% + 0.05\Omega$	- 11	No damage





- Industry's lowest cost!
 Available in 1/8, 1/4, 1/2 watt; packaged in bulk or tape/reel (except 1/2 watt)
 Exceeds carbon comp MIL-R-11 performance
 Standard tolerance: ±5%
 Exceptional long-term stability



Type (Power	D	imensions (m	m)	Max. Working	Max. Overload	Rated Ambient	Temperature	Resistance	Resistance
Rating)	L	D	d	Voltage	Voltage	Temperature	Cycling	Range	Tolerance
1/8 Watt	3.8 ± 0.2	1.8 ± 0.2	0.45	200V	400V	70°C	-55°C to +155°C	1.0 Ω to 10 M Ω	±5%
1/4 Watt	6.5 ± 0.5	2.3 ± 0.3	0.60	250V	500V	70°C	-55°C to +155°C	1.0Ω to $10M\Omega$	±5%
1/2 Watt	9.5 ± 0.5	3.2 ± 0.5	0.60	350V	700V	70°C	-55°C to +155°C	1.0Ω to $10M\Omega$	±5%

	Digi-Key			Pr	icing		
Description	Part No.	5	200	1M	5M	10M	50M
1/8 Watt, 5% Carbon Film Resistors	Value + "E"+ "BK-ND"						
Bulk Package	(i.e. 1.0EBK-ND)	.28	4.70	13.63	12.22/M	11.28/M	10.34/M
1/8 Watt, 5% Carbon Film Resistors — Tape and Reel							
(5,000 pcs./reel —	Value + "E" + "TR-ND"						
Order in multiples of 5,000)	(i.e. 1.0ETR-ND)	_	_	_	14.95/M	13.80/M	11.04/M
1/4 Watt, 5% Carbon Film Resistors	Value + "Q"+ "BK-ND"						
Bulk Package	(i.e. 1.0QBK-ND)	.28	3.89	8.70	8.27/M	7.69/M	6.24/M
1/4 Watt, 5% Carbon Film Resistors — Tape and Reel							
(5,000 pcs./reel —	Value + "Q" + "TR-ND"						
Order in multiples of 5,000)	(i.e. 1.0QTR-ND)	_	_	_	8.94/M	8.25/M	6.60/M
1/2 Watt, 5% Carbon Film Resistors	Value + "H"+ "-ND"						
Bulk Package	(i.e. 1.0H-ND)	.27	3.96	12.87	11.88/M	10.89/M	9.90/M

[&]quot;E" = Eighth Watt; "Q" = Quarter Watt; "H" = Half Watt. Please be sure to specify. Half watt available in bulk package only.

1/8 Watt Resistor Assortment



200 each of all standard values 5% 1/8 watt carbon film resistors in the series 1.0 - 4.7 megohms (32,200 total pieces).

RSE200-ND\$399.00

Set of 5 each of 73 standard 5% 1/8 watt carbon film resistors in the series 1.0, 1.2, 1.5, 1.8, 2.2, etc., through 1.0 megohm (365 total pcs.).

RS112-ND.....\$16.96

Set of 5 each of the 72 standard 5% 1/8 watt carbon film resistors in the series 1.1, 1.3, 1.6, 2.0, 2.4, etc., through 910 kilohm (360 total pcs.). RS212-ND.....\$16.99

200 each of all standard values 5% 1/4 watt carbon film resistors in the series 1.0 - 4.7 megohms (32,200 total pieces).

1/4 Watt Resistor Assortment



Set of 5 each of 73 standard 5% 1/4 watt carbon film resistors in the series 1.0, 1.2, 1.5, 1.8, 2.2, etc., through 1.0 megohm (365 total pcs.). RS125-ND.....\$14.95

Set of 5 each of the 72 standard 5% 1/4 watt carbon film resistors in the series 1.1, 1.3, 1.6, 2.0, 2.4, etc., through 910 kilohm (360 total pcs.). RSQ200-ND\$219.00 RS225-ND......\$14.95

1/2 Watt Resistor Assortment



200 each of all standard values 5% 1/2 watt carbon film resistors in the series 1.0 - 4.7 megohms (32,200 total pieces).

RSH200-ND\$297.00

Set of 5 each of 73 standard 5% 1/2 watt carbon film resistors in the series 1.0, 1.2, 1.5, 1.8, 2.2, etc., through 1.0 megohm (365 total pcs.).

RS150-ND\$16.95

Set of 5 each of the 72 standard 5% 1/2 watt carbon film resistors in the series 1.1, 1.3, 1.6, 2.0, 2.4, etc., through 910 kilohm (360 total pcs.).

RS250-ND\$16.95

1206/0805/0603/0402 1% PRECISION THICK FILM CHIP RESISTORS

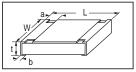
Surface Mount Available In 1/8, 1/10 & 1/16 Watt

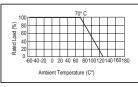
Panasonic.

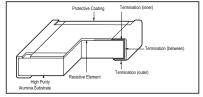
1206 0805 0603 0402 Available in 1/8 1/10 & 1/16

Size	Power Rating at 70°	Maximum RCWV*	Maximum Overload Voltage			
0402	1/16 W	50 V	100 V			
0603	1/16 W - (1/10 W)**	50 V	100 V			
0805	1/10 W - (1/8 W)**	150V	200V			
1206	1/8 W - (1/4 W)**	200 V	400V			
Posistance to Soldering Heats + (1.09/ : 0.10) may with no						

resistance to Soldering Heat: \pm (1.0% $\overline{}$ 0.1 Ω) max. with no evidence of mechanical damage. Dip Time: 270°C \pm 5°C,10 +1 seconds. 100 PPM.







-0 **Rated Continuous Working Voltage (RCWV) shall be determined from RCWV = \(\sqrt{Power Rating x Resistance Values,}\) or max. RCWV listed above, whichever is less.

** Available for reduction of load of pulse characteristics	(RCWV x 2.5 RCWV x 2.0, R≥1.1kΩ).

		nensions(mm)		Digi-Key	10	F0	200	1 000			FORA	10084	Panasonic
L	VV	a	D	ι	Part No.	10	50	200	1,000	IVIC	TUIVI	SUIVI	TUUIVI	Part No.
3.20 3.20	1.60 1.60	0.50 0.50	0.50 0.50	0.60 0.60	P + Value + "FTR-ND" P + Value + "FCT-ND"	1.26	3.40	7.81	20.68	15.57/M —	14.02/M —	11.68/M —	7.01/M —	ERJ-8ENFxxxxV ERJ-8ENFxxxx
2.00 2.00	1.25 1.25	0.40 0.40	0.40 0.40	0.60	P + Value + "CTR-ND" P + Value + "CCT-ND"	1.22	3.27	7.51	— 19.89	14.52/M —	13.07/M —	10.89/M —	6.54/M —	ERJ-6ENFxxxxV ERJ-6ENFxxxx
1.60 1.60	.80 .80	.30 .30	.30 .30	.45 .45	P + Value + "HTR-ND" P + Value + "HCT-ND"	1.20	3.23	7.41	 19.62	10.62/M —	9.44/M —	7.08/M	6.38/M —	ERJ-3EKFxxxxV ERJ-3EKFxxxx
1.00 1.00	.50 .50	.20 .20	.25 .25	.35 .35	P + Value + "LTR-ND" P + Value + "LCT-ND"	 2.43	— 6.55	 15.04	39.80	_	27.38/M —	20.54/M —	18.49/M —	ERJ-2RKFxxxxX ERJ-2RKFxxxx
	3.20 2.00 2.00 1.60 1.60	L W 3.20 1.60 3.20 1.60 2.00 1.25 2.00 1.25 1.60 .80 1.60 .80 1.00 .50	L W a 3.20 1.60 0.50 3.20 1.60 0.50 2.00 1.25 0.40 2.00 1.25 0.40 1.60 80 30 1.60 80 30 1.00 .50 .20	3.20 1.60 0.50 0.50 3.20 1.60 0.50 0.50 2.00 1.25 0.40 0.40 2.00 1.25 0.40 0.40 1.60 80 .30 .30 1.60 .80 .30 .30	L W a b t 3.20 1.60 0.50 0.50 0.60 3.20 1.60 0.50 0.50 0.60 2.00 1.25 0.40 0.40 0.60 2.00 1.25 0.40 0.40 0.60 1.60 .80 .30 .30 .45 1.60 .80 .30 .30 .45 1.00 .50 .20 .25 .35	L W a b t Part No. 3.20 1.60 0.50 0.50 0.60 P + Value + "FTR-ND" 3.20 1.60 0.50 0.50 0.60 P + Value + "FCT-ND" 2.00 1.25 0.40 0.40 0.60 P + Value + "CTR-ND" 2.00 1.25 0.40 0.40 0.60 P + Value + "CTR-ND" 1.60 .80 .30 .30 .45 P + Value + "HTR-ND" 1.00 .50 .20 .25 .35 P + Value + "LTR-ND"	L W a b t Part No. 10	L W a b t Part No. 10 50 3.20 1.60 0.50 0.50 0.60 P+Value + "FTR-ND" — 3.20 1.60 0.50 0.50 0.60 P+Value + "FCT-ND" 1.26 3.40 2.00 1.25 0.40 0.40 0.60 P+Value + "CT-ND" — — 2.00 1.25 0.40 0.40 0.60 P+Value + "CT-ND" 1.22 3.27 1.60 .80 .30 .30 .45 P+Value + "HTR-ND" — — 1.60 .80 .30 .30 .45 P+Value + "HTR-ND" 1.20 3.23 1.00 .50 .20 .25 .35 P+Value + "LTR-ND" —	L W a b t Part No. 10 50 200 3.20 1.60 0.50 0.50 0.60 P + Value + "FTR-ND" —<	L W a b t Part No. 10 50 200 1,000 3.20 1.60 0.50 0.50 0.60 P + Value + "FTR-ND" — <t< td=""><td>L W a b t Part No. 10 50 200 1,000 5M 3.20 1.60 0.50 0.50 0.60 P + Value + "FTR-ND" — — — — 15.57/M 3.20 1.60 0.50 0.50 0.60 P + Value + "FCT-ND" 1.26 3.40 7.81 20.68 — 2.00 1.25 0.40 0.40 0.60 P + Value + "CTR-ND" — — — — 14.52/M 2.00 1.25 0.40 0.40 0.60 P + Value + "CTR-ND" — — — — 14.52/M 1.60 .80 .30 .30 .45 P + Value + "HTR-ND" — — — — 10.62/M 1.00 .50 .20 .25 .35 P + Value + "HTR-ND" — — — — — —</td><td>L W a b t Part No. 10 50 200 1,000 5M 10M 3.20 1.60 0.50 0.50 0.60 P+Value + FTR-ND* — — — — 15.57/M 14.02/M 3.20 1.60 0.50 0.50 0.60 P+Value + FCT-ND* 1.26 3.40 7.81 20.68 — — 2.00 1.25 0.40 0.40 0.60 P+Value + TCT-ND* — — — — 14.52/M 13.07/M 2.00 1.25 0.40 0.40 0.60 P+Value + TCT-ND* — — — — 14.52/M 13.07/M 1.60 .80 .30 .30 .45 P+Value + TTR-ND* — — — — 10.62/M 9.44/M 1.60 .80 .30 .30 .45 P+Value + TTR-ND* — — — — — — 10.62/M 9.44/M</td><td>L W a b t Part No. 10 50 200 1,000 5M 10M 50M 3.20 1.60 0.50 0.50 0.60 P + Value + "FTR-ND" — — — 15.57/M 14.02/M 11.68/M 3.20 1.60 0.50 0.50 0.50 0.60 P + Value + "CTR-ND" 1.26 3.40 7.81 20.68 —</td><td>L W a b t Part No. 10 50 200 1,000 5M 10M 50M 100M 3.20 1.60 0.50 0.50 0.60 P+ Value + "FTR-ND" — — — — 15.57/M 14.02/M 11.68/M 7.01/M 2.00 1.25 0.40 0.40 0.60 P+ Value + "CTR-ND" — — — — 14.52/M 13.07/M 10.89/M 6.54/M 2.00 1.25 0.40 0.40 0.60 P+ Value + "CTR-ND" — — — 14.52/M 13.07/M 10.89/M 6.54/M 1.60 .80 .30 .30 .45 P+ Value + "HTR-ND" — — — — 10.62/M 9.44/M 7.08/M 6.38/M 1.60 .80 .30 .30 .45 P+ Value + "HTR-ND" — — — — — — — — — — — — —</td></t<>	L W a b t Part No. 10 50 200 1,000 5M 3.20 1.60 0.50 0.50 0.60 P + Value + "FTR-ND" — — — — 15.57/M 3.20 1.60 0.50 0.50 0.60 P + Value + "FCT-ND" 1.26 3.40 7.81 20.68 — 2.00 1.25 0.40 0.40 0.60 P + Value + "CTR-ND" — — — — 14.52/M 2.00 1.25 0.40 0.40 0.60 P + Value + "CTR-ND" — — — — 14.52/M 1.60 .80 .30 .30 .45 P + Value + "HTR-ND" — — — — 10.62/M 1.00 .50 .20 .25 .35 P + Value + "HTR-ND" — — — — — —	L W a b t Part No. 10 50 200 1,000 5M 10M 3.20 1.60 0.50 0.50 0.60 P+Value + FTR-ND* — — — — 15.57/M 14.02/M 3.20 1.60 0.50 0.50 0.60 P+Value + FCT-ND* 1.26 3.40 7.81 20.68 — — 2.00 1.25 0.40 0.40 0.60 P+Value + TCT-ND* — — — — 14.52/M 13.07/M 2.00 1.25 0.40 0.40 0.60 P+Value + TCT-ND* — — — — 14.52/M 13.07/M 1.60 .80 .30 .30 .45 P+Value + TTR-ND* — — — — 10.62/M 9.44/M 1.60 .80 .30 .30 .45 P+Value + TTR-ND* — — — — — — 10.62/M 9.44/M	L W a b t Part No. 10 50 200 1,000 5M 10M 50M 3.20 1.60 0.50 0.50 0.60 P + Value + "FTR-ND" — — — 15.57/M 14.02/M 11.68/M 3.20 1.60 0.50 0.50 0.50 0.60 P + Value + "CTR-ND" 1.26 3.40 7.81 20.68 —	L W a b t Part No. 10 50 200 1,000 5M 10M 50M 100M 3.20 1.60 0.50 0.50 0.60 P+ Value + "FTR-ND" — — — — 15.57/M 14.02/M 11.68/M 7.01/M 2.00 1.25 0.40 0.40 0.60 P+ Value + "CTR-ND" — — — — 14.52/M 13.07/M 10.89/M 6.54/M 2.00 1.25 0.40 0.40 0.60 P+ Value + "CTR-ND" — — — 14.52/M 13.07/M 10.89/M 6.54/M 1.60 .80 .30 .30 .45 P+ Value + "HTR-ND" — — — — 10.62/M 9.44/M 7.08/M 6.38/M 1.60 .80 .30 .30 .45 P+ Value + "HTR-ND" — — — — — — — — — — — — —

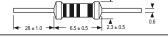
Sta	andard	l Resist	tor Valu	es														
10 10 10 11 11 11 11 11 11 11 11 11 11 1	0.0 0.2 0.7 1.0 1.3 1.5 1.8 2.1 2.4 2.7 3.3 3.3 4.0 4.3 4.7 5.0 6.5 6.5 6.9	19.1 19.6 20.0 20.5 21.0 21.5 22.1 22.1 22.2 23.7 24.9 25.5 26.1 26.7 27.4 28.0 28.7 29.4 30.1 30.9 31.6	36.5 37.4 38.3 39.2 40.2 41.2 42.2 43.2 44.2 45.3 46.4 47.5 49.9 51.1 52.3 53.6 54.9 56.2 57.6 60.4 61.9	69.8 71.5 73.2 75.0 76.8 78.7 80.6 82.5 84.5 86.6 88.7 90.9 93.1 195.3 97.6 100 102 105 1107 1110 1113 1115	133 137 140 143 147 150 158 162 165 169 178 182 187 191 196 200 205 210 210 221 221 222 222	255 261 267 274 280 287 294 301 309 316 324 332 340 357 365 374 383 392 402 412 422 422	487 499 5111 523 536 549 562 576 690 604 619 665 681 688 715 732 750 768 787 806 825 824	931 953 976 1.02K 1.02K 1.05K 1.07K 1.10K 1.13K 1.15K 1.12K 1.21K 1.21K 1.27K 1.30K 1.37K 1.37K 1.40K 1.47K 1.54K	1.78K 1.87K 1.87K 1.91K 2.05K 2.15K 2.15K 2.21K 2.22K 2.32K 2.32K 2.32K 2.43K 2.43K 2.43K 2.67K 2.67K 2.74K 2.80K 2.80K 2.80K 2.80K 2.80K 2.80K 2.80K 2.80K 2.90K	3.40K 3.48K 3.57K 3.57K 3.65K 3.74K 3.83K 3.92K 4.02K 4.12K 4.22K 4.22K 4.32K 4.32K 4.53K 4.64K 4.75K 4.97K 5.11K 5.23K 5.36K 5.49K 5.62K	6.49K 6.65K 6.81K 6.98K 7.15K 7.32K 7.50K 7.68K 7.68K 8.25K 8.06K 8.25K 8.45K 8.66K 8.25K 9.09K 9.31K 9.31K 9.53K 9.76K	12.4K 12.7K 13.0K 13.3K 13.7K 14.0K 14.3K 14.7K 15.0K 15.4K 15.8K 16.2K 16.9K 17.4K 18.2K 18.2K 19.1K	23.7K 24.3K 24.9K 25.5K 26.1K 26.7K 27.4K 28.0K 28.7K 29.4K 30.1K 30.9K 31.6K 33.2K 34.0K 34.0K 34.8K 35.7K 36.5K 37.4K 38.3K 38.3K 38.3K 38.3K 38.3K 38.3K 38.3K 38.4K	45.3K 46.4K 47.5K 48.7K 49.9K 51.1K 52.3K 53.6K 54.9K 56.2K 57.6K 60.4K 61.9K 66.5K 68.5K 68.5K 68.5K 73.2K 73.2K 73.2K 73.2K 73.8K	84.5K 86.6K 88.7K 90.9K 93.1K 95.3K 97.6K 100K 105K 107K 110K 115K 115K 115K 121K 124K 127K 130K 137K 137K 140K 143K 143K	158K 162K 165K 165K 174K 174K 178K 182K 187K 191K 205K 215K 215K 215K 221K 225K 232K 232K 232K 249K 245K 255K 249K 255K 261K 261K 274K	294K 301K 309K 316K 324K 324K 340K 348K 357K 365K 374K 402K 412K 422K 432K 442K 453K 464K 475K 497K 499K	549K 562Z 576K 590K 604K 619K 634K 649K 681K 681K 681K 715K 732Z 750K 788K 806K 866K 887K 806K 845K 845K 845K 845K 845K 845K 845K 845
11 18	7.4 7.8 8.2 8.7	33.2 34.0 34.8 35.7	63.4 64.9 66.5 68.1	121 124 127 130	232 237 243 249	442 453 464 475	845 866 887 909	1.62K 1.65K 1.69K 1.74K	3.09K 3.16K 3.24K 3.32K	5.90K 6.04K 6.19K 6.34K	11.3K 11.5K 11.8K 12.1K	21.5K 22.1K 22.6K 23.2K	41.2K 42.2K 43.2K 44.2K	78.7K 80.6K 82.5K	147K 150K 154K	274K 280K 287K	511K 523K 536K	953K 976K 1.00M

1% METAL FILM FIXED RESISTORS 1/4 Watt

Characteristics

YAGEO

MF Series

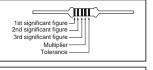


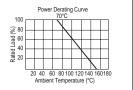
The MF series Metal Film Resistors are manufactured using vacuum sputtering system to deposit multiple layers of mixed metals and passivative materials onto a carefully treated high grade ceramic substrate, the resistors are coated with layers of light-blue lacquer.

General Specifications: Power Rating: 1/4 Watt. Max. Working Voltage: 250V. Max. Overload Voltage: 500V. Rated Ambient Temperature: 70°C. Temperature Cycling: -65°C to +150°C. Resistance Range: 10,00 to 1,00M. Resistance Tolerance: ±1%. Electrical Specifications: (See "General Specifications" below). All measurements are taken at +25°C at 14K12 and 65% relative humidity, unless stated otherwise. Type: MF-25 Style: RN-55 Power Rating: 1/4 Watt. Resistance Tolerance: ±1% Temperature Coefficient: ±100PPM/°C

Temperature Cycling, -65° to +150°C	(%) ± 0.25
Low Temperature Operation, -65°C	(%) ± 0.25
Short Time Overload	(%) ± 0.20
Terminal Strength, 5 lb. pull	(%) ± 0.20
Resistance to Soldering Heat, +350°C	(%) ± 0.10
Moisture Resistance, Mil Std 202	(%) ± 0.50
Life 1000 hrs. (Rated Power)	(%) ± 0.50
Shock, 50G, 11ms	(%) ± 0.20
Vibration-High Frequency, 10-2000Hz	(%) ± 0.20
Insulation Resistance	(%)=10 ¹⁰ Ω
Egiluro-Pato	(%) 10-8/h

Vibration-Hig	h Frequenc	y, 10-2000F	łz	(%)	. ±0.20
Insulation Re	sistance			(%)	$=10^{10}\Omega$
Failure-Rate				(%)	10- ⁸ /h
Pricing 5M	10M	50M	100M	500M	1,000M
18.24/M	15.68/M	12.54/M			_





Description	Digi-Key Part No.	5	200	1M	Pricing 5M	10M	50M	100M	500M	1,000M
1/4 Watt, 1% Metal Film Resistors Bulk Package	Value + "X" + "BK-ND" (i.e. 10.0XBK-ND)	.54	8.27	21.38	18.24/M	15.68/M	12.54/M	_	_	_
1/4 Watt, 1% Metal Film Resistors Order in multiples of 5,000 (5,000 pcs./reel)	Value + "X" + "TR-ND" (i.e. 10.0XTR-ND)	_	_	_	20.63/M	17.60/M	14.30/M	12.10/M	9.90/M	8.80/M

See above for values available

YAGEO

1% Metal Film Resistor Assortments



Over Parts Purchased Separately



	RS1X-ND\$29.95
9	5 Each of Values 100 $\!\Omega$ to 976 $\!\Omega$ RS2X-ND\$29.95
	5 Each of Values 1.00K Ω to 9.76K Ω RS3X-ND\$29.95
	5 Each of Values 10.0K Ω to 97.6K Ω RS4X-ND\$29.95
	5 Each of Values 100K Ω to 1.00M Ω RS5X-ND\$29.95

5 Each of Values 10Ω to 97.6Ω

Panasonic. 1% Chip Resistor Assortments

NEW! 0402 176 Chip Resistor Assortinents
RSM1L-ND* 50 ea. of Values 10.0Ω to 97.6Ω \$349.00
RSM2L-ND* 50 ea. of Values 100Ω to 976Ω
RSM3L-ND* 50 ea. of Values $1.00K\Omega$ to $9.76K\Omega$ \$349.00
RSM4L-ND* 50 ea. of Values 10.0KΩ- 97.6KΩ\$349.00
RSM5L-ND* 50 ea. of Values $100K\Omega$ - $1.00M\Omega$ \$349.00

0603 1% Chip Resistor Assortments	
RSM1H-ND 50 ea. of Values 10.0Ω to 97.6Ω	\$199.00
RSM2H-ND 50 ea. of Values 100Ω to 976Ω	\$199.00
RSM3H-ND 50 ea. of Values $1.00K\Omega$ to $9.76K\Omega$	\$199.00
RSM4H-ND 50 ea. of Values 10.0K Ω - 97.6K Ω	\$199.00
RSM5H-ND 50 ea. of Values $100 \text{K}\Omega$ - $1.00 \text{M}\Omega$	\$199.00
* Indicates New Kits	

1206 1% Chip Resistor Assortinents
RSM1FA-ND* 50 ea. of Values 10 Ω to 97.6 Ω \$129.95 RSM1F-ND 200 ea. of Values 10 Ω to 97.6 Ω \$495.00
RSM2FA-ND* 50 ea. of Values 100 Ω to 976 Ω \$129.95 RSM2F-ND 200 ea. of Values 100 Ω to 976 Ω \$495.00
RSM3FA-ND* 50 ea. of Values 1.00K Ω to 9.76K Ω \$129.95 RSM3F-ND 200 ea. of Values 1.00K Ω to 9.76K Ω \$495.00
RSM4FA-ND* 50 ea. of Values 10.0K Ω to 97.6K Ω \$129.95 RSM4F-ND 200 ea. of Values 10.0K Ω to 97.6K Ω \$495.00
RSM5FA-ND* 50 ea. of Values 100K Ω to 1.00M Ω \$129.95 RSM5F-ND 200 ea. of Values 100K Ω to 1.00M Ω \$495.00

0805 1% Chip Resistor Assortments

RSM1CA-ND*50 ea. of Values 10Ω to 97.6Ω
RSM2CA-ND* 50 ea. of Values 100 Ω to 976 Ω \$129.95 RSM2C-ND 200 ea. of Values 100 Ω to 976 Ω \$495.00
RSM3CA-ND* 50 ea. of Values 1.00K Ω to 9.76K Ω \$129.95 RSM3C-ND 200 ea. of Values 1.00K Ω to 9.76K Ω \$495.00
RSM4CA-ND* 50 ea. of Values 10.0K Ω to 97.6K Ω \$129.95 RSM4C-ND 200 ea. of Values 10.0K Ω to 97.6K Ω \$495.00
RSM5CA-ND* 50 ea. of Values 100KΩ to 1.00MΩ\$129.95 RSM5C-ND 200 ea. of Values 100KΩ to 1.00MΩ\$495.00

YAGEO

5% METAL OXIDE FILM RESISTORS Characteristics

Current Noise

560 620 680

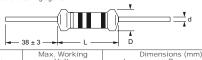
PANASONIC®



Туре

2W

These Metal Oxide Resistors offer lower cost alternatives to Carbon Composition Resistors and General Purpose Metal Films. They can replace many low power General Purpose wirewound applications. These Metal Oxides meet overload tests in accordance with UL specification #1412 without producing a fire hazard. They withstand solvents in accordance with article Mil-Std-202E without producing mechanical or electrical damage. Features: High surge/overload capability. Non-inductive design. Coating and marking resist Trichlorethelyne, Freon, and other cleaning agents.



е	Volt.	L	D `	d
	350 350	13.0 17.0	4.5 5.5	0.8 0.8

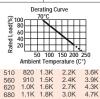
1 & 2 Watt Resistor Assortments

255 resistors per assortment, 5 each of the values in the ranges listed:

		(0.47 Ω -	56 Ω	62	Ω - 7.5	Κ Ω		8.2K Ω	- 1.0M			
	Watt Watt		RS101- RS102-			RS201-ND RS202-ND			RS30 RS30		\$26.95 \$29.95		
Stan	dard Re	esistor	Value	s — Se	e belov	for c	omplet	e part i	numbe	rs whe	n orde	ring.	
0.47	0.82	1.5	2.7	4.3	6.8	11	18	30	47	75	120	200	330
0.51	0.91	1.6	3.0	4.7	7.5	12	20	33	51	82	130	220	360
0.56	1.0	1.8	3.3	5.1	8.2	13	22	36	56	91	150	240	390
0.62	1.1	2.0	3.6	5.6	9.1	15	24	39	62	100	160	270	430

Stand	lard Re	sistor	Values	— See	below	tor	complete	part	numbers	when	orderir	ng.
0.47	0.82	1.5	2.7	4.3	6.8	11	18	30	47	75	120	200
0.51	0.91	1.6	3.0	4.7	7.5	12	20	33	51	82	130	220
0.56	1.0	1.8	3.3	5.1	8.2	13	22	36	56	91	150	240
0.62	1.1	2.0	3.6	5.6	9.1	15	24	39	62	100	160	270
0.68	1.2	2.2	3.9	6.2	10	16	27	43	68	110	180	300
0.75	1.3	2.4										

± 100 PPM Typ. Temperature . Coefficient ± 200 Max Insulation Resist 10,000 MΩ Min Load Life ¶1% Tvp. ± 3% Max (1,000 hours) Short-time Overload ±0.5% Max Temp. Cycling ±0.5% Max Moisture Resistance ± 1.0% Max Shock & Vibration ±0.2% Max Effect of Soldering +0.5% Max Voltage Coefficient .001%/V



2.4K 2.7K 3.0K 1.8K

4.1 u.V/V

Now Available In Tape and Reel Matsushita fixed metal oxide film resistors feature small sized dimensions and have higher power rating at the same size as the conventional type.

the conventional type.

Features: Flame retardancy of
the exclusively formulated
inorganic insulative material exhibits an equivalent performance
requirements of UL-94 (VE-O) and when operated at a potential less than 16 times RCWV, Matsushita metal (oxide) film resistors never flame nor arc. The coating and markings resist normal washing of solvents, such as Freon (TE, TMC, TF), trichloroethane.

Characteristics:	
Temperature Coefficient	R. Wattage of 1, 2, 3 ± 200ppm/°C
Voltage Coefficient	25ppm/V Max
Insulation Resist.	10,000 MΩ Min
Temp. Cycling	\pm (1% + 0.05Ω) Max
Short-time Overload	$\pm (2\% + 0.05\Omega)$ Max
Humidity (Steady State)	\pm (2% + 0.05Ω) Max
Load Life in Humidity	$\pm (5\% + 0.05\Omega)$ Max
Load Life	\pm (5% + 0.05Ω) Max
Resistance to Soldering Heat	\pm (1% + 0.05Ω) Max
Vibration Low Freq	\pm (1% + 0.05Ω) Max
Thermal Shock	\pm (2% + 0.05Ω) Max
Noise	1.0µV/V Max

Dimensions (mm)

- 1	1)	/pe		VOIT.				U		a
		W		350 350		9 12	.0	2.8 4.0		0.65 0.80
	3	W		350		15	.0	5.5		0.80
5.6K	9.1K	15K	24K	39K	62K	100K	160K	270K	430K	680K
6.2K	10K	16K	27K	43K	68K	110K	180K	300K	470K	750K
6.8K	11K	18K	30K	47K	75K	120K	200K	330K	510K	820K
7.5K	12K	20K	33K	51K	82K	130K	220K	360K	560K	910K
O OIZ	4017	001/	001/	E01/	0417	4501/	0.4017	0001/	00017	4 014

Max. Working

0.10 1.0 2.1							
Description	Digi-Key Part Number	1	10	Prio 100	ing 1M	5M	10M
	Υ.	AGEO					
1 Watt, 5% Metal Oxide Film Resistors Bulk Package (0.47-0.91Ω)	Value + "W-1-ND" (i.e. 0.47W-1-ND)	.27	1.96	12.60	77.00	68.60/M	61.60/M
1 Watt, 5% Metal Oxide Film Resistors Bulk Package (1.0-1.0MΩ)	Value + "W-1-ND" (i.e. 1.0W-1-ND)	.19	1.40	9.00	55.00	49.00/M	44.00/M
2 Watt, 5% Metal Oxide Film Resistors Bulk Package (0.47-0.91Ω)	Value + "W-2-ND" (i.e. 0.47W-2-ND)	.29	2.10	13.50	82.50	73.50/M	66.00/M
2 Watt, 5% Metal Oxide Film Resistors Bulk Package (1.0-1.0MΩ)	Value + "W-2-ND (i.e. 1.0W-2-ND)	.23	1.68	10.80	66.00	58.80/M	52.80/M

Description	Digi-Key Part Number	1	5	100	Pricing 1M	5M	10M
	PANA	SONIC					
1 Watt, 5% Metal Oxide Film Resistors Bulk Package (0.47-68ΚΩ)	"P" + Value + "W-1BK-ND" (i.e. P20W-1BK-ND)	.23	.84	9.49	65.47	58.30/M	52.38/M
1 Watt, 5% Metal Oxide Film Resistors Tape and Reel (0.47-68ΚΩ)	"P" + Value + "W-1TR-ND" (i.e. P1.0KW-1TR-ND)	_	_	_	_	61.20/M	54.99/M
2 Watt, 5% Metal Oxide Film Resistors Bulk Package (0.47-100ΚΩ)	"P" + Value + "W-2BK-ND" (i.e. P20W-2BK-ND)	.27	1.00	12.86	78.78	70.11/M	62.88/M
2 Watt, 5% Metal Oxide Film Resistors Tape and Reel (0.47-100ΚΩ)	"P" + Value + "W-2TR-ND" (i.e. P1.0KW-2TR-ND)		266.9	4/3M	475.36/6M	854.20/12M	1661.05/27M
3 Watt, 5% Metal Oxide Film Resistors Bulk Package (0.47-100ΚΩ)	"P" + Value + "W-3BK-ND" (i.e. P20W-3BK-ND)	.49	2.30	29.58	177.50	170.93/M	164.35/M
3 Watt, 5% Metal Oxide Film Resistors Tape and Reel (0.47-100ΚΩ)	"P" + Value + "W-3TR-ND" (i.e. P1.0KW-3TR-ND)		297.27	1,500	1058.75/6M	1664.72/10,500	3494.06/25,500

YAGEO

5 & 10 WATT WIREWOUND RECTANGULAR RESISTORS 5%

Axial Lead Type

Operating Temperature Range: -55° to +250°C

Exceptionally small and sturdy; mechanically safe. Excellent electrical characteristics.
 The materials used and the construction techniques ensure excellent flame resistance, arc resistance and moisture resistance as well as self-extinguishing capabilities. They will withstand the most rigorous loading test.
 Applicable specifications: EIA RS-344 and EIA RC649.

35 ± 3 ►	48.0(10W) ± .5	35 ± 3 ►	10±5
35 ± 3	22.0(5W) ± 5	35 ± 3	
			O 9±.5
		.8ø (5W)(10W)	
			•

5 Wat	t Stan	dard	Resis	tor Va	lues -	— See	below	for con	nplete p	art nur	nbers v	vhen or	dering.	
0.30	0.62	1.2	2.2	3.9	6.8	12	22	39	68	120	220	390	680	1.2K

0.33	0.68	1.3	2.4	4.3	7.5	13	24	43	75	130	240	430	750	1.3K
0.39	0.75	1.5	2.7	4.7	8.2	15	27	47	82	150	270	470	820	1.5K
0.43	0.82	1.6	3.0	5.1	9.1	16	30	51	91	160	300	510	910	1.6K
0.47	0.91	1.8	3.3	5.6	10	18	33	56	100	180	330	560	1.0K	1.8K
0.51	1.0	2.0	3.6	6.2	11	20	36	62	110	200	360	620	1.1K	2.0K
0.56	1.1													

0 Wa	att St	andaı	d Res	sistor	Valu	es —	See be	low for	comple	te part n	umbers	when o	rdering.	
1.0	1.8	3.3	5.6	10	18	33	56	100	180	300	470	750	1.2K	2.0K
1.1	2.0	3.6	6.2	11	20	36	62	110	200	330	510	820	1.3K	2.2K
1.2	2.2	3.9	6.8	12	22	39	68	120	220	360	560	910	1.5K	2.4K
1.3	2.4	4.3	7.5	13	24	43	75	130	240	390	620	1.0K	1.6K	2.7K
1.5	2.7	4.7	8.2	15	27	47	82	150	270	430	680	1.1K	1.8K	3.0K
1.6	3.0	5.1	0.1	16	30	51	01	160						

	Digi-Key			Pric	ing		
Description	Part Number	1	10	100	1M	5M	10M
5 Watt, 5% Metal Wirewound Rectangular	Value + "W-5-ND"						
Resistors, Bulk Package	(i.e. 0.30W-5-ND)	.41	3.41	27.28	163.68	146.63/M	129.58/M
10 Watt, 5% Wirewound Rectangular	Value + "W-10-ND"						
Resistors, Bulk Package	(i.e. 1.0W-10-ND)	.60	5.01	40.08	240.48	215.43/M	190.38/M

Characteristics						
Temperature Coefficient	±300 PPM/°C					
Insulation Resistance	100 MΩ					
Load Life (1,000 hours)	±5% + 0.05Ω					
Short-Time Overload	±2% + 0.05Ω					
Dielectric Withstanding Volt	±2% + 0.05Ω					
Moisture Resistance	±5% + 0.05Ω					
Shock and Vibration	±1% + 0.05Ω					



5 Watt Resistor Assortment

RS 105-ND 0.3011-0.9111 — 5 each 60 Resistors \$23.95	
RS205-ND 1.0 Ω -9.1 Ω — 4 each 96 Resistors\$32.95	
RS305-ND 10 Ω -91 Ω — 4 each 96 Resistors \$32.95	
RS405-ND 100 Ω -2.0K Ω — 3 each 96 Resistors\$32.95	

10 Watt Resistor Assortment							
2 each of all 10 watt standard resistor values							
listed above. A total of 168 resistors.							
R110-ND\$72.95							

YAGEO

ZEROHM JUMPER WIRES

Applications:

Effect of Soldering

Generally they are used for the following reasons:

· Inability to connect two points on a P.C. Board due to other circuit paths which must be crossed over.

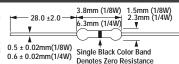
• An After-the-Fact design change that requires new point

±2% + 0.05Ω

Circuit tuning by changing point connections.

Specifications:

Maximum Resistance: 0.004 ohm on 1/8 watt, 0.003 ohm on 1/4 watt; Typical Resistance: 0.002 ohm on both; Lead Material: tin-plated copper; Body Material: electrical grade, high performance molding compound; Min. Insulation Resistance — Dry: $10,000~\text{meg}\Omega$, Wet: $100~\text{meg}\Omega$; Min. Dielectric Withstanding Voltage — Atmospheric: 500V~RMS, Reduced: 325V~RMS; Insulation Flammability: resistor-insulation is self extinguishing within 10 seconds after externally applied flame is removed; Current Rating: 25 Amps at 25°C, derating to 0 amps at 150°C.



	Digi-Key P			Pricing	Pricing			
Description	Part No.	5	200	1M	5M	10M	50M	
1/8 Watt, Zerohm Jumper, Bulk Package	0.0EBK-ND	.26	8.11	16.28	14.93/M	13.52/M	12.48/M	
1/8 Watt, Zerohm Jumper, Tape/Reel (5M Pcs./Reel)	0.0ETR-ND	_	_	_	18.37/M	17.29/M	14.14/M	
1/4 Watt, Zerohm Jumper, Bulk Package	0.0QBK-ND	.27	4.93	10.03	9.23/M	8.37/M	7.73/M	
1/4 Watt, Zerohm Jumper, Tape/Reel (5M Pcs./Reel)	0.0QTR-ND	_	_	_	11.53/M	10.85/M	8.90/M	