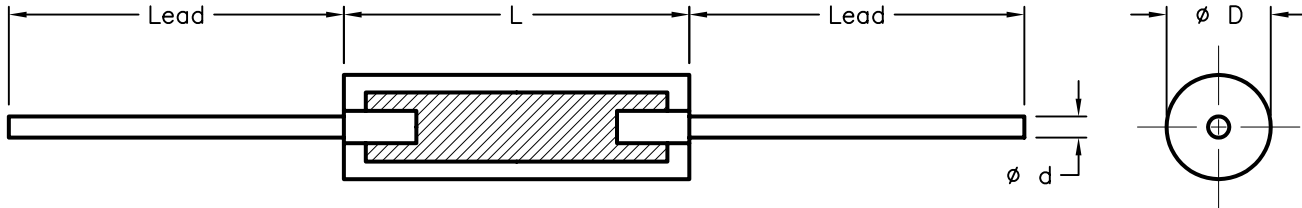


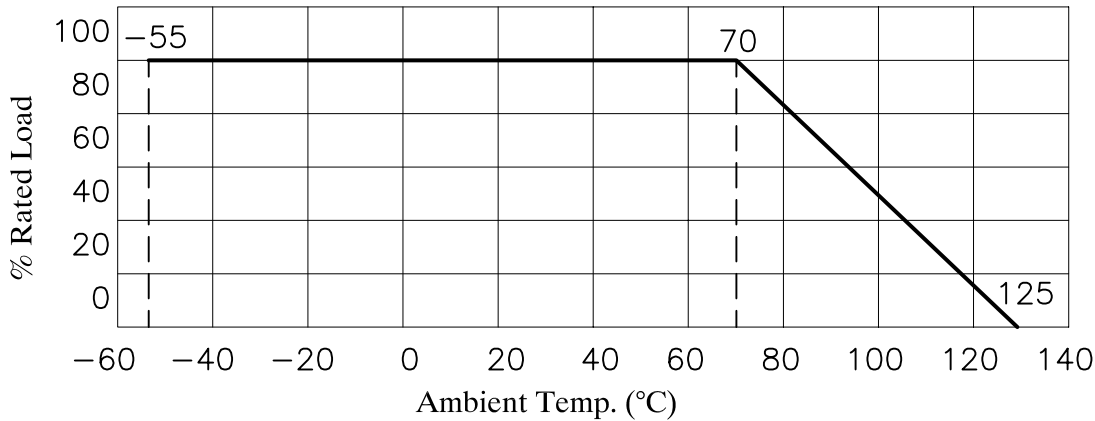
DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
1883	A	RELEASED	E0	02/03/06	HO	2/3/06	JWM	2/3/06



Rating and Dimensions

Power	Dimensions				Max. Rated Voltage (V)	Max. Overload Voltage (V)	Dielectric Withstand (V)	Tolerance ±(%)	R-Value
	L	D	Lead	d					
1/4 W	6.4±0.7	2.3±0.2	30±3.0	0.6	250	400	500	5	E-24
1/2 W	9.5±0.7	3.5±0.3	30±3.0	0.74	350	700	700	5	E-24
1 W	14.3±0.7	5.7±0.3	30±3.0	0.92	500	1000	1000	10	E-12

Derating Curve



SPC-F004.DWG

TOLERANCES: UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.	DRAWN BY: EKLAS ODISH	DATE: 02/03/06	DRAWING TITLE: RoHS Compliant, Carbon Composition Resistors			
	CHECKED BY: HISHAM ODISH	DATE: 2/3/06	SIZE A	DWG. NO. TA-688	ELECTRONIC FILE TA-688.DWG	REV A
	APPROVED BY: JEFF MCVICKER	DATE: 2/3/06	SCALE: NTS		U.O.M.: Millimeters	SHEET: 1 OF 7

ALL RIGHTS RESERVED. NO PORTION OF THIS PUBLICATION, WHETHER IN WHOLE OR IN PART CAN BE REPRODUCED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPC TECHNOLOGY. 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.

Multicomp Mfr P/N#	Power (Watt)	Resistance
MCRC100G2R7KB-RH	1	2.7 ohm
MCRC100G4R7KB-RH	1	4.7 ohm
MCRC100G5R6KB-RH	1	5.6 ohm
MCRC100G6R8KB-RH	1	6.8 ohm
MCRC100G8R2KB-RH	1	8.2 ohm
MCRC100G100KB-RH	1	10 ohm
MCRC100G120KB-RH	1	12 ohm
MCRC100G150KB-RH	1	15 ohm
MCRC100G180KB-RH	1	18 ohm
MCRC100G220KB-RH	1	22 ohm
MCRC100G270KB-RH	1	27 ohm
MCRC100G330KB-RH	1	33 ohm
MCRC100G390KB-RH	1	39 ohm
MCRC100G470KB-RH	1	47 ohm
MCRC100G560KB-RH	1	56 ohm
MCRC100G680KB-RH	1	68 ohm
MCRC100G820KB-RH	1	82 ohm
MCRC100G101KB-RH	1	100 ohm
MCRC100G121KB-RH	1	120 ohm
MCRC100G151KB-RH	1	150 ohm
MCRC100G181KB-RH	1	180 ohm
MCRC100G221KB-RH	1	220 ohm
MCRC100G271KB-RH	1	270 ohm
MCRC100G331KB-RH	1	330 ohm
MCRC100G391KB-RH	1	390 ohm
MCRC100G471KB-RH	1	470 ohm
MCRC100G561KB-RH	1	560 ohm
MCRC100G681KB-RH	1	680 ohm
MCRC100G821KB-RH	1	820 ohm
MCRC100G102KB-RH	1	1 Kohm
MCRC100G122KB-RH	1	1.2 Kohm
MCRC100G152KB-RH	1	1.5 Kohm
MCRC100G182KB-RH	1	1.8 Kohm
MCRC100G222KB-RH	1	2.2 Kohm
MCRC100G272KB-RH	1	2.7 Kohm
MCRC100G332KB-RH	1	3.3 Kohm
MCRC100G392KB-RH	1	3.9 Kohm
MCRC100G472KB-RH	1	4.7 Kohm
MCRC100G562KB-RH	1	5.6 Kohm
MCRC100G682KB-RH	1	6.8 Kohm
MCRC100G103KB-RH	1	10 Kohm
MCRC100G123KB-RH	1	12 Kohm
MCRC100G153KB-RH	1	15 Kohm
MCRC100G183KB-RH	1	18 Kohm
MCRC100G223KB-RH	1	22 Kohm
MCRC100G273KB-RH	1	27 Kohm
MCRC100G333KB-RH	1	33 Kohm
MCRC100G393KB-RH	1	39 Kohm
MCRC100G473KB-RH	1	47 Kohm
MCRC100G683KB-RH	1	68 Kohm
MCRC100G823KB-RH	1	82 Kohm
MCRC100G104KB-RH	1	100 Kohm
MCRC100G124KB-RH	1	120 Kohm
MCRC100G154KB-RH	1	150 Kohm
MCRC100G184KB-RH	1	180 Kohm
MCRC100G224KB-RH	1	220 Kohm
MCRC100G274KB-RH	1	270 Kohm
MCRC100G334KB-RH	1	330 Kohm
MCRC100G474KB-RH	1	470 Kohm
MCRC100G564KB-RH	1	560 Kohm
MCRC100G824KB-RH	1	820 Kohm
MCRC100G105KB-RH	1	1 Mohm
MCRC1/2G2R2JT-RH	1/2	2.2 ohm
MCRC1/2G2R4JT-RH	1/2	2.4 ohm

Multicomp Mfr P/N#	Power (Watt)	Resistance
MCRC1/2G2R7JT-RH	1/2	2.7 ohm
MCRC1/2G3R0JT-RH	1/2	3.0 ohm
MCRC1/2G3R3JT-RH	1/2	3.3 ohm
MCRC1/2G3R9JT-RH	1/2	3.9 ohm
MCRC1/2G4R7JT-RH	1/2	4.7 ohm
MCRC1/2G5R1JT-RH	1/2	5.1 ohm
MCRC1/2G5R6JT-RH	1/2	5.6 ohm
MCRC1/2G6R2JT-RH	1/2	6.2 ohm
MCRC1/2G6R8JT-RH	1/2	6.8 ohm
MCRC1/2G8R2JT-RH	1/2	8.2 ohm
MCRC1/2G100JT-RH	1/2	10 ohm
MCRC1/2G120JT-RH	1/2	12 ohm
MCRC1/2G150JT-RH	1/2	15 ohm
MCRC1/2G160JT-RH	1/2	16 ohm
MCRC1/2G200JT-RH	1/2	20 ohm
MCRC1/2G240JT-RH	1/2	24 ohm
MCRC1/2G270JT-RH	1/2	27 ohm
MCRC1/2G300JT-RH	1/2	30 ohm
MCRC1/2G330JT-RH	1/2	33 ohm
MCRC1/2G390JT-RH	1/2	39 ohm
MCRC1/2G470JT-RH	1/2	47 ohm
MCRC1/2G510JT-RH	1/2	51 ohm
MCRC1/2G560JT-RH	1/2	56 ohm
MCRC1/2G620JT-RH	1/2	62 ohm
MCRC1/2G680JT-RH	1/2	68 ohm
MCRC1/2G750JT-RH	1/2	75 ohm
MCRC1/2G820JT-RH	1/2	82 ohm
MCRC1/2G910JT-RH	1/2	91 ohm
MCRC1/2G101JT-RH	1/2	100 ohm
MCRC1/2G111JT-RH	1/2	110 ohm
MCRC1/2G121JT-RH	1/2	120 ohm
MCRC1/2G131JT-RH	1/2	130 ohm
MCRC1/2G151JT-RH	1/2	150 ohm
MCRC1/2G161JT-RH	1/2	160 ohm
MCRC1/2G181JT-RH	1/2	180 ohm
MCRC1/2G201JT-RH	1/2	200 ohm
MCRC1/2G211JT-RH	1/2	220 ohm
MCRC1/2G241JT-RH	1/2	240 ohm
MCRC1/2G271JT-RH	1/2	270 ohm
MCRC1/2G301JT-RH	1/2	300 ohm
MCRC1/2G331JT-RH	1/2	330 ohm
MCRC1/2G361JT-RH	1/2	360 ohm
MCRC1/2G391JT-RH	1/2	390 ohm
MCRC1/2G431JT-RH	1/2	430 ohm
MCRC1/2G471JT-RH	1/2	470 ohm
MCRC1/2G511JT-RH	1/2	510 ohm
MCRC1/2G561JT-RH	1/2	560 ohm
MCRC1/2G621JT-RH	1/2	620 ohm
MCRC1/2G681JT-RH	1/2	680 ohm
MCRC1/2G751JT-RH	1/2	750 ohm
MCRC1/2G821JT-RH	1/2	820 ohm
MCRC1/2G911JT-RH	1/2	910 ohm
MCRC1/2G102JT-RH	1/2	1 Kohm
MCRC1/2G112JT-RH	1/2	1.1 Kohm
MCRC1/2G122JT-RH	1/2	1.2 Kohm
MCRC1/2G132JT-RH	1/2	1.3 Kohm
MCRC1/2G152JT-RH	1/2	1.5 Kohm
MCRC1/2G162JT-RH	1/2	1.6 Kohm
MCRC1/2G182JT-RH	1/2	1.8 Kohm
MCRC1/2G202JT-RH	1/2	2.0 Kohm
MCRC1/2G222JT-RH	1/2	2.2 Kohm
MCRC1/2G242JT-RH	1/2	2.4 Kohm
MCRC1/2G272JT-RH	1/2	2.7 Kohm
MCRC1/2G302JT-RH	1/2	3.0 Kohm

Multicomp Mfr P/N#	Power (Watt)	Resistance
MCRC1/2G332JT-RH	1/2	3.3 Kohm
MCRC1/2G362JT-RH	1/2	3.6 Kohm
MCRC1/2G392JT-RH	1/2	3.9 Kohm
MCRC1/2G472JT-RH	1/2	4.7 Kohm
MCRC1/2G512JT-RH	1/2	5.1 Kohm
MCRC1/2G562JT-RH	1/2	5.6 Kohm
MCRC1/2G622JT-RH	1/2	6.2 Kohm
MCRC1/2G682JT-RH	1/2	6.8 Kohm
MCRC1/2G752JT-RH	1/2	7.5 Kohm
MCRC1/2G822JT-RH	1/2	8.2 Kohm
MCRC1/2G912JT-RH	1/2	9.1 Kohm
MCRC1/2G103JT-RH	1/2	10 Kohm
MCRC1/2G123JT-RH	1/2	12 Kohm
MCRC1/2G133JT-RH	1/2	13 Kohm
MCRC1/2G153JT-RH	1/2	15 Kohm
MCRC1/2G183JT-RH	1/2	18 Kohm
MCRC1/2G203JT-RH	1/2	20 Kohm
MCRC1/2G223JT-RH	1/2	22 Kohm
MCRC1/2G243JT-RH	1/2	24 Kohm
MCRC1/2G273JT-RH	1/2	27 Kohm
MCRC1/2G303JT-RH	1/2	30 Kohm
MCRC1/2G333JT-RH	1/2	33 Kohm
MCRC1/2G363JT-RH	1/2	36 Kohm
MCRC1/2G393JT-RH	1/2	39 Kohm
MCRC1/2G473JT-RH	1/2	47 Kohm
MCRC1/2G513JT-RH	1/2	51 Kohm
MCRC1/2G563JT-RH	1/2	56 Kohm
MCRC1/2G623JT-RH	1/2	62 Kohm
MCRC1/2G683JT-RH	1/2	68 Kohm
MCRC1/2G753JT-RH	1/2	75 Kohm
MCRC1/2G823JT-RH	1/2	82 Kohm
MCRC1/2G104JT-RH	1/2	100 Kohm
MCRC1/2G114JT-RH	1/2	110 Kohm
MCRC1/2G124JT-RH	1/2	120 Kohm
MCRC1/2G144JT-RH	1/2	140 Kohm
MCRC1/2G154JT-RH	1/2	150 Kohm
MCRC1/2G184JT-RH	1/2	180 Kohm
MCRC1/2G204JT-RH	1/2	200 Kohm
MCRC1/2G224JT-RH	1/2	220 Kohm
MCRC1/2G274JT-RH	1/2	270 Kohm
MCRC1/2G304JT-RH	1/2	300 Kohm
MCRC1/2G334JT-RH	1/2	330 Kohm
MCRC1/2G394JT-RH	1/2	390 Kohm
MCRC1/2G434JT-RH	1/2	430 Kohm
MCRC1/2G474JT-RH	1/2	470 Kohm
MCRC1/2G514JT-RH	1/2	510 Kohm
MCRC1/2G564JT-RH	1/2	560 Kohm
MCRC1/2G624JT-RH	1/2	620 Kohm
MCRC1/2G754JT-RH	1/2	750 Kohm
MCRC1/2G105JT-RH	1/2	1 Mohm
MCRC1/2G155JT-RH	1/2	1.5 Mohm
MCRC1/2G225JT-RH	1/2	2.2 Mohm
MCRC1/2G275JT-RH	1/2	2.7 Mohm
MCRC1/2G335JT-RH	1/2	3.3 Mohm
MCRC1/2G395JT-RH	1/2	3.9 Mohm
MCRC1/2G625JT-RH	1/2	6.2 Mohm
MCRC1/2G106JT-RH	1/2	10 Mohm
MCRC1/2G116JT-RH	1/2	11 Mohm
MCRC1/2G126JT-RH	1/2	12 Mohm
MCRC1/2G156JT-RH	1/2	15 Mohm
MCRC1/4G2R2JT-RH	1/4	2.2 ohm
MCRC1/4G2R4JT-RH	1/4	2.4 ohm
MCRC1/4G2R7JT-RH	1/4	2.7 ohm
MCRC1/4G3R0JT-RH	1/4	3.0 ohm
MCRC1/4G3R3JT-RH	1/4	3.3 ohm

ALL RIGHTS RESERVED. NO PORTION OF THIS PUBLICATION, WHETHER IN WHOLE OR IN PART CAN BE REPRODUCED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPC TECHNOLOGY.

SPC-F004.DWG

SIZE DWG. NO.

A

TA-688

ELECTRONIC FILE

TA-688.DWG

REV

A

DOC. NO. SPC-F004 * Effective: 7/8/02 * DCP No: 1398

SCALE: NTS

U.O.M.: Millimeters

SHEET: 2 OF 7

Multicomp Mfr P/N#	Power (Watt)	Resistance
MCRC1/4G3R6JT-RH	1/4	3.6 ohm
MCRC1/4G3R9JT-RH	1/4	3.9 ohm
MCRC1/4G4R3JT-RH	1/4	4.3 ohm
MCRC1/4G4R7JT-RH	1/4	4.7 ohm
MCRC1/4G5R1JT-RH	1/4	5.1 ohm
MCRC1/4G5R6JT-RH	1/4	5.6 ohm
MCRC1/4G6R2JT-RH	1/4	6.2 ohm
MCRC1/4G6R8JT-RH	1/4	6.8 ohm
MCRC1/4G8R2JT-RH	1/4	8.2 ohm
MCRC1/4G100JT-RH	1/4	10 ohm
MCRC1/4G120JT-RH	1/4	12 ohm
MCRC1/4G150JT-RH	1/4	15 ohm
MCRC1/4G200JT-RH	1/4	20 ohm
MCRC1/4G220JT-RH	1/4	22 ohm
MCRC1/4G240JT-RH	1/4	24 ohm
MCRC1/4G270JT-RH	1/4	27 ohm
MCRC1/4G300JT-RH	1/4	30 ohm
MCRC1/4G330JT-RH	1/4	33 ohm
MCRC1/4G360JT-RH	1/4	36 ohm
MCRC1/4G390JT-RH	1/4	39 ohm
MCRC1/4G430JT-RH	1/4	43 ohm
MCRC1/4G470JT-RH	1/4	47 ohm
MCRC1/4G510JT-RH	1/4	51 ohm
MCRC1/4G560JT-RH	1/4	56 ohm
MCRC1/4G620JT-RH	1/4	62 ohm
MCRC1/4G680JT-RH	1/4	68 ohm
MCRC1/4G750JT-RH	1/4	75 ohm
MCRC1/4G820JT-RH	1/4	82 ohm
MCRC1/4G910JT-RH	1/4	91 ohm
MCRC1/4G101JT-RH	1/4	100 ohm
MCRC1/4G111JT-RH	1/4	110 ohm
MCRC1/4G121JT-RH	1/4	120 ohm
MCRC1/4G131JT-RH	1/4	130 ohm
MCRC1/4G151JT-RH	1/4	150 ohm
MCRC1/4G161JT-RH	1/4	160 ohm
MCRC1/4G181JT-RH	1/4	180 ohm
MCRC1/4G201JT-RH	1/4	200 ohm
MCRC1/4G221JT-RH	1/4	220 ohm
MCRC1/4G241JT-RH	1/4	240 ohm
MCRC1/4G271JT-RH	1/4	270 ohm
MCRC1/4G301JT-RH	1/4	300 ohm
MCRC1/4G331JT-RH	1/4	330 ohm
MCRC1/4G361JT-RH	1/4	360 ohm
MCRC1/4G391JT-RH	1/4	390 ohm
MCRC1/4G431JT-RH	1/4	430 ohm
MCRC1/4G471JT-RH	1/4	470 ohm
MCRC1/4G511JT-RH	1/4	510 ohm
MCRC1/4G561JT-RH	1/4	560 ohm
MCRC1/4G621JT-RH	1/4	620 ohm
MCRC1/4G681JT-RH	1/4	680 ohm
MCRC1/4G751JT-RH	1/4	750 ohm
MCRC1/4G821JT-RH	1/4	820 ohm
MCRC1/4G911JT-RH	1/4	910 ohm
MCRC1/4G102JT-RH	1/4	1 Kohm
MCRC1/4G112JT-RH	1/4	1.1 Kohm
MCRC1/4G122JT-RH	1/4	1.2 Kohm
MCRC1/4G132JT-RH	1/4	1.3 Kohm
MCRC1/4G152JT-RH	1/4	1.5 Kohm
MCRC1/4G162JT-RH	1/4	1.6 Kohm
MCRC1/4G182JT-RH	1/4	1.8 Kohm
MCRC1/4G202JT-RH	1/4	2 Kohm
MCRC1/4G222JT-RH	1/4	2.2 Kohm
MCRC1/4G242JT-RH	1/4	2.4 Kohm
MCRC1/4G272JT-RH	1/4	2.7 Kohm

Multicomp Mfr P/N#	Power (Watt)	Resistance
MCRC1/4G302JT-RH	1/4	3.0 Kohm
MCRC1/4G332JT-RH	1/4	3.3 Kohm
MCRC1/4G362JT-RH	1/4	3.6 Kohm
MCRC1/4G392JT-RH	1/4	3.9 Kohm
MCRC1/4G432JT-RH	1/4	4.3 Kohm
MCRC1/4G472JT-RH	1/4	4.7 Kohm
MCRC1/4G512JT-RH	1/4	5.1 Kohm
MCRC1/4G562JT-RH	1/4	5.6 Kohm
MCRC1/4G622JT-RH	1/4	6.2 Kohm
MCRC1/4G682JT-RH	1/4	6.8 Kohm
MCRC1/4G752JT-RH	1/4	7.5 Kohm
MCRC1/4G822JT-RH	1/4	8.2 Kohm
MCRC1/4G912JT-RH	1/4	9.1 Kohm
MCRC1/4G103JT-RH	1/4	10 Kohm
MCRC1/4G123JT-RH	1/4	12 Kohm
MCRC1/4G153JT-RH	1/4	15 Kohm
MCRC1/4G183JT-RH	1/4	18 Kohm
MCRC1/4G203JT-RH	1/4	20 Kohm
MCRC1/4G223JT-RH	1/4	22 Kohm
MCRC1/4G243JT-RH	1/4	24 Kohm
MCRC1/4G273JT-RH	1/4	27 Kohm
MCRC1/4G303JT-RH	1/4	30 Kohm
MCRC1/4G333JT-RH	1/4	33 Kohm
MCRC1/4G363JT-RH	1/4	36 Kohm
MCRC1/4G393JT-RH	1/4	39 Kohm
MCRC1/4G433JT-RH	1/4	43 Kohm
MCRC1/4G513JT-RH	1/4	51 Kohm
MCRC1/4G563JT-RH	1/4	56 Kohm
MCRC1/4G683JT-RH	1/4	68 Kohm
MCRC1/4G753JT-RH	1/4	75 Kohm
MCRC1/4G823JT-RH	1/4	82 Kohm
MCRC1/4G104JT-RH	1/4	100 Kohm
MCRC1/4G114JT-RH	1/4	110 Kohm
MCRC1/4G124JT-RH	1/4	120 Kohm
MCRC1/4G154JT-RH	1/4	150 Kohm
MCRC1/4G164JT-RH	1/4	160 Kohm
MCRC1/4G204JT-RH	1/4	200 Kohm
MCRC1/4G224JT-RH	1/4	220 Kohm
MCRC1/4G274JT-RH	1/4	270 Kohm
MCRC1/4G304JT-RH	1/4	300 Kohm
MCRC1/4G334JT-RH	1/4	330 Kohm
MCRC1/4G394JT-RH	1/4	390 Kohm
MCRC1/4G434JT-RH	1/4	430 Kohm
MCRC1/4G474JT-RH	1/4	470 Kohm
MCRC1/4G473JT-RH	1/4	473 Kohm
MCRC1/4G514JT-RH	1/4	510 Kohm
MCRC1/4G564JT-RH	1/4	560 Kohm
MCRC1/4G684JT-RH	1/4	680 Kohm
MCRC1/4G914JT-RH	1/4	910 Kohm
MCRC1/4G105JT-RH	1/4	1 Mohm
MCRC1/4G115JT-RH	1/4	1.1 Mohm
MCRC1/4G125JT-RH	1/4	1.2 Mohm
MCRC1/4G155JT-RH	1/4	1.5 Mohm
MCRC1/4G165JT-RH	1/4	1.6 Mohm
MCRC1/4G185JT-RH	1/4	1.8 Mohm
MCRC1/4G205JT-RH	1/4	2.0 Mohm
MCRC1/4G225JT-RH	1/4	2.2 Mohm
MCRC1/4G245JT-RH	1/4	2.4 Mohm
MCRC1/4G275JT-RH	1/4	2.7 Mohm
MCRC1/4G305JT-RH	1/4	3.0 Mohm
MCRC1/4G365JT-RH	1/4	3.6 Mohm
MCRC1/4G395JT-RH	1/4	3.9 Mohm
MCRC1/4G435JT-RH	1/4	4.3 Mohm
MCRC1/4G475JT-RH	1/4	4.7 Mohm
MCRC1/4G515JT-RH	1/4	5.1 Mohm
MCRC1/4G565JT-RH	1/4	5.6 Mohm

ALL RIGHTS RESERVED. NO PORTION OF THIS PUBLICATION, WHETHER IN WHOLE OR IN PART CAN BE REPRODUCED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPC TECHNOLOGY.

SPC-F004.DWG

SIZE
A

DWG. NO.

TA-688

ELECTRONIC FILE

TA-688.DWG

REV
A

DOC. NO. SPC-F004 * Effective: 7/8/02 * DCP No: 1398

SCALE: NTS

U.O.M.: Millimeters

SHEET: 3 OF 7

Characteristics	Limits	Test Method																					
DC Resistance	DC resistance value must be within the specified tolerance.	DC resistance value measured at the test voltage specified below: <table border="1"> <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>100Ω 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	100Ω 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									
Nominal Resistance	DC test voltage																						
99Ω and lower	0.5V to 1V																						
100Ω 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																						
Resistance Temperature Characteristics	<table border="1"> <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> <tr> <td>1.1MΩ to 10MΩ</td> <td>20 to -3%</td> <td>10 to -7%</td> </tr> <tr> <td>11MΩ and over</td> <td>25 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%	1.1MΩ to 10MΩ	20 to -3%	10 to -7%	11MΩ and over	25 to -3%	10 to -7%	$\frac{R_2 - R_1}{R_1} \times 100(\%)$ <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																					
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%																					
1.1MΩ to 10MΩ	20 to -3%	10 to -7%																					
11MΩ and over	25 to -3%	10 to -7%																					
Voltage Coefficient (Application for 1KΩ min.)	A total resistance change of 2% maximum or chart below. <table border="1"> <thead> <tr> <th>Rated Power</th> <th>Coefficient Voltage</th> </tr> </thead> <tbody> <tr> <td>RC 1/4 W</td> <td>-0.035%/V</td> </tr> <tr> <td>RC 1/2 W</td> <td>-0.035%/V</td> </tr> <tr> <td>RC 1 W</td> <td>-0.02%/V</td> </tr> </tbody> </table>	Rated Power	Coefficient Voltage	RC 1/4 W	-0.035%/V	RC 1/2 W	-0.035%/V	RC 1 W	-0.02%/V	Instantaneous change in resistance per volt based on: $\frac{R - r}{r} \times \frac{100}{0.9 \times RCWV} (\% / V)$ <p>r=Resistance value at one-tenth RCWV R=Resistance value at RCWV</p>													
Rated Power	Coefficient Voltage																						
RC 1/4 W	-0.035%/V																						
RC 1/2 W	-0.035%/V																						
RC 1 W	-0.02%/V																						
Dielectric Withstanding Voltage	No evidence of flashover, mechanical damage, arcing or insulation breakdown.	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.																					
Insulation Resistance	10,000MΩ Min.	Resistors shall be clamped in the trough of a 90° metallic V-block and shall be measured at DC 100V for ¼ W and DC 500V for ½ W and 1W.																					
Temperature Cycling	±4% Max. with no evidence of mechanical damage.	Resistance change after continuous five cycles for duty cycle specified below. <table border="1"> <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																					
Humidity (Steady State)	±10% Max. with no evidence of mechanical damage.	Temporary resistance change after a 240 hours exposure in a humidity test chamber controlled at 40degree ±2C and 90 to 95% relative humidity.																					
Short Time Over load	±(2.5% + 0.05Ω) Maximum with no evidence of arcing, burning, or charring.	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.																					
Load Life in Humidity	±20% Max. with no evidence of mechanical damage.	500 hours exposure in a humidity test chamber controlled at 40°±2°C and 90 to 95% relative humidity.																					
Load Life	Resistance Change <table border="1"> <tbody> <tr> <td>Average</td> <td>± 6%</td> </tr> <tr> <td>Max.</td> <td>± 10%</td> </tr> </tbody> </table>	Average	± 6%	Max.	± 10%	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.																	
Average	± 6%																						
Max.	± 10%																						

ALL RIGHTS RESERVED. NO PORTION OF THIS PUBLICATION, WHETHER IN WHOLE OR IN PART CAN BE REPRODUCED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPC TECHNOLOGY.
SPC-F004.DWG

SIZE DWG. NO.

A

TA-688

ELECTRONIC FILE

TA-688.DWG

REV

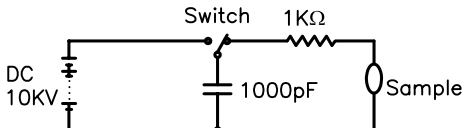
A

DOC. NO. SPC-F004 * Effective: 7/8/02 * DCP No: 1398

SCALE: NTS

U.O.M.: Millimeters

SHEET: 4 OF 7

Terminal Strength	$\pm(1\% + 0.05W)$ Max. with no evidence of mechanical damage.	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. 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.
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°±10°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 +0/-5°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 ±5°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 only over 820Kohm in 1/2W)	$\pm 10\%$ Max. with no evidence of mechanical damage.	In room temperature, 1350 VAC in 1 second or 1000 VAC in 1 minute shall be applied.
High Voltage Pulse (application for only 1/2W 3.3KΩ and over)	$\pm 50\%$ 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. 

ALL RIGHTS RESERVED. NO PORTION OF THIS PUBLICATION, WHETHER IN WHOLE OR IN PART CAN BE REPRODUCED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPC TECHNOLOGY.

SPC-F004.DWG

DOC. NO. SPC-F004 * Effective: 7/8/02 * DCP No: 1398

SIZE DWG. NO.

A

TA-688

ELECTRONIC FILE

TA-688.DWG

REV

A

SCALE: NTS

U.O.M.: Millimeters

SHEET: 5 OF 7

Application notes

Following consideration are needed because this resistors is consisted formed resistance element by mixing materials of carbon and resin system and fitted terminals molded into it then considerably influenced by humidity and temperature.

1. Soldering

If longtime soldering is made on the resistors at high temperature, they will be damaged and resistance value will change widely. Solder under following conditions.

- (1) Postion of soldering
Left leads 3mm at least from the body
- (2) Temperature and time of soldering
Flow method—temperature of solder bath: 250C max.
Dipping periods: 3 seconds max.
Soldering iron method— temperature of soldering iron: 350C max.
Soldering periods: 3 seconds max.

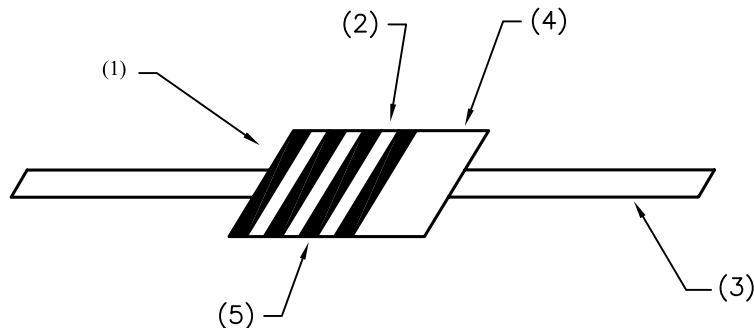
2. Long time storage

When stored at high temperature and high humidity for a longtime, resistance value will change due to absorption moisture. (5 to 8% in resistance value/ year).So following consideration are required.

- (1) Stored at better condition than 25 degree C, 40% RH
- (2) Keep first in first out based inventory control.

Construction and Materials

- (1) Solid resistive element
Resistance element consists of high purity and high stability electrochemical materials.
It has large cross section resulting in low current density and high overload capability.
- (2) Durable construction
The solid, integral structure combining lead, insulation, and hot—molding process provides exceptional strength, resistance to damage in a automatic handing machinery.
- (3) Solder plated Pb free leads
Soldered leads remain easy to solder and provide freedom from catastrophic failure in soldering process
- (4) Firmly embedded terminals
Rightly formed terminals are firmly embedded to provide a large contact area resulting excellent performances and high pull trength.
- (5) solvent proof color marking
Baked—on color code paints are resistance to solvents and also resist the abrasion and chipping.
They remain bright and easily readable even after long periods of use.



ALL RIGHTS RESERVED. NO PORTION OF THIS PUBLICATION, WHETHER IN WHOLE OR IN PART CAN BE REPRODUCED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPC TECHNOLOGY.

SPC-F004.DWG

SIZE DWG. NO.

A

TA-688

ELECTRONIC FILE

TA-688.DWG

REV

A

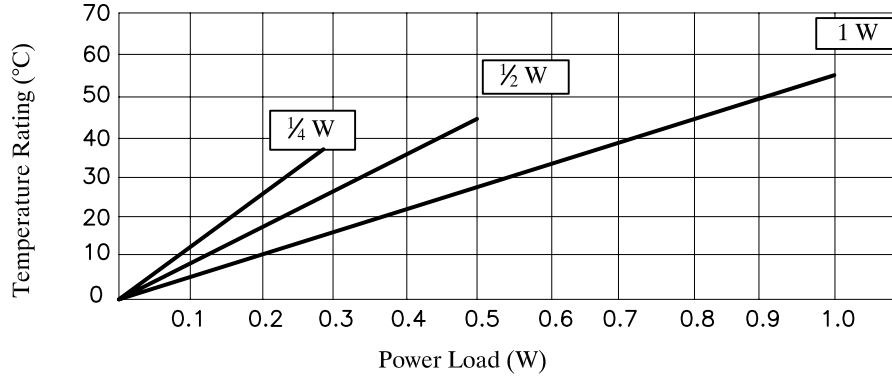
DOC. NO. SPC-F004 * Effective: 7/8/02 * DCP No: 1398

SCALE: NTS

U.O.M.: Millimeters

SHEET: 6 OF 7

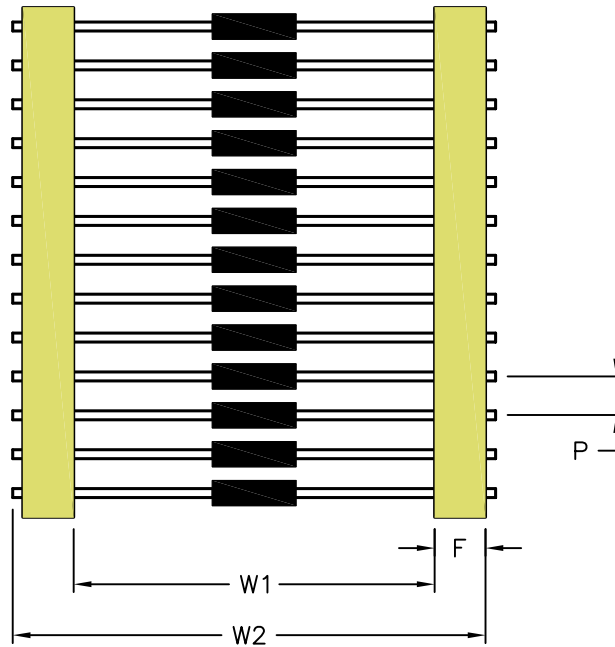
High-Spot Temperature Due to Rate of Power Dissipation



Taping and Packaging

Taping Dimension

Power	Taping Dimensions				
	P	50 x P	W1	W2	F
1/4 W	5±0.5	254±2	52±1	66 max.	6±1
1/2 W	5±0.5	254±2	52±1	66 max.	6±1



Packaging

Power	Packaging	Quantity	Box size
1/4 W	Ammo box	2,000 pcs	70x55x260mm
1/2 W	Ammo box	1,000 pcs	70x55x260mm
1 W	Bulk	500 pcs	90x90x150mm