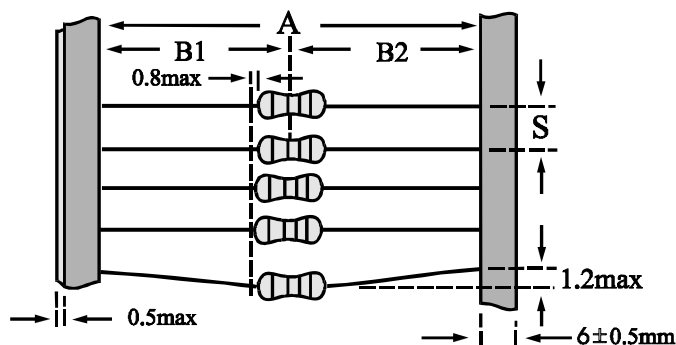
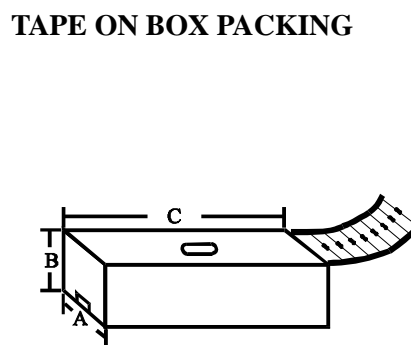
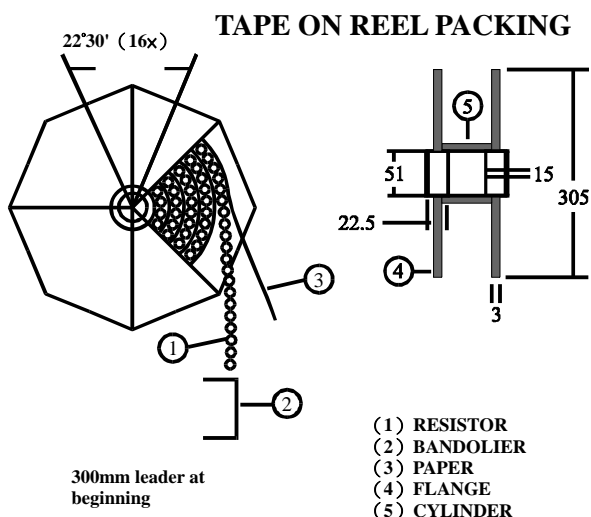


## AXIAL LEAD TAPING SPECIFICATION

### PACKING METHODS Bandoleer for Axial leads



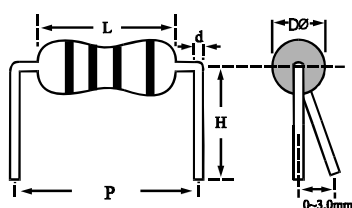
STYLE		DIMENSIONS [ mm ]			
NORMAL	MINIATURE	A	B1-B2	S (SPACING)	Max. deviation of spacing 1 mm per 10 spacing
TYPE-12	TYPE-25S	52 <sup>+1</sup> <sub>-0</sub>	1.2	5	
		26 <sup>+1</sup> <sub>-0</sub>	1.0		
TYPE-25	TYPE-50S	52 <sup>+1</sup> <sub>-0</sub>	1.2	5	
		26 <sup>+1</sup> <sub>-0</sub>	1.0		
TYPE-33	TYPE-50SS	52 <sup>+1</sup> <sub>-0</sub>	1.2	5	
TYPE-50	TYPE-1WS	52 <sup>+1</sup> <sub>-0</sub>	1.2	5	
TYPE-100	TYPE-2WS	52 <sup>+1</sup> <sub>-0</sub>	1.5	5	
		73 <sup>+1</sup> <sub>-0</sub>			
TYPE-200	TYPE-3WS	52 <sup>+1</sup> <sub>-0</sub>	1.5	10	
		73 <sup>+1</sup> <sub>-0</sub>			



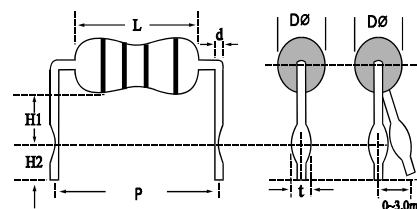
STYLE		TAPE ON REEL		TAPE ON BOX			
Normal	Miniature	Across Flange (A)	Qty Per Reel	W [ A ]	H [ B ]	L [ C ]	Qty Per Box
TYPE-12	TYPE-25S	72	5,000	80	75	264	5,000
TYPE-25	TYPE-50S	72	5,000	80	105	264	5,000
TYPE-33	TYPE-50SS	72	5,000	80	35	264	1,000
TYPE-50	TYPE-1WS	72	2,500	80	46	264	1,000
TYPE100	TYPE-2WS	95	2,000	103	82	265	1,000
TYPE200	TYPE-3WS	95	1,000	103	96	265	1,000

**LOOSE RESISTORS SPECIFICATION**

**SPECIAL TYPE (FORMING DIMENSIONS)**



**M-TYPE**

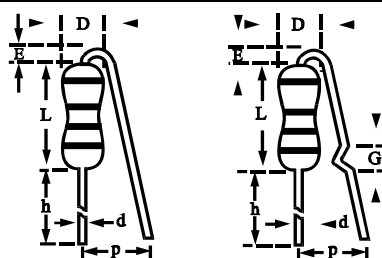


**MB-TYPE**

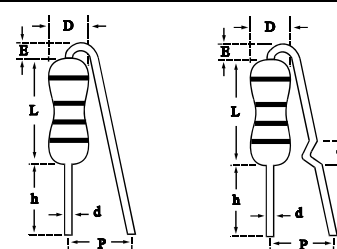
STYLE		DIMENSIONS (mm)				
NORMAL	MINIATURE	P	H	D	L	d
TYPE-12	TYPE-25S	5±1	5±1	1.8±0.3	3.3±0.4	0.45±0.03
TYPE-25	TYPE-50S	10±1	10±1	2.3±0.3	6.3±0.5	0.55±0.03
TYPE-33	TYPE-50SS	12.5±1	10±1	2.7±0.5	8.5±0.5	0.60±0.03
TYPE-50	TYPE-1WS	12.5±1	10±1	3.2±0.5	9.0±0.5	0.65±0.03
TYPE-100	TYPE-2WS	15±1	12.5±1	4.5±0.5	11.5±1.0	0.78±0.03
TYPE-200	TYPE-3WS	20±1	15±1	5.0±0.5	15.5±1.0	0.78±0.03

**MB-TYPE**

STYLE		DIMENSIONS (mm)						
NORMAL	MINIATURE	P	H1	H2	t	D	L	d
TYPE-100	TYPE-2WS	15±1	6.0±1	5.0±1	1.4±0.2	4.5±0.5	11.5±1.0	0.78±0.03
TYPE-200	TYPE-3WS	20±1	10±1	5.0±1	1.4±0.2	5.0±0.5	15.5±1.0	0.78±0.03



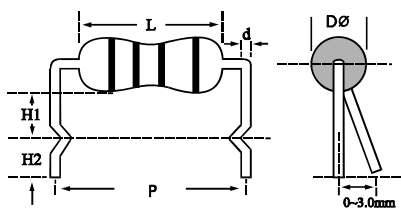
**F-TYPE**



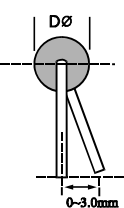
**FC-TYPE**

STYLE			DIMENSIONS (mm)						
	NORMAL	MINIATURE	P	h	G	D	L	d	E
F-TYPE	TYPE-25	TYPE-50S	10±1	28±2	2±0.5	2.3±0.3	6.3±0.5	0.55±0.03	2±0.5
FC-TYPE	TYPE-25	TYPE-50S	10±1	8±1	2±0.5	2.3±0.3	6.3±0.5	0.55±0.03	2±0.5

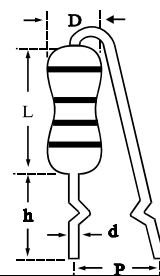




MK-TYPE



FKK-TYPE

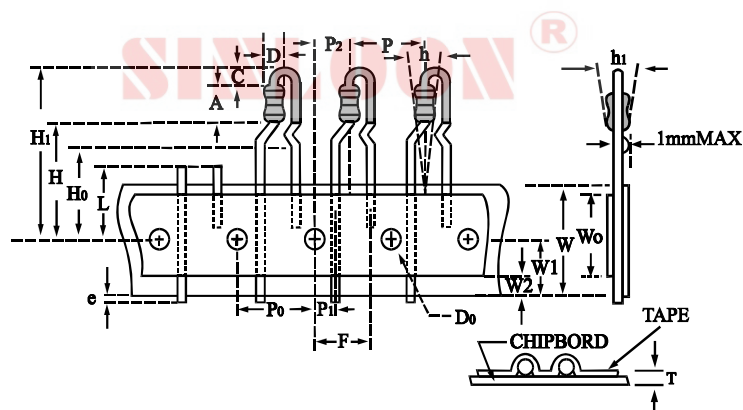


STYLE		DIMENSIONS (mm)					
NORMAL	MINIATURE	P	H1	H2	D	L	d
TYPE-100	TYPE-2WS	15±1	6.0±1	5.0±1	4.5±0.5	11.5±1.0	0.78±0.03
TYPE-200	TYPE-3WS	20±1	10 ±1	5.0±1	5.0±0.5	15.5±1.0	0.78±0.03

FKK-TYPE

STYLE		DIMENSIONS (mm)				
NORMAL	MINIATURE	P	h	D	L	d
TYPE-50	TYPE-1WS	6±1	10±1	3.2±0.5	9.0±0.5	0.65±0.03
TYPE-100	TYPE-2WS	6±1	10±1	4.5±0.5	11.5±1	0.78±0.03
TYPE-200	TYPE-3WS	6±1	10±1	5.0±0.5	15.5±1	0.78±0.03

## PANA-SERT & AVI-SERT & GOAL POST RADIAL LEAD TAPING RESISTORS & PACKING SPECIFICATION



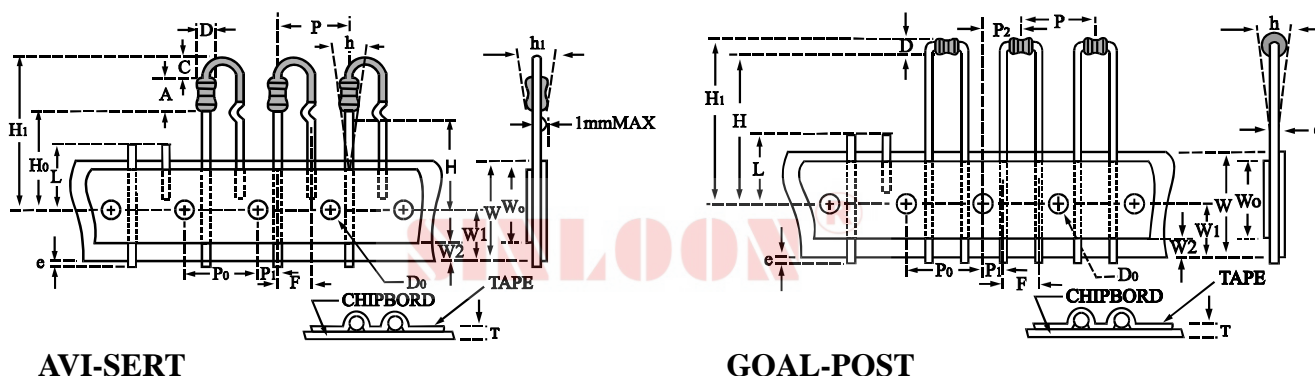
PANA-SERT

Description	TYPE	PANA-SERT			
		Dimensions(mm)		Dimensions(Inches)	
		25&50S	1W&2WS	25&50S	1W&2WS
Resistor Body Diameter	D	2.3±0.2	4±0.5	0.090±0.008	0.157±0.020
Resistor Body Length	A	6.5±0.5	11±1.0	0.256±0.020	0.433±0.039
Resistor Pitch	P	12.7±1.0	12.7±1.0	0.500±0.039	0.500±0.039
Sprocket Hole Pitch	PO	12.7±0.3	12.7±0.5	0.500±0.012	0.500±0.020
Sprocket Hole Center To Lead Center	P1	3.85±0.7	3.85±0.7	0.152±0.028	0.152±0.028
Sprocket Hole Center To Resistor Center	P2	6.35±1.0	5.35±1.0	0.250±0.039	0.250±0.039
Resistor Lead Spacing	F	5.0±1.0	5.0±0.8	0.197±0.039	0.197±0.039
Resistor Alignment	h	0±2.0 ( 0±5 <sup>0</sup> )		0±0.079 ( 0±5 <sup>0</sup> )	

Chipboard Width	W	18 <sup>+1.0</sup> <sub>-0.5</sub>	18.0±0.5	0.709 <sup>+0.039</sup> <sub>-0.020</sub>	0.709±0.020
Hold-Down Tape Resistor	Wo	12.5 MIN	12.0±1.0	0.492 MIN.	0.472±0.039
Sprocket Hole Position	W1	9.0 <sup>+0.75</sup> <sub>-0.5</sub>	9.0±0.5	0.354 <sup>+0.030</sup> <sub>-0.020</sub>	0.354±0.020
Hold-Down Tape Position	W2	3.0 MAX.	3.0 MAX.	0.118 MAX.	0.118 MAX.
Height To Bottom Of Resistor	H	19.0±1.0	19.0±1.0	0.748±0.039	0.748±0.039
Height To Lead Clinch	HO	16.0±0.5	16.0±1.0	0.630±0.020	0.630±0.039
Lead Protrusion	e	2.0 MAX.	2.0 MAX.	0.079 MAX.	0.079 MAX.
Sprocket Hold Diameter	DO	4.0±0.3	4.0±0.3	0.157±0.012	0.157±0.012
Thickness (Chipboard And Tape)	T	0.7±0.2	0.7±0.2	0.028±0.008	0.028±0.008
Cutout Length	L	11.0 MAX.	11.0 MAX.	0.433 MAX.	0.433 MAX.
Height Of Resistor	H1	28.5 MAX.	35.5 MAX.	1.122 MAX.	1.398 MAX.
Height Of Bending	C	2.5±0.5	2.5±1.0	0.098±0.020	0.098±0.039
Resistor Alignment	h1	0±2.0 ( 0±5 <sup>0</sup> )		0±0.079 ( 0±5 <sup>0</sup> )	

Cumulative Pitch Tolerances Not To Exceed±1.0mm(±0.039 In)Over 20 Consecutive Pitches

### PANA-SERT & AVI-SERT & GOAL POST RADIAL LEAD TAPING RESISTORS & PACKING SPECIFICATION



AVI-SERT

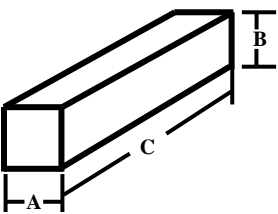
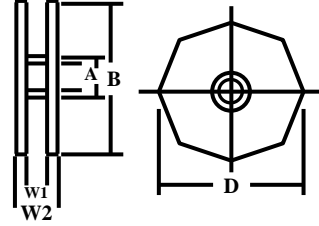
GOAL-POST

Description	TYPE	Dimensions(mm)		Dimensions(Inches)	
		AVI-SERT	GOAL POST	AVI-SERT	GOAL POST
		25&50S	12&25S	25&50S	12&25S
Resistor Body Diameter	D	2.3±0.2	1.8±0.4	0.090±0.008	0.071±0.016
Resistor Body Length	A	6.5±0.5	—	0.256±0.020	—
Resistor Pitch	P	12.7±1.0	12.7±1.0	0.500±0.039	0.500±0.039
Sprocket Hole Pitch	PO	12.7±0.3	12.7±0.5	0.500±0.012	0.500±0.020
Sprocket Hole Center To Lead Center	P1	3.85±0.7	3.85±0.7	0.152±0.028	0.152±0.028
Sprocket Hole Center To Resistor Center	P2	6.35±1.3	6.35±1.0	0.250±0.051	0.250±0.039
Resistor Lead Spacing	F	5.0 <sup>+0.8</sup> <sub>-0.2</sub>	5.0±0.8	0.197 <sup>+0.031</sup> <sub>-0.08</sub>	0.197±0.039
Resistor Alignment	h	0±2.0 ( 0±5 <sup>0</sup> )		0±0.079 ( 0±5 <sup>0</sup> )	
Chipboard Width	W	18.0 <sup>+1.0</sup> <sub>-0.5</sub>	18.0±1.0	0.709 <sup>+0.039</sup> <sub>-0.020</sub>	0.709±0.039
Hold-Down Tape Resistor	Wo	15.0±1.0	12.0±1.0	0.590±0.039	0.472±0.039
Sprocket Hole Position	W1	9.0 <sup>+0.75</sup> <sub>-0.5</sub>	9.0±0.5	0.354 <sup>+0.030</sup> <sub>-0.020</sub>	0.354±0.020
Hold-Down Tape Position	W2	2.75 MAX.	3.0 MAX.	0.108 MAX.	0.118 MAX.
Height To Bottom Of Resistor	H	16.0 <sup>+1.0</sup> <sub>-0.3</sub>	21.0 MAX.	0.630 <sup>+0.039</sup> <sub>-0.012</sub>	0.827 MAX
Height To Lead Clinch	HO	16.0±0.5	—	0.630±0.020	—
Lead Protrusion	e	1.0 MAX.	2.0 MAX.	0.039 MAX.	0.079 MAX
Sprocket Hold Diameter	DO	4.0±0.3	4.0±0.3	0.157±0.012	0.157±0.012
Thickness (Chipboard And Tape)	T	0.7±0.2	0.7±0.2	0.028±0.008	0.028±0.008

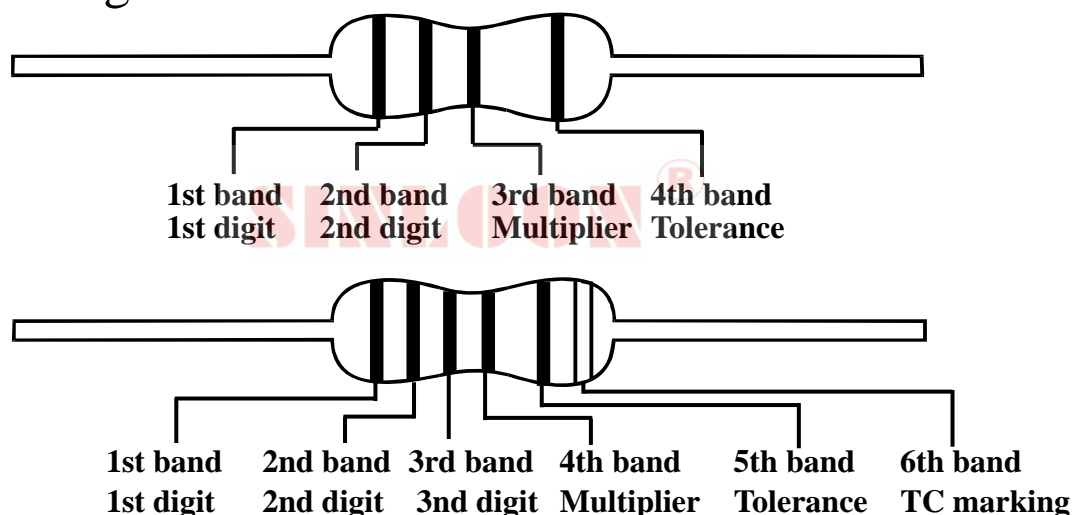
Cutout Length	L	2.0 MAX.	2.0 MAX.	0.079 MAX.	0.790 MAX
Height Of Resistor	H1	27. MAX.	32.25 MAX.	1.102 MAX.	1.398 MAX
Height Of Bending	C	3.0 <sup>+0</sup> <sub>-0.039</sub>	—	0.118 <sup>+0</sup> <sub>-0.039</sub>	—
Lead wire diameter	d	—	0.45±0.03	—	0.178±0.012
Resistor Alignment	h1	0±2.0 ( 0±5 <sup>0</sup> )	—	0±0.079 ( 0±5 <sup>0</sup> )	—

Cumulative Pitch Tolerances Not To Exceed±1.0mm(±0.039 In)Over 20 Consecutive Pitches

### PANA-SERT & AVI-SERT & GOAL POST RESISTORS PACKING SPECIFICATION

DIMENSION(mm)	AMMO			REEL				
								
(mm)	A	B	C	A	B	D	W1	W2
	53	120	325	31	76	312	44	50
Q'TY/BOX	2,000 PCS OR 3,000 PCS			2,500 PCS OR 3,000 PCS				

### Marking



COLOR	DIGIT	MULTIPLIER	TOLERANCE		TC-MARKING 6TH BAND	
WITHOUT			±20%	M		
SILVER		10 <sup>-2</sup>	±10%	K		
GOLD		10 <sup>-1</sup>	±5%	J		
BLACK	0	10 <sup>0</sup>			200	B
BROWN	1	10 <sup>1</sup>	±1%	F	100	C
RED	2	10 <sup>2</sup>	±2%	G	50	E
ORANGE	3	10 <sup>3</sup>			15	H
YELLOW	4	10 <sup>4</sup>			25	G
GREEN	5	10 <sup>5</sup>	±0.5%	D		
BLUE	6	10 <sup>6</sup>	±0.25%	C	10	K
VIOLET	7	10 <sup>7</sup>	±0.1%	B	5	L
GREY	8	10 <sup>8</sup>	±0.05%	A		
WHITE	9	10 <sup>9</sup>				

### RESISTANCE TOLERANCE

±10% ±5% ±2%	E-6	1.0				1.5				2.2				3.3				4.7				6.8			
	E-12	1.0		1.2		1.5		1.8		2.2		2.7		3.3		3.9		4.7		5.6		6.8		8.2	
	E-24	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.7	3.0	3.3	3.6	3.9	4.3	4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1
±2% ±1%	E-48	1.00	1.05	1.10	1.15	1.21	1.27	1.33	1.40	1.47	1.54	1.62	1.69	1.78	1.87	1.96	2.05	2.15	2.26	2.37	2.37	2.61	2.74	2.87	3.01
		3.16	3.32	3.48	3.65	3.83	4.02	4.22	4.22	4.64	4.87	5.11	5.36	5.62	5.90	6.19	6.49	6.81	7.15	7.50	7.87	8.25	8.66	9.09	9.53
	E-96	1.00	1.02	1.05	1.07	1.10	1.13	1.15	1.18	1.21	1.24	1.27	1.30	1.33	1.37	1.40	1.43	1.47	1.50	1.54	1.58	1.62	1.65	1.69	1.74
		1.78	1.82	1.87	1.91	1.96	2.00	2.05	2.10	2.15	2.21	2.26	2.32	2.37	2.43	2.49	2.55	2.61	2.67	2.74	2.80	2.87	2.94	3.01	3.09
		3.16	3.24	3.32	3.40	3.48	3.57	3.65	3.74	3.83	3.92	4.02	4.12	4.22	4.32	4.42	4.53	4.64	4.75	4.87	4.99	5.11	5.23	5.36	5.49
		5.62	5.76	5.90	6.04	6.19	6.34	6.49	6.65	6.81	6.98	7.15	7.32	7.50	7.68	7.87	8.06	8.25	8.45	8.66	8.87	9.09	9.31	9.53	9.76
±1% ±0.5% ±0.25% ±0.1%	E-19 2	10.0	10.1	10.2	10.4	10.5	10.6	10.7	10.9	11.0	11.1	11.3	11.4	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	13.0	13.2
		13.3	13.5	13.7	13.8	14.0	14.2	14.3	14.5	14.7	14.9	15.0	15.2	15.4	15.6	15.8	16.0	16.2	16.4	16.5	16.7	16.9	17.2	17.4	17.6
		17.8	18.0	18.2	18.4	18.7	18.9	19.1	19.3	19.6	19.8	20.0	20.3	20.5	20.8	21.0	21.3	21.5	21.8	22.1	22.3	22.6	22.9	23.2	23.4
		23.7	24.0	24.3	24.6	24.9	25.2	25.5	25.8	26.1	26.4	26.7	27.1	27.4	27.7	28.0	28.4	28.7	29.1	29.4	29.8	30.1	30.5	30.9	31.2
		31.6	32.0	32.4	32.8	33.2	33.6	34.0	34.4	34.8	35.2	35.7	36.1	36.5	37.0	37.4	37.9	38.3	38.8	39.2	39.7	40.2	40.7	41.2	41.7
		42.2	42.7	43.2	43.7	44.2	44.8	45.3	45.9	46.4	47.0	47.5	48.1	48.7	49.3	49.9	50.5	51.1	51.7	52.3	53.0	53.6	54.2	54.9	55.6
		56.2	56.9	57.6	58.3	59.0	59.7	60.4	61.2	61.9	62.6	63.4	64.2	64.9	65.7	66.5	67.3	68.1	69.0	69.8	70.6	71.5	72.3	73.2	74.1
		75.0	75.9	76.8	77.7	78.7	79.6	80.6	81.6	82.5	83.5	84.5	85.6	86.6	87.6	88.7	89.8	90.9	92.0	93.1	94.2	95.3	96.5	97.6	98.8

### ● Resistor body color

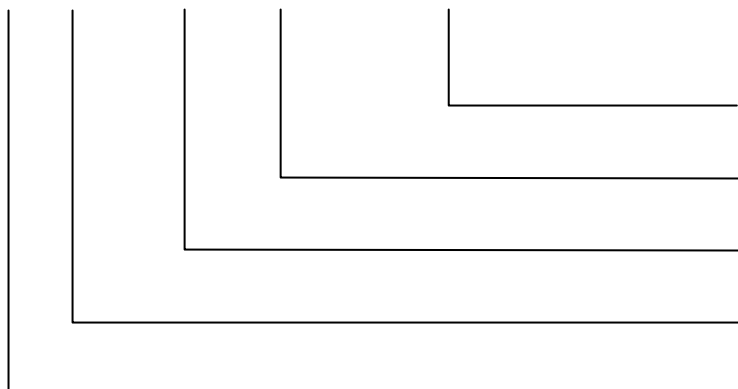
- 1. Normal size----- Blue(藍色)
- 2. Small size-----Apple Green(蘋果綠)

普通型 Normal size		小型化 Small size	
種類 Type	顏色 Color	種類 Type	顏色 Color
MF1/8W MF1/4W MF1/2W MF1W MF2W	Blue(藍色)	MF1/4WS MF1/2WS MF1WS MF2WS MF3WS	Apple Green (蘋果綠)

### HOW TO ORDER

### ● PART NUMBER:

MF -1/4W - VALUE - F - FORMING TYPE



TB = BU / T/B / T/R / F / FC / FKK / M / MK / PANA-T or R

RES. TOLERANCE 1% / 0.1% = F / B

RESISTANCE 0R1 1R 10R 100R 1K 10K 100K 1M 10M

DIN SIZE , BODY SIZE

METAL FILM RESISTOR

