multicomp

REVISIONS								
DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
1861	A	RELEASED	EYO	10/31/05	HO	10/31/05	JWM	10/31/05
1995	B	Parts Added	JN	01/08/09	JN	01/08/09	JN	01/08/09

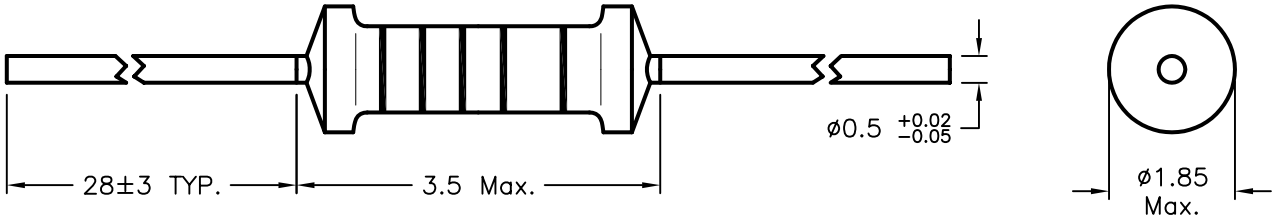
DOC. NO. SPC-F004 * Effective: 7/8/02 * DCP No: 1398

RoHS Compliant

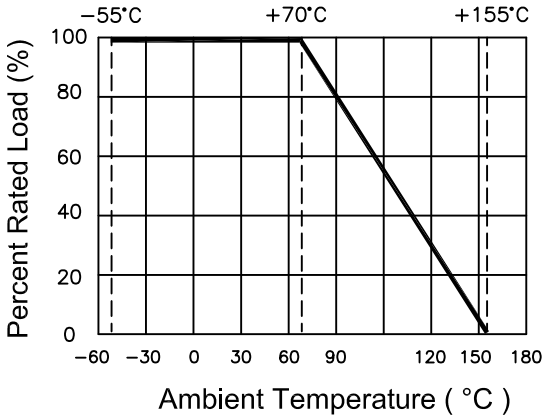
Layer Name	Material
Basic Body	Rod Type Ceramics
Resistance Film	Metal Film
End Cap	Steel (Tin plated iron surface)
Lead Wire	Annealed copper wire (Electrosolder plated surface) Pb Free
Joint	By Welding
Coating	Insulated resin (Color : Sky blue)
Color Code	Epoxy Resin

GENERAL SPECIFICATIONS:

- Rating Wattage @ 70°C: 0.125W
- Dielectric Withstanding Voltage: 400V
- Maximum Working Voltage: 200V
- Maximum Overload Voltage: 400V
- Tolerance: ±1%
- T.C.R.: ±50PPM/°C
- Resistance Range: (See parts table)
- Rated Ambient Temp.: 70°C
- Operating Temp. Range: −55°C to +155°C



Derating Curve



SPC-F004.DWG

TOLERANCES:	DRAWN BY:	DATE:
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.	EKLAS ODISH	10/31/05
	CHECKED BY:	DATE:
	HISHAM ODISH	10/31/05
	APPROVED BY:	DATE:
	JEFF MCVICKER	10/31/05

DRAWING TITLE: RoHS Compliant Precision Metal Film Resistors, 1/8 W, 1%

SIZE	DWG. NO.	ELECTRONIC FILE	REV
A	TA-667	TA-667.DWG	B

SCALE: NTS | U.O.M.: MILLIMETERS | SHEET: 1 OF 3

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 1% of resistance tolerance
Temperature coefficient	Within the temperature coefficient specified below: ±50 PPM/°C Maximum	5.2 Natural resistance change per temp. degree centigrade. $\frac{R_2-R_1}{R_1(t_2-t_1)} \times 10^6$ (PPM/°C) R_1: Resistance value at room temperature (t_1) R_2: Resistance value at room temp. plus 100°C (t_2)
Short time overload	Resistance change rate is ±(0.5% +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
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 sheet '1'. for 60+10/-0 seconds
Pulse overload	Resistance change rate is ±(1% +0.05Ω) Max. with no evidence of mechanical damage.	5.8 Resistance change after 10,000 cycles (1 second "ON", 25 seconds "OFF") at 4 times * RCWV.
Terminal strength	No evidence of mechanical damage.	6.1Direct 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
Resistance to solvent	No deterioration of protective coating and markings.	6.9 Specimens shall be immersed in a bath of trichroethane completely for 3 mins with ultrasonic.
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 : 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 / ΔR/R Normal type / ±1.5%	7.9 Resistance change after 1,000 hours (1.5 hours "ON, 0.5 hour "OFF") at * RCWV in humidity test chamber controlled at 40°C±2°C and 90 to 95% relative humidity.
Load life	Resistance Value / ΔR/R Normal type / ±1.5%	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.

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

Mfg. P/N	Resistance
MCMF0W8FF100JA20	10 ohm
MCMF0W8FF1000A20	100 ohm
MCMF0W8FF1001A20	1 kohm
MCMF0W8FF1002A20	10 kohm
MCMF0W8FF1003A20	100 kohm
MCMF0W8FF1004A20	1 Mohm
MCMF0W8FF110JA20	11 ohm
MCMF0W8FF1100A20	110 ohm
MCMF0W8FF1102A20	11 kohm
MCMF0W8FF120JA20	12 ohm
MCMF0W8FF1200A20	120 ohm
MCMF0W8FF1202A20	12 kohm
MCMF0W8FF1203A20	120 kohm
MCMF0W8FF130JA20	13 ohm
MCMF0W8FF1300A20	130 ohm
MCMF0W8FF150JA20	15 ohm
MCMF0W8FF1500A20	150 ohm
MCMF0W8FF1502A20	15 kohm
MCMF0W8FF1503A20	150 kohm
MCMF0W8FF160JA20	16 ohm
MCMF0W8FF1600A20	160 ohm
MCMF0W8FF180JA20	18 ohm
MCMF0W8FF1800A20	180 ohm
MCMF0W8FF1802A20	18 kohm
MCMF0W8FF1803A20	180 kohm
MCMF0W8FF200JA20	20 ohm
MCMF0W8FF2000A20	200 ohm
MCMF0W8FF220JA20	22 ohm
MCMF0W8FF2200A20	220 ohm
MCMF0W8FF2202A20	22 kohm
MCMF0W8FF2203A20	220 kohm
MCMF0W8FF240JA20	24 ohm
MCMF0W8FF2400A20	240 ohm
MCMF0W8FF2402A20	24 kohm
MCMF0W8FF270JA20	27 ohm
MCMF0W8FF2700A20	270 ohm
MCMF0W8FF2702A20	27 kohm
MCMF0W8FF2703A20	270 kohm
MCMF0W8FF300JA20	30 ohm
MCMF0W8FF3000A20	300 ohm
MCMF0W8FF330JA20	33 ohm
MCMF0W8FF3300A20	330 ohm
MCMF0W8FF3302A20	33 kohm
MCMF0W8FF3303A20	330 kohm
MCMF0W8FF360JA20	36 ohm
MCMF0W8FF3600A20	360 ohm
MCMF0W8FF390JA20	39 ohm

Mfg. P/N	Resistance
MCMF0W8FF3900A20	390 ohm
MCMF0W8FF3902A20	39 kohm
MCMF0W8FF3903A20	390 kohm
MCMF0W8FF430JA20	43 ohm
MCMF0W8FF4300A20	430 ohm
MCMF0W8FF470JA20	47 ohm
MCMF0W8FF4700A20	470 ohm
MCMF0W8FF4702A20	47 kohm
MCMF0W8FF4703A20	470 kohm
MCMF0W8FF510JA20	51 ohm
MCMF0W8FF5100A20	510 ohm
MCMF0W8FF560JA20	56 ohm
MCMF0W8FF5600A20	560 ohm
MCMF0W8FF5602A20	56 kohm
MCMF0W8FF5603A20	560 kohm
MCMF0W8FF680JA20	68 ohm
MCMF0W8FF6800A20	680 ohm
MCMF0W8FF6802A20	68 kohm
MCMF0W8FF6803A20	680 kohm
MCMF0W8FF750JA20	75 ohm
MCMF0W8FF820JA20	82 ohm
MCMF0W8FF8200A20	820 ohm
MCMF0W8FF8202A20	82 kohm
MCMF0W8FF8203A20	820 Kohm
MCMF0W8FF910JA20	91 ohm
MCMF0W8FF1101A20	1.1 kohm
MCMF0W8FF1103A20	110 kohm
MCMF0W8FF1201A20	1.2 kohm
MCMF0W8FF1301A20	1.3 kohm
MCMF0W8FF1302A20	13 kohm
MCMF0W8FF1303A20	130 kohm
MCMF0W8FF1501A20	1.5 kohm
MCMF0W8FF1601A20	1.6 kohm
MCMF0W8FF1602A20	16 kohm
MCMF0W8FF1603A20	160 kohm
MCMF0W8FF1801A20	1.8 kohm
MCMF0W8FF2001A20	2 kohm
MCMF0W8FF2002A20	20 kohm
MCMF0W8FF2003A20	200 kohm
MCMF0W8FF2201A20	2.2 kohm
MCMF0W8FF2401A20	2.4 kohm
MCMF0W8FF2403A20	240 kohm
MCMF0W8FF2701A20	2.7 kohm
MCMF0W8FF3001A20	3 kohm
MCMF0W8FF3002A20	30 kohm
MCMF0W8FF3003A20	300 kohm
MCMF0W8FF3301A20	3.3 kohm

Mfg. P/N	Resistance
MCMF0W8FF3601A20	3.6 kohm
MCMF0W8FF3602A20	36 kohm
MCMF0W8FF3603A20	360 kohm
MCMF0W8FF3901A20	3.9 kohm
MCMF0W8FF4301A20	4.3 kohm
MCMF0W8FF4302A20	43 kohm
MCMF0W8FF4303A20	430 kohm
MCMF0W8FF4701A20	4.7 kohm
MCMF0W8FF5101A20	5.1 kohm
MCMF0W8FF5102A20	51 kohm
MCMF0W8FF5103A20	510 kohm
MCMF0W8FF5601A20	5.6 kohm
MCMF0W8FF620JA20	62 ohm
MCMF0W8FF6200A20	620 ohm
MCMF0W8FF6201A20	6.2 kohm
MCMF0W8FF6202A20	62 kohm
MCMF0W8FF6203A20	620 kohm
MCMF0W8FF6801A20	6.8 kohm
MCMF0W8FF7500A20	750 ohm
MCMF0W8FF7501A20	7.5 kohm
MCMF0W8FF7502A20	75 kohm
MCMF0W8FF7503A20	750 kohm
MCMF0W8FF8201A20	8.2 kohm
MCMF0W8FF9100A20	910 ohm
MCMF0W8FF9101A20	9.1 kohm
MCMF0W8FF9102A20	91 kohm
MCMF0W8FF9103A20	910 kohm
MCMF0W8FF1302A20	13kohm
MCMF0W8FF2001A20	2kohm
MCMF0W8FF2201A20	2.2kohm
MCMF0W8FF2701A20	2.7kohm
MCMF0W8FF4301A20	4.3kohm
MCMF0W8FF4701A20	4.7kohm
MCMF0W8FF5101A20	5.1kohm
MCMF0W8FF5601A20	5.6kohm
MCMF0W8FF620JA20	62ohm

SPC-F004.DWG

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SIZE	DWG. NO.	ELECTRONIC FILE	REV
A	TA-667	TA-667.DWG	B

SCALE: NTS	U.O.M.: Millimeters	SHEET: 3 OF 3