

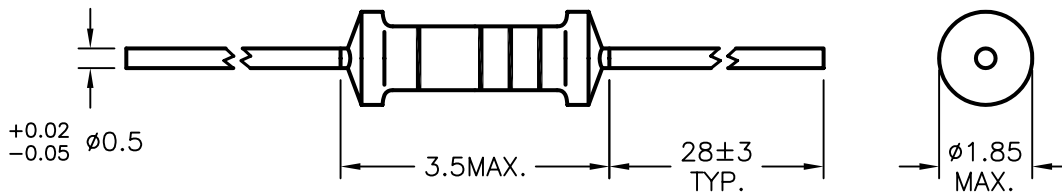
DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
1861	A	RELEASED	EYO	11/01/05	HO	11/2/05	JWM	10/31/05



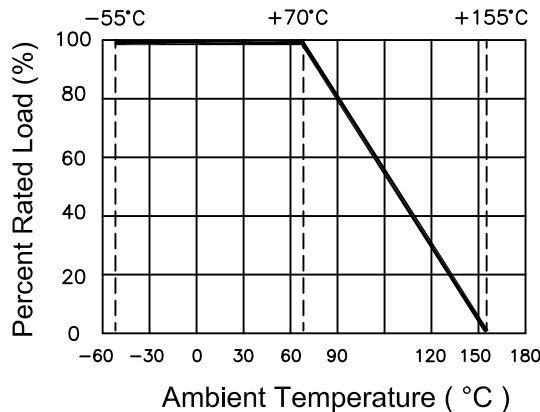
Layer Name	Material
Basic Body	Rod Type Ceramics
Resistance Film	Carbon Film
End Cap	Steel (Tin plated iron surface)
Lead Wire	Annealed copper wire (Electrosolder plated surface) Pb Free
Joint	By Welding
Coating	Insulated resin ( Color : Beige )
Color Code	Epoxy Resin

**SPECIFICATIONS:**

- Rating Wattage: 0.125W @ 70°C
- Working Voltage: 200V Max.
- Overloaded Voltage: 400V Max.
- Dielectric Withstanding Voltage: 400V
- Rated Ambient Temp.: 70°C
- Operating Temp. Range : -55°C ~ +155°C
- Resistance Tolerance: ±5%
- Resistance Range: (See Part Table)



**Derating Curve**



SPC-F004.DWG

TOLERANCES: UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.	DRAWN BY:	DATE:	DRAWING TITLE:			
	EKLAS ODISH	11/01/05	RoHS Compliant Carbon Film Resistors, 1/8W, 5%			
	CHECKED BY:	DATE:	SIZE	DWG. NO.	ELECTRONIC FILE	REV
	HISHAM ODISH	11/2/05	A	TA-671	TA-671.DWG	A
	APPROVED BY:	DATE:	SCALE: NTS		U.O.M.: Millimeters	SHEET: 1 OF 3
JEFF MCVICKER	10/31/05					

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.

Characteristics	Limits		Test Methods (JIS C 5201-1)															
DC. Resistance	Must be within the specified tolerance		5.1 The limit of error of measuring apparatus shall not exceed allowable range or 5% of resistance tolerance															
Temperature coefficient	Resist. Range	T.C.R (PPM/°C)	5.2 Natural resistance change per temp. degree centigrade. $\frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^6 \text{ (PPM/°C)}$ R <sub>1</sub> : Resistance value at room temperature (t <sub>1</sub> ) R <sub>2</sub> : Resistance value at room temp. plus 100°C (t <sub>2</sub> )															
	≤10Ω	0 ±350																
	11Ω 99K	0 -450																
	100K 1M	0 -700																
	1.1M 10M	0 -1500																
Short time overload	Resistance change rate is ±(1% +0.05Ω) Max. with no evidence of mechanical damage.		5.5 Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds															
Insulation Resistance	Insulation resistance is 10,000 MΩ Min		5.6 Resistors shall be clamped in the trough of a 90° metallic V-block and shall be tested at DC potential respectively specified in above list for 60+10/-0 seconds															
Dielectric withstanding voltage	No evidence of flashover mechanical damage, arcing or insulation breakdown.		5.7 Resistors shall be clamped in the trough of a 90° metallic V-block and shall be tested at AC potential respectively specified in table '1'. for 60+10/-0 seconds															
Terminal strength	No evidence of mechanical damage.		6.1 Direct load: Resistance to a 2.5 kgs direct load for 10 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 about 6mm from the body of the resistor and shall be rotated through 360° about the original axis of the bent terminal in alternating directions for a total of 3 rotations.															
Resistance to soldering heat	Resistance change rate is ±(1% +0.05Ω) Max. with no evidence of mechanical damage.		6.4 Permanent resistance change when leads immersed to 3.2 to 4.8mm from the body in 350°C ±10°C solder for 3 ±0.5 seconds.															
Solderability	95% coverage Min.		6.5 The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes. Test temperature of solder: 245°C ±3°C Dwell time in solder: 2-3 seconds															
Temperature cycling	Resistance change rate is ±(1% +0.05Ω) Max. with no evidence of mechanical damage.		7.4 Resistance change after continuous five cycles for duty shown below : <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55°C ±3°C</td> <td>30</td> </tr> <tr> <td>2</td> <td>Room Temp.</td> <td>10 ~ 15</td> </tr> <tr> <td>3</td> <td>+155°C ±2°C</td> <td>30</td> </tr> <tr> <td>4</td> <td>Room Temp.</td> <td>10 ~ 15</td> </tr> </tbody> </table>	Step	Temperature	Time (min)	1	-55°C ±3°C	30	2	Room Temp.	10 ~ 15	3	+155°C ±2°C	30	4	Room Temp.	10 ~ 15
Step	Temperature	Time (min)																
1	-55°C ±3°C	30																
2	Room Temp.	10 ~ 15																
3	+155°C ±2°C	30																
4	Room Temp.	10 ~ 15																
Load life in humidity	Resistance Value		7.9 Resistance change after 1,000 hours operating at RCWV with duty cycle of (1.5 hours "ON", 0.5 hour "OFF" ) in a humidity test chamber controlled at 40°C±2°C and 90 to 95% relative humidity.															
	Normal type	ΔR/R																
	Less than 100KΩ	±3%																
	100KΩ or more	±5%																
Load life	Resistance Value		7.10 Permanent resistance change after 1,000 hours operating at * RCWV with duty cycle of 1.5 hours "on", 0.5 hour "off" at 70°C ±2°C ambient.															
	Normal type	ΔR/R																
	Less than 56KΩ	±2%																
	56KΩ or more	±3%																

\*RCWV = Rated Continuous Working Voltage =  $\sqrt{\text{Rated Power} \times \text{Resistance Value}}$

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-671

ELECTRONIC FILE

TA-671.DWG

REV

A

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

SCALE: NTS

U.O.M.: Millimeters

SHEET: 2 OF 3

Multicomp P/N #	Resistance
MCCFROW8J050JA20	0.5 ohm
MCCFROW8J010JA20	1 ohm
MCCFROW8J011JA20	1.1 ohm
MCCFROW8J012JA20	1.2 ohm
MCCFROW8J013JA20	1.3 ohm
MCCFROW8J015JA20	1.5 ohm
MCCFROW8J016JA20	1.6 ohm
MCCFROW8J018JA20	1.8 ohm
MCCFROW8J020JA20	2 ohm
MCCFROW8J022JA20	2.2 ohm
MCCFROW8J024JA20	2.4 ohm
MCCFROW8J027JA20	2.7 ohm
MCCFROW8J030JA20	3 ohm
MCCFROW8J033JA20	3.3 ohm
MCCFROW8J036JA20	3.6 ohm
MCCFROW8J039JA20	3.9 ohm
MCCFROW8J043JA20	4.3 ohm
MCCFROW8J047JA20	4.7 ohm
MCCFROW8J051JA20	5.1 ohm
MCCFROW8J056JA20	5.6 ohm
MCCFROW8J062JA20	6.2 ohm
MCCFROW8J068JA20	6.8 ohm
MCCFROW8J075JA20	7.5 ohm
MCCFROW8J082JA20	8.2 ohm
MCCFROW8J091JA20	9.1 ohm
MCCFROW8J0100A20	10 ohm
MCCFROW8J0110A20	11 ohm
MCCFROW8J0120A20	12 ohm
MCCFROW8J0130A20	13 ohm
MCCFROW8J0150A20	15 ohm
MCCFROW8J0160A20	16 ohm
MCCFROW8J0180A20	18 ohm
MCCFROW8J0200A20	20 ohm
MCCFROW8J0220A20	22 ohm
MCCFROW8J0240A20	24 ohm
MCCFROW8J0270A20	27 ohm
MCCFROW8J0300A20	30 ohm
MCCFROW8J0330A20	33 ohm
MCCFROW8J0360A20	36 ohm
MCCFROW8J0390A20	39 ohm
MCCFROW8J0430A20	43 ohm
MCCFROW8J0470A20	47 ohm
MCCFROW8J0510A20	51 ohm
MCCFROW8J0560A20	56 ohm
MCCFROW8J0620A20	62 ohm
MCCFROW8J0680A20	68 ohm
MCCFROW8J0750A20	75 ohm
MCCFROW8J0820A20	82 ohm
MCCFROW8J0910A20	91 ohm
MCCFROW8J0101A20	100 ohm
MCCFROW8J0111A20	110 ohm
MCCFROW8J0121A20	120 ohm
MCCFROW8J0131A20	130 ohm
MCCFROW8J0151A20	150 ohm
MCCFROW8J0161A20	160 ohm
MCCFROW8J0181A20	180 ohm
MCCFROW8J0201A20	200 ohm

Multicomp P/N #	Resistance
MCCFROW8J0221A20	220 ohm
MCCFROW8J0241A20	240 ohm
MCCFROW8J0271A20	270 ohm
MCCFROW8J0301A20	300 ohm
MCCFROW8J0331A20	330 ohm
MCCFROW8J0361A20	360 ohm
MCCFROW8J0391A20	390 ohm
MCCFROW8J0431A20	430 ohm
MCCFROW8J0471A20	470 ohm
MCCFROW8J0511A20	510 ohm
MCCFROW8J0561A20	560 ohm
MCCFROW8J0621A20	620 ohm
MCCFROW8J0681A20	680 ohm
MCCFROW8J0751A20	750 ohm
MCCFROW8J0821A20	820 ohm
MCCFROW8J0911A20	910 ohm
MCCFROW8J0102A20	1 kohm
MCCFROW8J0122A20	1.2 kohm
MCCFROW8J0132A20	1.3 kohm
MCCFROW8J0152A20	1.5 kohm
MCCFROW8J0162A20	1.6 kohm
MCCFROW8J0182A20	1.8 kohm
MCCFROW8J0202A20	2 kohm
MCCFROW8J0222A20	2.2 kohm
MCCFROW8J0242A20	2.4 kohm
MCCFROW8J0272A20	2.7 kohm
MCCFROW8J0302A20	3 kohm
MCCFROW8J0332A20	3.3 kohm
MCCFROW8J0362A20	3.6 kohm
MCCFROW8J0392A20	3.9 kohm
MCCFROW8J0432A20	4.3 kohm
MCCFROW8J0472A20	4.7 kohm
MCCFROW8J0512A20	5.1 kohm
MCCFROW8J0562A20	5.6 kohm
MCCFROW8J0622A20	6.2 kohm
MCCFROW8J0682A20	6.8 kohm
MCCFROW8J0752A20	7.5 kohm
MCCFROW8J0822A20	8.2 kohm
MCCFROW8J0912A20	9.1 kohm
MCCFROW8J0103A20	10 kohm
MCCFROW8J0113A20	11 kohm
MCCFROW8J0123A20	12 kohm
MCCFROW8J0133A20	13 kohm
MCCFROW8J0153A20	15 kohm
MCCFROW8J0163A20	16 kohm
MCCFROW8J0183A20	18 kohm
MCCFROW8J0203A20	20 kohm
MCCFROW8J0223A20	22 kohm
MCCFROW8J0243A20	24 kohm
MCCFROW8J0273A20	27 kohm
MCCFROW8J0303A20	30 kohm
MCCFROW8J0333A20	33 kohm
MCCFROW8J0363A20	36 kohm
MCCFROW8J0393A20	39 kohm
MCCFROW8J0433A20	43 kohm
MCCFROW8J0473A20	47 kohm
MCCFROW8J0513A20	51 kohm

Multicomp P/N #	Resistance
MCCFROW8J0563A20	56 kohm
MCCFROW8J0623A20	62 kohm
MCCFROW8J0683A20	68 kohm
MCCFROW8J0753A20	75 kohm
MCCFROW8J0823A20	82 kohm
MCCFROW8J0913A20	91 kohm
MCCFROW8J0104A20	100 kohm
MCCFROW8J0114A20	110 kohm
MCCFROW8J0124A20	120 kohm
MCCFROW8J0134A20	130 kohm
MCCFROW8J0154A20	150 kohm
MCCFROW8J0164A20	160 kohm
MCCFROW8J0184A20	180 kohm
MCCFROW8J0204A20	200 kohm
MCCFROW8J0224A20	220 kohm
MCCFROW8J0244A20	240 kohm
MCCFROW8J0274A20	270 kohm
MCCFROW8J0304A20	300 kohm
MCCFROW8J0334A20	330 kohm
MCCFROW8J0364A20	360 kohm
MCCFROW8J0394A20	390 kohm
MCCFROW8J0434A20	430 kohm
MCCFROW8J0474A20	470 kohm
MCCFROW8J0514A20	510 kohm
MCCFROW8J0564A20	560 kohm
MCCFROW8J0624A20	620 kohm
MCCFROW8J0684A20	680 kohm
MCCFROW8J0754A20	750 kohm
MCCFROW8J0824A20	820 kohm
MCCFROW8J0914A20	910 kohm
MCCFROW8J0105A20	1 Mohm
MCCFROW8J0115A20	1.1 Mohm
MCCFROW8J0125A20	1.2 Mohm
MCCFROW8J0135A20	1.3 Mohm
MCCFROW8J0155A20	1.5 Mohm
MCCFROW8J0165A20	1.6 Mohm
MCCFROW8J0185A20	1.8 Mohm
MCCFROW8J0205A20	2 Mohm
MCCFROW8J0225A20	2.2 Mohm
MCCFROW8J0245A20	2.4 Mohm
MCCFROW8J0275A20	2.7 Mohm
MCCFROW8J0335A20	3.3 Mohm
MCCFROW8J0365A20	3.6 Mohm
MCCFROW8J0395A20	3.9 Mohm
MCCFROW8J0435A20	4.3 Mohm
MCCFROW8J0475A20	4.7 Mohm
MCCFROW8J0515A20	5.1 Mohm
MCCFROW8J0565A20	5.6 Mohm
MCCFROW8J0625A20	6.2 Mohm
MCCFROW8J0685A20	6.8 Mohm
MCCFROW8J0755A20	7.5 Mohm
MCCFROW8J0825A20	8.2 Mohm
MCCFROW8J0915A20	9.1 Mohm
MCCFROW8J0106A20	10 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 DWG. NO.

A

TA-671

ELECTRONIC FILE

TA-671.DWG

REV

A

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

SCALE: NTS

U.O.M.: Millimeters

SHEET: 3 OF 3