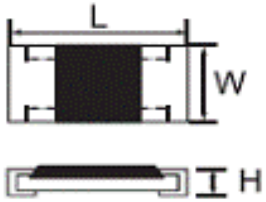
EDCON-COMPONENTS



EDCON COMPONENTS
A MEMBER OF EDCON-GROUP

Thick Film Chip Resistor Tolerance 1%

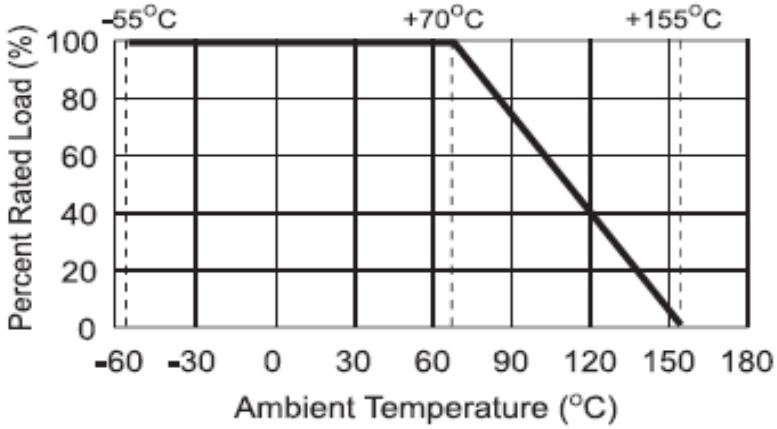
Performance Specifications

Temperature Coeffizient	1Ω ~ 10Ω +/-400PPM/°C 11Ω ~ 100Ω +/-100PPM/°C >100Ω +/-100PPM/°C
Short Time Overlaod	5% +/-2,0% +0,1Ωmax.
Insulation Resistance:	Min 1000Mega Ω
Dielectric Withstanding Voltage	No evidence of Flashover, mechanical damage, arcing or insulation breackdown
Terminal Bending	.+/-(1,0% +0,05Ω) max.
Soldering Heat	Resistance change rate is +/-(1% + 0,05Ω)max.
Solderability	Min. 95% coverage
Temperature Cycling	.+/-5% : +/-(1,0% + 0,05Ω) max.
Humidity (Steady State)	.+/-5% : +/-(3,0% + 0,01Ω) max.
Load Life in Humidity	.+/-5% : +/-(3,0% + 0,01Ω) max.
Load Life	.+/-5% : +/-(3,0% + 0,01Ω) max.
Standard Operating Temperature	. -55°c ~ +155°C
Tolerance Informations	E24 Series 2% / 5% / 10%

Features

Small Size and light weight
Suitable for both flow and reflow soldering
Reduction of assembly costs

Dearting Curve



Test Methods of JIS 5201-1

Flame Retardant: (JIS 5201-1 7.12)	Resistor shall resist flamming or arcing when overloaded up to 16 times RCWV or max. RCWV whichever is lesser. Lit burner and adjust to procedure a blue flame 38mm in height & a max. 127mm flame from the burner tube. Resistor is supported from ist lead at 45°C from the horizontal so that the lower end of resistor is on the top of blue flame. The resistor is placed on this test flame for 15sec. Keep cool for 15sec. Repeat this procedure for 5 times.

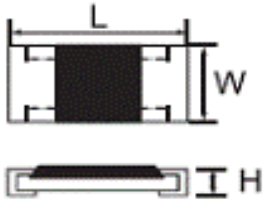
CHIP Resistor Size 0603 Tol. 1%

Part No.: **X30021**

DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	10.04.2009
APPD:	Schumi			FINISH	Jamy		Sheet No.		1 from 6

Customer:

EDCON-COMPONENTS



EDCON COMPONENTS
A MEMBER OF EDCON-GROUP

Test Method of JIS C 5201-1 Thick Film Chip Resistor Tolerance 1%

Temperature Coefficient (JIS C 5201-1 4.8)	Natural Resistance change per temperature degree centigrade R1: Resistance value at room temperature (t1) R2: Resistance value at room temperature plus 100°C (t2) Test pattern: Room temperature (t1), Room temperature +100°C (t2)
Short time overload (JIS C5201-1 4.13)	Permanent resistance change after application of a potential of 2,5 times RCWV for 5sec.
Insulation resistance (JIS-C 5201-1 4.6)	Apply 500VDC between protective coating and termination for 1min. Then measure 100V DC specially for resistor network.
Dielectric Withstanding Voltage (Voltage proof) (JIS-C 5201-1 4.7)	Resistors shall be clamped in the method use a metal foil shall be wrapped closely around the body of the resistor. After that shall be tested at AC potentialrespectively specified in the given list of each product type for 60 +10/0 secs. For cement fixed resistors, the testing voltage is 1000Volts. For Chip resistors, testing voltage is 500 Volts.
Pulse Overload (JIS-5202 5.8)	Resistance change after 10.000 cycles (1sec "ON", 25sec "OFF") at 4times of RCWV or maximum overload:
Terminal Strength (JIS-5201-1 4.16)	**Direct Load**: Resistance to a 2,5Kgs.. Direct load for 10sec in a direction of the longitudinal axis of terminals leads. **Twist Test.** Terminal leads shall be bent trough 90° at the point of about 6mm grom the body of the resistor and shall be rotated trough 360° about the original axis of the bent terminal in alternating direction for a total of 3 rotations.
Terminal Strength (JIS-5201-1 4.16)	(Applicable for Resistor Network) Tensile: 1KG., 30sec., Bending: 500g, 2 times
Terminal Strength (JIS-5201-1 4.33)	(Applicable for CHIP Resistors) Twist of the test board: X/Y = 3/90mm for 10sec.
Vibration (JIS-5201-1 4.22)	X, Y, Z, each direction 2 hours, 10~55 ~ 10Hz / min. All amplitude 1,5mm
Soldering Heat (JISC 5201-1 4.18)	(Applicable for Chip Resistors) Dip the resistor into a solder bath having a temper. of 260 +/-5°C and hold it for 10 +/-1sec. **Lead(Pb) free temp**.:260 +/-3°C, 5 + 1/-0sec.
Resistance to Soldering Heat (JISC 5201-1 4.18)	Permanent Resistance change when leads immersed to a point 2.0 ~ 2,5mm from the body in 350 +/-10°C solder for 3-4 sec. **Lead (Pb) free temper**.: 260 +/-3°C, 5 + 1/-0sec.
Solderability (JISC 5201-1 4.17)	The area covered with a new, smooth clean , shiny and continious surface free from concentrated pinholes. Test temperature of solder: 235 +/-5°C; Dwell time in solder: 3~5sec. **Lead (PB) free temper.:** 245 +/-3°C; Dwell time in solder: 2~3sec.
Resistance to solvent (JIS5201-1 4.29 /4.30)	Specimens shall be immersed in a bath of alcohol completely for 3min. Using ultrasonic test equipment.
Thermal Shock (JIOS 5201-1 4.21)	(Applicable fir Resistor Network) Load V, rom temperature, 30min. Unload, -55°C, 15min. Over 2 hours in room temp. Before measuring.
Rapid Change Temperature: (JIS 5201-1 4.19)	Resistance change after continious 5cycles for duty cycle specified below: **Step1**: 30min.at -55 +/-3°C / **Step2**: 10~15min. At room temeprature. **Step3:** 30min. At 155 +/-2°C. **Step4:** 10~15min. At room temeprature.
Humidity (Steady Style) (JIS 5201-1 4.24)	Temporary resistance change after 240hours exposure in a humidity test chamber controlled at 40 +/-2°C and 50-95% relative humidity.
Load Life in Humidity (JIS 5201-1 7.9)	Resistance change after 1000hrs. (1,5hrs "ON", 0,5hrs "OFF" at RCWV or max. RCWV whichever is lesser in a humidity test chamber controlled at 40 +/-2°C and 90 ~ 95% relative humidity.
Load Life (JIS 5201-1 25.1)	Permanent Resistance change after 1000hours operating at RCWV or max. RCWV whichever is lesser, with duty cycles of 1,5hours "ON" 0,5hours "OFF" at 70 +/-2°C ambient.

CHIP Resistor Size 0603 Tol. 1%

Part No.: **X30021**

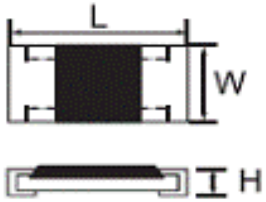
DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	10.04.2009
APPD:	Schumi			FINISH	Jamy		Sheet No.		2 from 6

Customer:

www.edcon-components.com

email: info@edcon-components.com

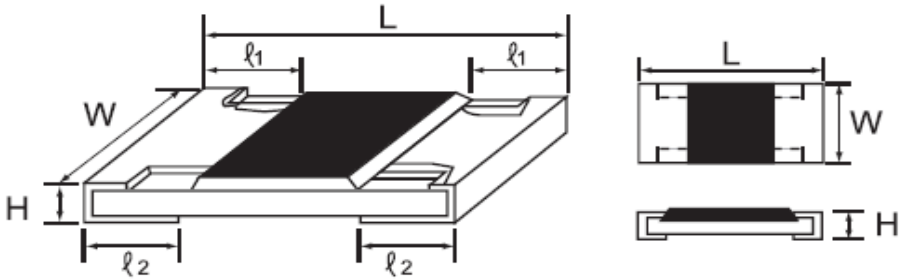
EDCON-COMPONENTS



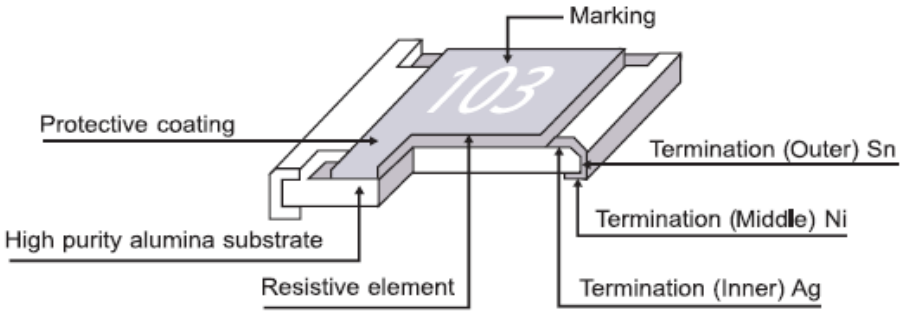
EDCON COMPONENTS
A MEMBER OF EDCON-GROUP

Thick Film Chip Resistor Tolerance 1%

Technical Dimensions



Physical Structure



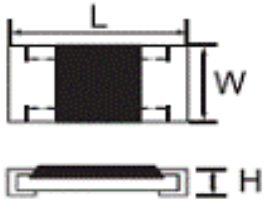
Size	Power Rating at 70°C	Max. Working Voltage	Max. Overload Voltage	Dielectric Withstanding Voltage	Tolerance %	Resistance Range	Dimensions (mm)				
							L	W	H	ℓ1	ℓ2
0603 (1608)	1/10W	50V	100V	300V	.+/-1%	10Ω ~ 1MΩ	1,60 +/-0,10	0,80 +/-0,15	0,45 +/-0,10	0,30 +/-0,20	0,30 +/-0,20

CHIP Resistor Size 0603 Tol. 1%

Part No.: **X30021**

DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	10.04.2009	Customer:
APPD:	Schumi			FINISH	Jamy		Sheet No.		3 from 6	

www.edcon-components.com
email: info@edcon-components.com



EDCON COMPONENTS
A MEMBER OF EDCON-GROUP

Thick Film Chip Resistor Tolerance 1%

Range Table Row E96 included (E24 dark marking)

Multiplier Code

Code	A	B	C	D	E	F	G	H	X	Y	Z
Multiplier	10x0	10x1	10x2	10x3	10x4	10x5	10x6	10x7	10x-1	10x-2	10x-3

Ω	Code
100	01
102	02
105	03
107	04
110	05
113	06
115	70
118	80
121	09
124	10
127	11
130	12
133	13
137	14
140	15
143	16
147	17
150	18
154	19
158	20

Ω	Code
162	21
165	22
169	23
174	24
178	25
182	26
187	27
191	28
196	29
200	30
205	31
210	32
215	33
221	34
226	35
232	36
237	37
243	38
249	39
255	40

Ω	Code
261	41
267	42
274	43
280	44
287	45
294	46
301	47
209	48
316	49
324	50
332	51
340	52
348	53
357	54
365	55
374	56
383	57
392	58
402	59
412	60

Ω	Code
422	61
432	62
442	63
453	64
464	65
475	66
487	67
499	68
511	69
523	70
536	71
549	72
562	73
576	74
590	75
604	76
619	77
634	78
649	79
665	80

Ω	Code
681	81
698	82
715	83
732	84
750	85
768	86
787	87
806	88
825	89
845	90
866	91
887	92
909	93
931	94
953	95
976	96

92B = 887 x 10x1 = 8,87KΩ

13X = 133 x 10-1 = 13,3Ω

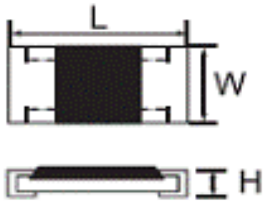
CHIP Resistor Size 0603
Tol. 1%

Part No.: **X30021**

DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	10.04.2009
APPD:	Schumi			FINISH	Jamy		Sheet No.		4 from 6

Customer:

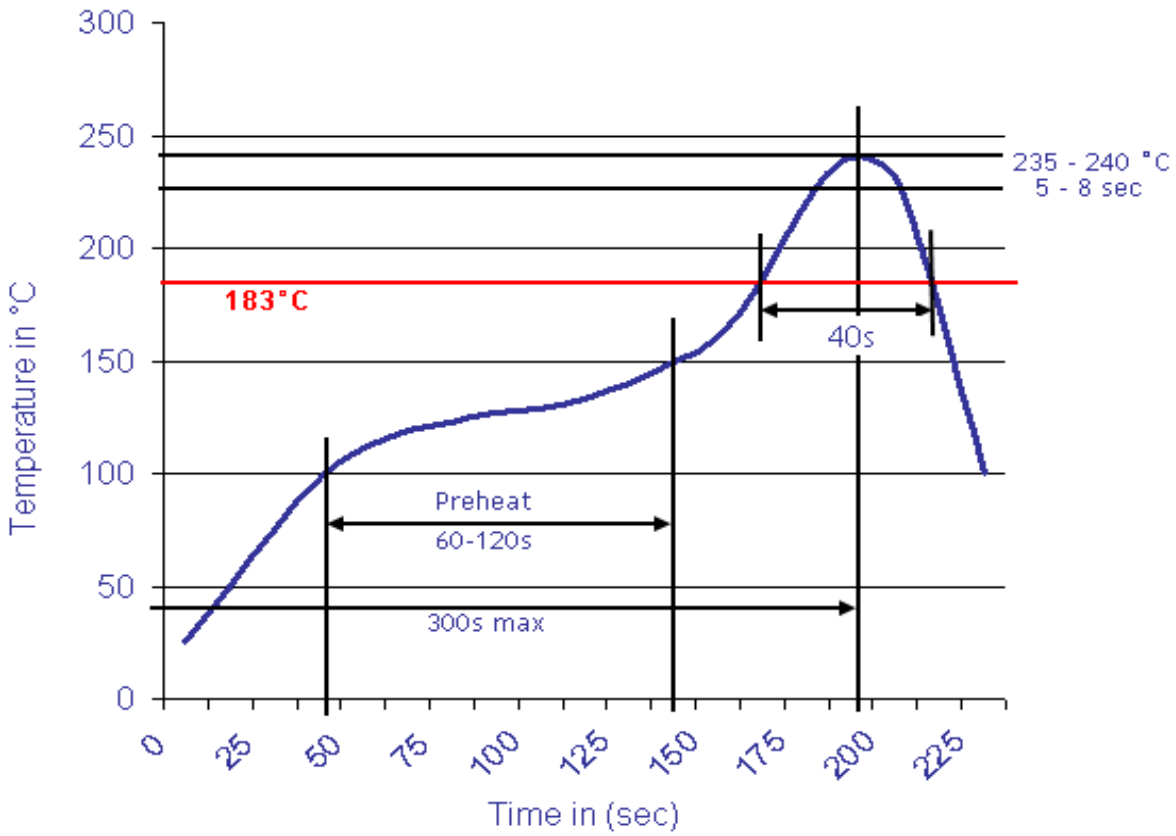
www.edcon-components.com
email: info@edcon-components.com



EDCON COMPONENTS
A MEMBER OF EDCON-GROUP

Thick Film Chip Resistor Tolerance 1% Soldering Profile Curve

Classification Reflow Profile (JEDEC J-STD-020C)

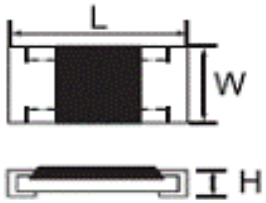


CHIP Resistor Size 0603
Tol. 1%

Part No.: **X30021**

DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	10.04.2009	Customer:
APPD:	Schumi			FINISH	Jamy		Sheet No.		5 from 6	

EDCON-COMPONENTS



EDCON COMPONENTS
A MEMBER OF EDCON-GROUP

Thick Film Chip Resistor Tolerance 1% Ordering Information Table

Ordering Informations

Serie	Range Code	Tolerance	T.C.R	ROHS	Tape / Reel + Quantity					
X30021	**92B**	**F**	**A0**	**R**	**T502**					

92B= look Range Table	**F=** 1%	**A0=** +/- 100ppm	**R=** ROHS Conform
			N= NON ROHS

T502= Tape Reel 5000PCS

T103= Tape Reel 10000PCS

CHIP Resistor Size 0603 Tol. 1%

Part No.: **X30021**

DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	10.04.2009	Customer:
APPD:	Schumi			FINISH	Jamy		Sheet No.		6 from 6	

www.edcon-components.com
email: info@edcon-components.com