

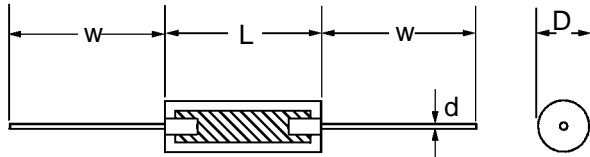
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REVISIONS

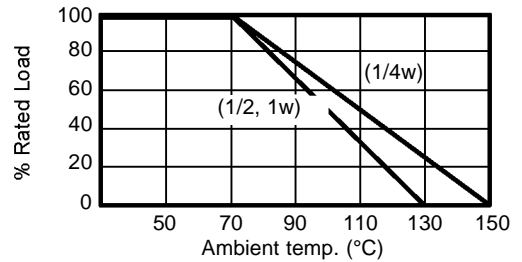
DOC. NO. SPC-004, Total Pages 2
Effective: 7/15/97 DCP No: 229 Supersedes DCP No: 103

DCP	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
249	C	CHANGE RESISTANCE RANGE	D.J.C.	8/12/97	J.C.	8/13/97	J.C.	8/13/97
284	D	CHANGE RC100G181KB	D.J.C.	9/23/97	J.C.	9/24/97	J.C.	9/24/97

Dimensions



Derating Curve



Ratings and Dimensions

Type	Rated Power (W)	Dimensions in mm				Max. Rated Voltage (v)	Max. Overload Voltage (v)	Resistance range(W)	Resistance Tolerance (%)
		L	D	w	d				
RC - 1/4	0.25	6.3±0.7	2.4±0.1	30±3.0	± 0.6 0.02	250	400	2.2 to 5.6M	±5
RC - 1/2	0.5	9.5 ^{+0.8} _{-0.7}	3.6±0.2	25±1.0	± 0.7 0.02	350	700	2.2 to 20M	±5
RC - 100	1	14.3±0.7	5.7±0.3	30±3.0	± .92 0.02	500	1000	2.2 to 1M	±10

1/4 WATT (Sold in Packs of 200)

MC Type #	W	MC Type #	W	MC Type #	W	MC Type #	W	MC Type #	W
RC1/4G2R2JT	2.2	RC1/4G150JT	15	RC1/4G101JT	100	RC1/4G681JT	680	RC1/4G472JT	4.7K
RC1/4G2R4JT	2.4	RC1/4G160JT	16	RC1/4G111JT	110	RC1/4G751JT	750	RC1/4G512JT	5.1K
RC1/4G2R7JT	2.7	RC1/4G180JT	18	RC1/4G121JT	120	RC1/4G821JT	820	RC1/4G562JT	5.6K
RC1/4G3R0JT	3.0	RC1/4G200JT	20	RC1/4G131JT	130	RC1/4G911JT	910	RC1/4G622JT	6.2K
RC1/4G3R3JT	3.3	RC1/4G220JT	22	RC1/4G151JT	150	RC1/4G102JT	1.0K	RC1/4G682JT	6.8K
RC1/4G3R6JT	3.6	RC1/4G240JT	24	RC1/4G161JT	160	RC1/4G112JT	1.1K	RC1/4G752JT	7.5K
RC1/4G3R9JT	3.9	RC1/4G270JT	27	RC1/4G181JT	180	RC1/4G122JT	1.2K	RC1/4G822JT	8.2K
RC1/4G4R3JT	4.3	RC1/4G300JT	30	RC1/4G201JT	200	RC1/4G132JT	1.3K	RC1/4G912JT	9.1K
RC1/4G4R7JT	4.7	RC1/4G330JT	33	RC1/4G221JT	220	RC1/4G152JT	1.5K	RC1/4G103JT	10K
RC1/4G5R1JT	5.1	RC1/4G360JT	36	RC1/4G241JT	240	RC1/4G162JT	1.6K	RC1/4G113JT	11K
RC1/4G5R6JT	5.6	RC1/4G390JT	39	RC1/4G271JT	270	RC1/4G182JT	1.8K	RC1/4G123JT	12K
RC1/4G6R2JT	6.2	RC1/4G430JT	43	RC1/4G301JT	300	RC1/4G202JT	2.0K	RC1/4G133JT	13K
RC1/4G6R8JT	6.8	RC1/4G470JT	47	RC1/4G331JT	330	RC1/4G222JT	2.2K	RC1/4G153JT	15K
RC1/4G7R5JT	7.5	RC1/4G510JT	51	RC1/4G361JT	360	RC1/4G242JT	2.4K	RC1/4G163JT	16K
RC1/4G8R2JT	8.2	RC1/4G560JT	56	RC1/4G391JT	390	RC1/4G272JT	2.7K	RC1/4G183JT	18K
RC1/4G9R1JT	9.1	RC1/4G620JT	62	RC1/4G431JT	430	RC1/4G302JT	3.0K	RC1/4G203JT	20K
RC1/4G100JT	10	RC1/4G680JT	68	RC1/4G471JT	470	RC1/4G332JT	3.3K	RC1/4G223JT	22K
RC1/4G110JT	11	RC1/4G750JT	75	RC1/4G511JT	510	RC1/4G362JT	3.6K	RC1/4G243JT	24K
RC1/4G120JT	12	RC1/4G820JT	82	RC1/4G561JT	560	RC1/4G392JT	3.9K	RC1/4G273JT	27K
RC1/4G130JT	13	RC1/4G910JT	91	RC1/4G621JT	620	RC1/4G432JT	4.3K	RC1/4G303JT	30K

DISCLAIMER:
ALL STATEMENTS AND TECHNICAL INFORMATION CONTAINED HEREIN ARE BASED UPON INFORMATION AND/OR TESTS WE BELIEVE TO BE ACCURATE AND RELIABLE SINCE CONDITIONS OF USE ARE BEYOND OUR CONTROL, THE USER SHALL DETERMINE THE SUITABILITY OF THE PRODUCT FOR THE INTENDED USE AND ASSUME ALL RISK AND LIABILITY WHATSOEVER IN CONNECTION THEREWITH.



DRAWN BY:	DATE:	DRAWING TITLE			
Jeff McVicker	7/16/97	CARBON COMPOSITION RESISTORS			
CHECKED BY:	DATE:	SIZE	DWG. NO.	Electronic File	REV
JOHN COLE	7/17/97	A	TA-84	TA-84.qxd	D
APPROVED	DATE:	SCALE:		SHEET:	
BRETT BRAATZ	7/22/97	NTS		1 OF 9	

U.O.M. Millimeters

1/4 WATT (cont.)

MC Type #	W	MC Type #	W	MC Type #	W	MC Type #	W	MC Type #	W
RC1/4G333JT	33K	RC1/4G913JT	91K	RC1/4G274JT	270K	RC1/4G754JT	750K	RC1/4G225JT	2.2M
RC1/4G363JT	36K	RC1/4G104JT	100K	RC1/4G304JT	300K	RC1/4G824JT	820K	RC1/4G245JT	2.4M
RC1/4G393JT	39K	RC1/4G114JT	110K	RC1/4G334JT	330K	RC1/4G914JT	910K	RC1/4G275JT	2.7M
RC1/4G433JT	43K	RC1/4G124JT	120K	RC1/4G364JT	360K	RC1/4G105JT	1.0M	RC1/4G305JT	3.0M
RC1/4G473JT	47K	RC1/4G134JT	130K	RC1/4G394JT	390K	RC1/4G115JT	1.1M	RC1/4G335JT	3.3M
RC1/4G513JT	51K	RC1/4G154JT	150K	RC1/4G434JT	430K	RC1/4G125JT	1.2M	RC1/4G365JT	3.6M
RC1/4G563JT	56K	RC1/4G164JT	160K	RC1/4G474JT	470K	RC1/4G135JT	1.3M	RC1/4G395JT	3.9M
RC1/4G623JT	62K	RC1/4G184JT	180K	RC1/4G514JT	510K	RC1/4G155JT	1.5M	RC1/4G435JT	4.3M
RC1/4G683JT	68K	RC1/4G204JT	200K	RC1/4G564JT	560K	RC1/4G165JT	1.6M	RC1/4G475JT	4.7M
RC1/4G753JT	75K	RC1/4G224JT	220K	RC1/4G624JT	620K	RC1/4G185JT	1.8M	RC1/4G515JT	5.1M
RC1/4G823JT	82K	RC1/4G244JT	240K	RC1/4G684JT	680K	RC1/4G205JT	2.0M	RC1/4G565JT	5.6M

1/2 WATT (Sold in Packs of 100)

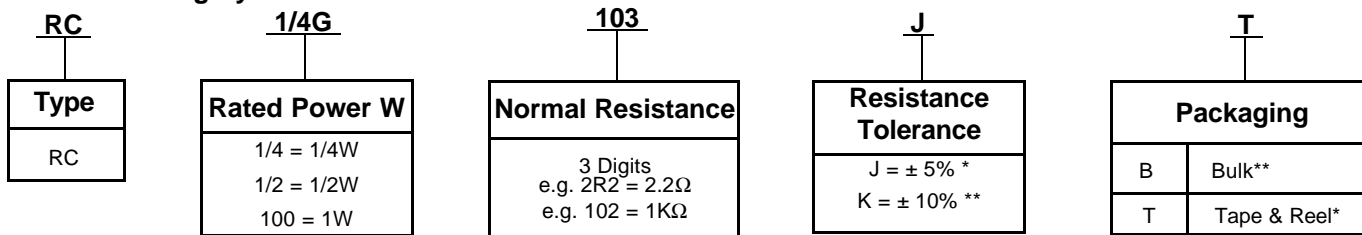
MC Type #	W	MC Type #	W	MC Type #	W	MC Type #	W	MC Type #	W
RC1/2G2R2JT	2.2	RC1/2G560JT	56	RC1/2G152JT	1.5K	RC1/2G393JT	39K	RC1/2G914JT	910K
RC1/2G2R4JT	2.4	RC1/2G620JT	62	RC1/2G162JT	1.6K	RC1/2G433JT	43K	RC1/2G105JT	1.0M
RC1/2G2R7JT	2.7	RC1/2G680JT	68	RC1/2G182JT	1.8K	RC1/2G473JT	47K	RC1/2G115JT	1.1M
RC1/2G3R0JT	3.0	RC1/2G750JT	75	RC1/2G202JT	2.0K	RC1/2G513JT	51K	RC1/2G125JT	1.2M
RC1/2G3R3JT	3.3	RC1/2G820JT	82	RC1/2G222JT	2.2K	RC1/2G563JT	56K	RC1/2G135JT	1.3M
RC1/2G3R6JT	3.6	RC1/2G910JT	91	RC1/2G242JT	2.4K	RC1/2G623JT	62K	RC1/2G155JT	1.5M
RC1/2G3R9JT	3.9	RC1/2G101JT	100	RC1/2G272JT	2.7K	RC1/2G683JT	68K	RC1/2G165JT	1.6M
RC1/2G4R3JT	4.3	RC1/2G111JT	110	RC1/2G302JT	3.0K	RC1/2G753JT	75K	RC1/2G185JT	1.8M
RC1/2G4R7JT	4.7	RC1/2G121JT	120	RC1/2G332JT	3.3K	RC1/2G823JT	82K	RC1/2G205JT	2.0M
RC1/2G5R1JT	5.1	RC1/2G131JT	130	RC1/2G362JT	3.6K	RC1/2G913JT	91K	RC1/2G225JT	2.2M
RC1/2G5R6JT	5.6	RC1/2G151JT	150	RC1/2G392JT	3.9K	RC1/2G104JT	100K	RC1/2G245JT	2.4M
RC1/2G6R2JT	6.2	RC1/2G161JT	160	RC1/2G432JT	4.3K	RC1/2G114JT	110K	RC1/2G275JT	2.7M
RC1/2G6R8JT	6.8	RC1/2G181JT	180	RC1/2G472JT	4.7K	RC1/2G124JT	120K	RC1/2G305JT	3.0M
RC1/2G7R5JT	7.5	RC1/2G201JT	200	RC1/2G512JT	5.1K	RC1/2G134JT	130K	RC1/2G335JT	3.3M
RC1/2G8R2JT	8.2	RC1/2G221JT	220	RC1/2G562JT	5.6K	RC1/2G154JT	150K	RC1/2G365JT	3.6M
RC1/2G9R1JT	9.1	RC1/2G241JT	240	RC1/2G622JT	6.2K	RC1/2G164JT	160K	RC1/2G395JT	3.9M
RC1/2G100JT	10	RC1/2G271JT	270	RC1/2G682JT	6.8K	RC1/2G184JT	180K	RC1/2G435JT	4.3M
RC1/2G110JT	11	RC1/2G301JT	300	RC1/2G752JT	7.5K	RC1/2G204JT	200K	RC1/2G475JT	4.7M
RC1/2G120JT	12	RC1/2G331JT	330	RC1/2G822JT	8.2K	RC1/2G224JT	220K	RC1/2G515JT	5.1M
RC1/2G130JT	13	RC1/2G361JT	360	RC1/2G912JT	9.1K	RC1/2G244JT	240K	RC1/2G565JT	5.6M
RC1/2G150JT	15	RC1/2G391JT	390	RC1/2G103JT	10K	RC1/2G274JT	270K	RC1/2G625JT	6.2M
RC1/2G160JT	16	RC1/2G431JT	430	RC1/2G113JT	11K	RC1/2G304JT	300K	RC1/2G685JT	6.8M
RC1/2G180JT	18	RC1/2G471JT	470	RC1/2G123JT	12K	RC1/2G334JT	330K	RC1/2G755JT	7.5M
RC1/2G200JT	20	RC1/2G511JT	510	RC1/2G133JT	13K	RC1/2G364JT	360K	RC1/2G825JT	8.2M
RC1/2G220JT	22	RC1/2G561JT	560	RC1/2G153JT	15K	RC1/2G384JT	380K	RC1/2G915JT	9.1M
RC1/2G240JT	24	RC1/2G621JT	620	RC1/2G163JT	16K	RC1/2G394JT	390K	RC1/2G106JT	10M
RC1/2G270JT	27	RC1/2G681JT	680	RC1/2G183JT	18K	RC1/2G434JT	430K	RC1/2G116JT	11M
RC1/2G300JT	30	RC1/2G751JT	750	RC1/2G203JT	20K	RC1/2G474JT	470K	RC1/2G126JT	12M
RC1/2G330JT	33	RC1/2G821JT	820	RC1/2G223JT	22K	RC1/2G514JT	510K	RC1/2G136JT	13M
RC1/2G360JT	36	RC1/2G911JT	910	RC1/2G243JT	24K	RC1/2G564JT	560K	RC1/2G156JT	15M
RC1/2G390JT	39	RC1/2G102JT	1.0K	RC1/2G273JT	27K	RC1/2G624JT	620K	RC1/2G166JT	16M
RC1/2G430JT	43	RC1/2G112JT	1.1K	RC1/2G303JT	33K	RC1/2G684JT	680K	RC1/2G186JT	18M
RC1/2G470JT	47	RC1/2G122JT	1.2K	RC1/2G333JT	33K	RC1/2G754JT	750K	RC1/2G206JT	20M
RC1/2G510JT	51	RC1/2G132JT	1.3K	RC1/2G363JT	36K	RC1/2G824JT	820K		

SIZE A	DWG. NO. TA-84	ELECTRONIC FILE TA-84.QXD	REV D
SCALE: NTS	UOM: Millimeters	SHEET: 2 OF 9	

1 WATT (Sold in packs of 100)

MC Type #	W	MC Type #	W	MC Type #	W	MC Type #	W	MC Type #	W
RC100G2R2KB	2.2	RC100G330KB	33	RC100G471KB	470	RC100G682KB	6.8K	RC100G104KB	100K
RC100G2R7KB	2.7	RC100G390KB	39	RC100G561KB	560	RC100G822KB	8.2K	RC100G124KB	120K
RC100G3R3KB	3.3	RC100G470KB	47	RC100G681KB	680	RC100G103KB	10K	RC100G154KB	150K
RC100G3R9KB	3.9	RC100G560KB	56	RC100G821KB	820	RC100G123KB	12K	RC100G184KB	180K
RC100G4R7KB	4.7	RC100G680KB	68	RC100G102KB	1.0K	RC100G153KB	15K	RC100G224KB	220K
RC100G5R6KB	5.6	RC100G820KB	82	RC100G122KB	1.2K	RC100G183KB	18K	RC100G274KB	270K
RC100G6R8KB	6.8	RC100G101KB	100	RC100G152KB	1.5K	RC100G223KB	22K	RC100G334KB	330K
RC100G8R2KB	8.2	RC100G121KB	120	RC100G182KB	1.8K	RC100G273KB	27K	RC100G384KB	380K
RC100G100KB	10	RC100G151KB	150	RC100G222KB	2.2K	RC100G333KB	33K	RC100G474KB	470K
RC100G120KB	12	RC100G181KB	180	RC100G272KB	2.7K	RC100G393KB	39K	RC100G564KB	560K
RC100G150KB	15	RC100G221KB	220	RC100G332KB	3.3K	RC100G473KB	47K	RC100G684KB	680K
RC100G180KB	18	RC100G271KB	270	RC100G392KB	3.9K	RC100G563KB	56K	RC100G824KB	820K
RC100G220KB	22	RC100G331KB	330	RC100G472KB	4.7K	RC100G683KB	68K	RC100G105KB	1.0M
RC100G270KB	27	RC100G391KB	390	RC100G562KB	5.6K	RC100G823KB	82K		

Part Numbering System



NOTE: 'G' is used as a spacer, it has no significance

* 1/4 & 1/2 W only; ** 1W only

Specification Limit and Performance

Test procedures, sequence of test, etc., refer to MIL-STD 202D and JIS-C-5202.

Mechanical Characteristics

Spec. & Performance Items		MIL - R - 11F SPEC.LIMIT		Spec. Limit		Performance	
		RC07	RC20	RC _{1/4}	RC _{1/2}	RC _{1/4}	RC _{1/2}
		Terminal strength	Pull	2.27kg		1kg	2.5kg
Bending	No damage, ± (1% + 0.05W)		No damage		No damage	No damage	
Vibration	High frequency no damage, ± (2% + 0.05W)	Twist No damage ± (1% + 0.05Ω)		0.5kg			1kg
		± (3% + 0.05W)		± 3%			
Resistance to soldering heat	232°C, 3 sec.	350°C		300°C	350°C	± 1.5%	
		95% and over		75% and over			

SIZE A	DWG. NO. TA-84	ELECTRONIC FILE TA-84.qxd	REV D
SCALE: NTS	UOM Millimeters	SHEET: 3 OF 9	

Electrical Characteristics

Spec. & Performance Items		MIL-R-11F SPEC-LIMIT		Spec. Limit		Performance		
		RC07	RC20	RC _{1/4}	RC _{1/2}	RC _{1/4}	RC _{1/2}	
Resistance temperature characteristics	R range	at -55°C (%)	at -105°C (%)	at -55°C (%)	at 100°C (%)	at -55°C (%)	at 100°C (%)	
	1KΩ and under	± 6.5	± 5	+ 6.5 to 0	+1 to -5	+3.5 to +4.5	-3.0 to -4.0	
	1.1KΩ to 10KΩ	± 10	± 6	+ 10 to 0	0 to -6	+4.5 to +5.5	-4.0 to -5.0	
	11KΩ to 100KΩ	± 13	± 7.5	+ 13 to 0	0 to -7.5	+9.0 to +10	-5.0 to -6.0	
	110KΩ to 1MΩ	± 15	± 10	+ 15 to 0	0 to -10	+10 to +11	-6.0 to -7.0	
	1.1MΩ to 10MΩ	± 20	± 15	+ 20 to 0	0 to -10			
	11MΩ and over	± 25		-----	0 to -15			
Voltage coefficient		± 0.035 % / v	± 0.02 % / v	± 0.05 % / v	± 0.035% / v	- 0.02 % and under		
Short time overload		± 2.5%				± 0.7%	± 0.5%	
Insulation resistance		100V	500V	100V	500V	10,000MΩ and over		
Dielectric withstanding voltage		1,000MΩ and over					No breakdown & No damage	
		325V	450V	300V	500V	700V	No breakdown & No damage	
		No breakdown & No damage						

Environmental Characteristics

Spec. & Performance Items		MIL-R-11F SPEC-LIMIT		Spec. Limit		Performance	
		RC07	RC20	RC _{1/4}	RC _{1/2}	RC _{1/4}	RC _{1/2}
Temperature cycling		± 4%		± 2%		± 0.5%	
Humidity (Steady state)				± 3%		± 1.0%	
Damp heat (Long term)		X 10% Max.15%		± 5%	± 8%	± 1.0%	
Load life		X 6% Max.10%		± 6%	± 8%	± 3.0%	

Reliability Test (Damp Heat)

Samples: RC 1/4, 100Ω, 1KΩ, 10KΩ, 100KΩ, J, n = 150PCS. Each Total 2,400PCS.

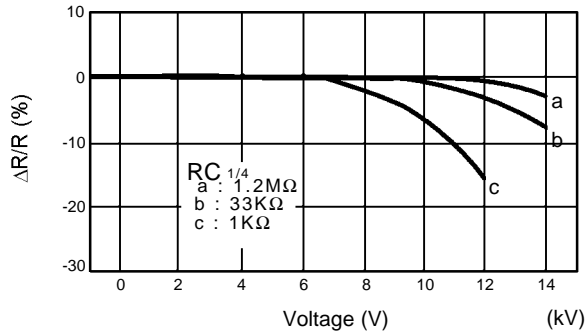
Condition: 5,000 Hrs. operating at interval rated load at 40°C, 95%RH.

Failure rate level determination (%)	P/P _N (%)	Component hour T (Hrs)	Number of failure r (P.C.S.)	Failure rate (% / 1,000Hr)		MTTF _{CL} (60%) (Hrs)	
				I	I _{CL} (60%)		
ΔR/R	± 5	0	2.984 x 10 ⁶	6	0.201	0.244	4.098 x 10 ⁵
		20	2.990 x 10 ⁶	4	0.134	0.176	5.682 x 10 ⁵
		60	2.997 x 10 ⁶	2	0.067	0.104	9.615 x 10 ⁵
		100	2.992 x 10 ⁶	3	0.100	0.139	7.194 x 10 ⁵
		Total	1.196 x 10 ⁷	15	0.125	0.138	7.209 x 10 ⁵
	± 10	Total	1.20 x 10 ⁷	0	0.0055	0.0077	1.299 x 10 ⁷

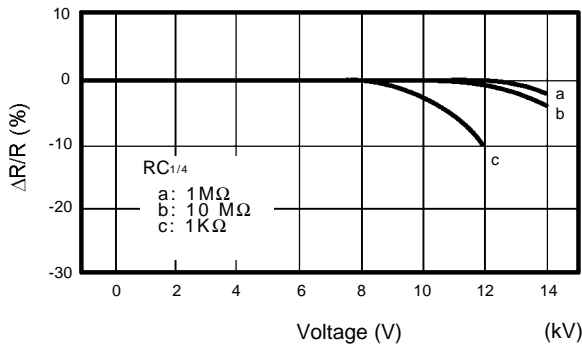
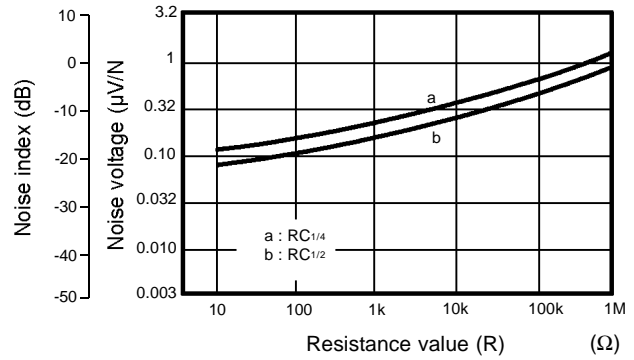
SIZE A	DWG. NO. TA-84	ELECTRONIC FILE TA-84.QXD	REV D
SCALE: NTS	UOM Millimeters	SHEET: 4 OF 9	

Typical Characteristics (Average value) Pulse Characteristic

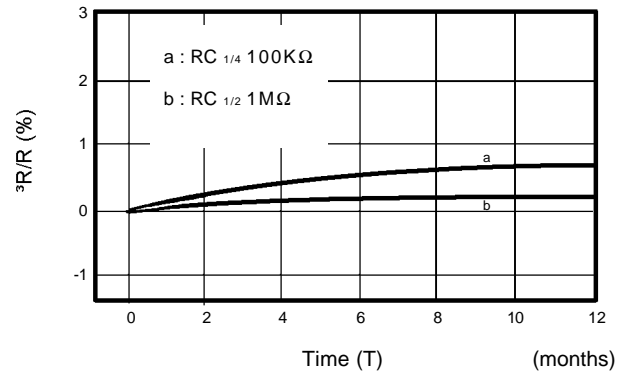
2000PF discharge pulse, 100 times



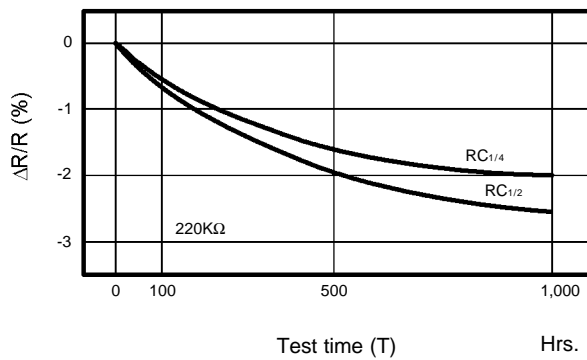
Current Noise



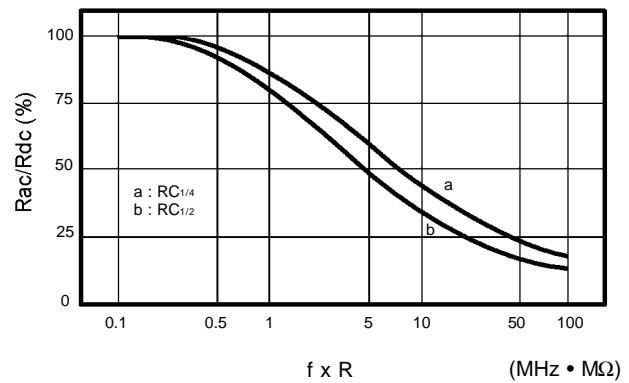
Aging Drift



Load Life
At 70°C, Interval, Rated Load



High Frequency Characteristic



SIZE A	DWG. NO. TA-84	ELECTRONIC FILE TA-84.QXD	REV D
SCALE: NTS	UOM Millimeters	SHEET: 5 OF 9	

1 Watt

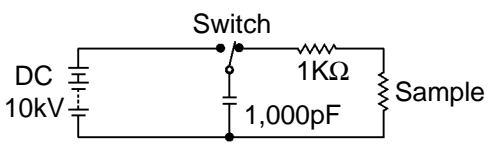
<p>DC Resistance</p>	<p>DC resistance value must be within the specified tolerance.</p>	<p>DC resistance value measured at the test voltage specified below:</p> <table border="1" data-bbox="1024 331 1507 627"> <thead> <tr> <th>Nominal Resistance</th> <th>DC test voltage</th> </tr> </thead> <tbody> <tr> <td>99Ω and lower</td> <td>0.5V to 1V</td> </tr> <tr> <td>10Ω to 999Ω</td> <td>2.5V to 3V</td> </tr> <tr> <td>1,000Ω to 9,999Ω</td> <td>8V to 10V</td> </tr> <tr> <td>10,000Ω to 99,999Ω</td> <td>24V to 30V</td> </tr> <tr> <td>100,000Ω and higher</td> <td>80V to 100V</td> </tr> </tbody> </table>	Nominal Resistance	DC test voltage	99Ω and lower	0.5V to 1V	10Ω to 999Ω	2.5V to 3V	1,000Ω to 9,999Ω	8V to 10V	10,000Ω to 99,999Ω	24V to 30V	100,000Ω and higher	80V to 100V			
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<p>Resistance Temperature Characteristics</p>	<table border="1" data-bbox="402 680 992 953"> <thead> <tr> <th>Nominal Resistance</th> <th>Test Temp. @ -55°C</th> <th>Test Temp. @ 100°C</th> </tr> </thead> <tbody> <tr> <td>1.0KΩ and under</td> <td>6.5 to -3%</td> <td>5 to 4%</td> </tr> <tr> <td>1.1KΩ to 10KΩ</td> <td>10 to -3%</td> <td>6 to 5%</td> </tr> <tr> <td>11KΩ to 100KΩ</td> <td>13 to -3%</td> <td>7.5 to 6%</td> </tr> <tr> <td>110KΩ to 1MΩ</td> <td>15 to -3%</td> <td>10 to 7%</td> </tr> </tbody> </table>	Nominal Resistance	Test Temp. @ -55°C	Test Temp. @ 100°C	1.0KΩ and under	6.5 to -3%	5 to 4%	1.1KΩ to 10KΩ	10 to -3%	6 to 5%	11KΩ to 100KΩ	13 to -3%	7.5 to 6%	110KΩ to 1MΩ	15 to -3%	10 to 7%	<p>$\frac{R2 - R1}{R1} \times 100(\%)$</p> <p>R1: Resistance value at reference temp. R2: Resistance value at test temp.</p> <p>Sequence of temp: -25°C, -15°C, -55°C, 25°C, 60°C, 100°C</p>
Nominal Resistance	Test Temp. @ -55°C	Test Temp. @ 100°C															
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<p>Voltage Coefficient (Application for 1KWmin.)</p>	<p>A total resistance change of 2% maximum or chart below.</p> <table border="1" data-bbox="402 1129 992 1314"> <thead> <tr> <th>Rated Power</th> <th>Coefficient Voltage</th> </tr> </thead> <tbody> <tr> <td>1 Watt</td> <td>-0.020%/V</td> </tr> </tbody> </table>	Rated Power	Coefficient Voltage	1 Watt	-0.020%/V	<p>Instantaneous change in resistance per volt based on:</p> $\frac{R - r}{r} \times \frac{100}{0.9 \times RCWV} \quad (\% / V)$											
Rated Power	Coefficient Voltage																
1 Watt	-0.020%/V																
<p>Dielectric Withstanding Voltage</p>	<p>No evidence of flashover, mechanical damage, arcing or insulation breakdown.</p>	<p>Resistors shall be clamped in the trough of a 90° metallic V-block and shall be tested at AC potential respectively specified in the above list for 5 seconds.</p>															
<p>Insulation Resistance</p>	<p>10,000MΩ Min.</p>	<p>Resistors shall be clamped in the trough of a 90° metallic V-block and shall be measured at DC 100V for 1/4W and DC 500V for 1/2W and 1W.</p>															

1 Watt

<p>Temperature Cycling</p>	<p>±4% Max. with no evidence of mechanical damage.</p>	<p>Resistance change after continuous five cycles for duty cycle specified below.</p> <table border="1" data-bbox="964 327 1430 575"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time (minute)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55°C</td> <td>30</td> </tr> <tr> <td>2</td> <td>25°C</td> <td>10 to 15</td> </tr> <tr> <td>3</td> <td>85°C</td> <td>30</td> </tr> <tr> <td>4</td> <td>25°C</td> <td>10 to 15</td> </tr> </tbody> </table>	Step	Temperature	Time (minute)	1	-55°C	30	2	25°C	10 to 15	3	85°C	30	4	25°C	10 to 15
Step	Temperature	Time (minute)															
1	-55°C	30															
2	25°C	10 to 15															
3	85°C	30															
4	25°C	10 to 15															
<p>Humidity (Steady State)</p>	<p>±10% Max. with no evidence of arcing, burning, or charring.</p>	<p>Permanent resistance change after the application of a potential of 2.5 times RCWV, or the maximum overload voltage respectively specified in the above list, whichever is less for 5 seconds.</p>															
<p>Short Time Overload</p>	<p>±(2.5% + 0.05Ω) Maximum with no evidence of arcing, burning, or charring.</p>	<p>Permanent resistance change after the application of a potential of 2.5 time RCWV, or the maximum overload voltage respectively specified in the above list, whichever is less for 5 seconds.</p>															
<p>Load Life in Humidity</p>	<p>±20% Max. with no evidence of mechanical damage.</p>	<p>500 hours exposure in a humidity test chamber controlled at 40° ± 2°C and 90 to 95 relative humidity.</p>															
<p>Load Life</p>	<table border="1" data-bbox="337 1247 907 1423"> <thead> <tr> <th colspan="2">Resistance Change</th> </tr> </thead> <tbody> <tr> <td>Average</td> <td>± 6%</td> </tr> <tr> <td>Max.</td> <td>± 10%</td> </tr> </tbody> </table>	Resistance Change		Average	± 6%	Max.	± 10%	<p>Permanent resistance change after 1,000 hours operating at RCWV, or max. RCWV, whichever is less with a duty cycle of 1.5 hours "ON", 0.5 hours "OFF" at 70° ± 2°C ambient.</p>									
Resistance Change																	
Average	± 6%																
Max.	± 10%																
<p>Terminal Strength</p>	<p>± (1% + 0.05Ω) Max. with no evidence of mechanical damage.</p>	<p>Direct load: Resistance to a 2.5 kgf (25N) direct load for 5 seconds in the direction of the longitudinal axis of the terminal leads.</p> <p>Twist test: Terminal leads shall be bent through 90° at a point of 6.35mm from the body of the resistor and shall be rotated through 360° about the original axis of the bent terminal in alternating direction for a total of 3 rotations.</p>															

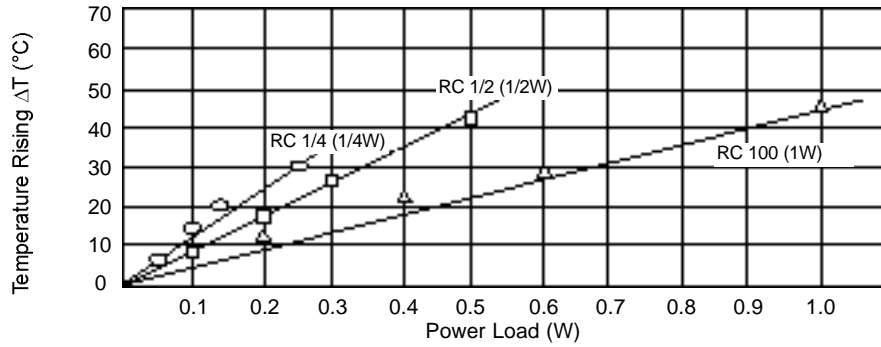
<p>SIZE A</p>	<p>DWG. NO. TA-84</p>	<p>ELECTRONIC FILE TA-84.QXD</p>	<p>REV D</p>
<p>SCALE: NTS</p>		<p>UOM Millimeters</p>	<p>SHEET: 7 OF 9</p>

1 Watt

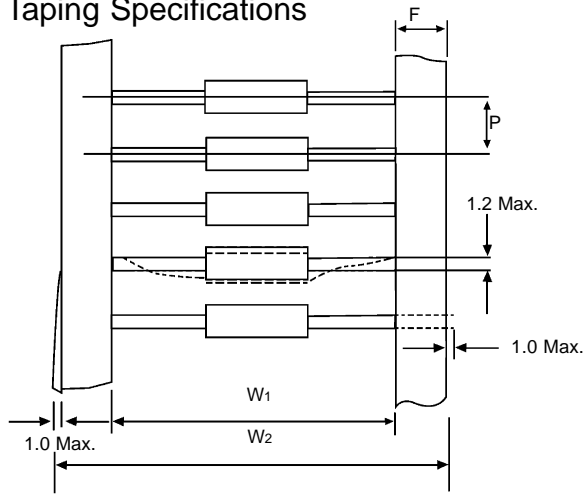
Resistance to Soldering Heat	$\pm (3\% + 0.05\Omega)$ Max. with no evidence of mechanical damage.	Permanent resistance change when leads immersed 4.0 ± 0.8 mm from the body in $350^\circ \pm 10^\circ\text{C}$, solder for 3 ± 0.5 seconds.
Vibration	$\pm (1\% + 0.05\Omega)$ Max. with no evidence of mechanical, electrical damage and electrical discontinuity.	A single vibration having an amplitude for 1.6 mm. for 2 hours in each X, Y, Z, direction. One minute between 10 and 55 Hz.
Low Temperature Operation	$\pm 3\%$ Max. with no evidence of mechanical damage.	Resistor shall be placed in a cold chamber at room temperature, the temperature shall be gradually decreased to $-65 \pm 10/-5^\circ\text{C}$. After 1 hour of stabilization at this temperature, RCWV or maximum RCWV, whichever less shall be applied for 45 minutes. Return to room temperature. Resistance change measured 24 hours after the test.
Solderability	95% coverage Min.	Test temperature of solder: $230 \pm 5^\circ\text{C}$, Dwell time in solder: 3 ± 0.5 seconds.
Resistance to Solvents	No deterioration of color code paints.	Color code paints must resist the solvent test per MIL-STD-202 Method 215
Overload Test (application for ERC 127G, 820kWover)	$\pm 10\%$ Max. with no evidence of mechanical damage.	In room temperature, 1350V AC in 1 second or 1000V AC in 1 minute shall be applied.
High Voltage Pulse (application for ERC 12AG 3.3KWover)	$\pm 50\%$ Max. with no evidence of mechanical damage.	The resistors are subjected to 50 discharges at a maximum rate of 12 per minute, from a 1000 pF capacitor charged to 10kV, in test circuit as shown below. 

SIZE A	DWG. NO. TA-84	ELECTRONIC FILE TA-84.QXD	REV D
SCALE: NTS	UOM Millimeters	SHEET: 8 OF 9	

Hot-Spot Temperature Due to Rate of Power Dissipation



Taping Specifications



Part No.	Taping Dimensions (mm)				
	P	50XP	W ₁	W ₂	F
RC 1/4	5±0.5	254±2	52±1	66 Max.	6±1
RC 1/2	5±0.5	254±2	52±1	66 Max.	6±1

SIZE A	DWG. NO. TA-84	ELECTRONIC FILE TA-84.QXD	REV D
SCALE: NTS	UOM Millimeters	SHEET: 9 OF 9	