福島双羽電機株式会社
FUKUSHIMA FUTABA ELECTRIC CO., LTD.

Low Ohm Power Resistors

The special construction characteristics of the metalband resistors of Fukushima Futaba offer in comparison to the alre
known axial lopped wirewound resistors many advantages. The resistor element is punched like meander out of a spe
metalband (special alloy of Ni/Cr/Fe/Cu). On this element the lead wires are welded without caps.
This two-dimensional type therefore only has a very low inductive resistance. The negative effect of the enormous tem
decrease of the 'hotspot-zone' in the mid of the resistor to the both ends which is well-known from axial and lopped res
not occur when using MPC resistors as the lead wires have a much smaller surface as the element and they are not lo
construction results in an steady thermal distribution over the element. The metalband element is housed in and herme
closed ceramic case supporting the optimal thermal characteristics. Idle zones in the case are filled before shutting wit
cement with ceramic powder.
Because of the steady heat dissipation over the complete case, there is the possibility to increase the rating capacity m
times, when slipping over a suitable cooling cap over the resistor case.

Technical Data

MPC76	MPC70	MPC78	MPC708	MPC75	MPC71	MPC74	MPC722	MPC725	MPC722	MPC723
2W	2W	2W	2W+2W	5W	5W	5W	5W+5W	5W+5W	10W	10W
0,010 Ω	0,10 Ω	0,10 Ω	0,1+0,1 Ω	0,01 Ω (3W)	0,10 Ω	5W	0,1+0,1 Ω	0,10 + 0,10 Ω		
0,012 Ω	0,12 Ω	0,12 Ω			0,12 Ω	0,10 Ω				
0,015 Ω	0,15 Ω	0,15 Ω			0,15 Ω	0,12 Ω				
0,020 Ω	0,18 Ω	0,18 Ω		0,02 Ω	0,18 Ω	0,15 Ω				
**0,027 Ω	0,22 Ω	0,22 Ω	0,22+0,22 Ω		0,22 Ω	0,18 Ω	0,22+0,22 Ω	0,22+0,22 Ω		
	0,24 Ω	0,24 Ω			0,24 Ω	0,24 Ω				
0,030 Ω	0,27 Ω	0,27 Ω			0,27 Ω	0,22 Ω				
**0,033 Ω	0,33 Ω	0,33 Ω	0,33+0,33 Ω		0,33 Ω	0,27 Ω	0,33+0,33 Ω	0,33+0,33 Ω		
0,050 Ω	0,39 Ω	0,39 Ω		0,05 Ω	0,39 Ω	0,33 Ω				
	0,47 Ω	0,47 Ω			0,47 Ω	0,39 Ω	0,47+0,47 Ω		0,47 Ω	
	0,56 Ω	0,56 Ω			0,56 Ω	0,47 Ω				
	0,68 Ω	0,68 Ω			0,68 Ω	0,56 Ω				
	0,82 Ω	0,82 Ω		0,08 Ω	0,82 Ω	0,68 Ω			*1,00 Ω	
	1,00 Ω	1,00 Ω			1,00 Ω	0,82 Ω			*1,20 Ω	
				1,50 Ω		1,00 Ω			*1,50 Ω	
									*1,80 Ω	
				2,20 Ω					*2,20 Ω	
									*3,30 Ω	
										6,8 Ω

MPC725 inaktive wi

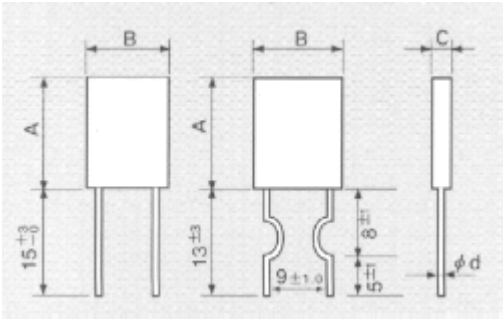
MPC78 / 74 Low Distortion

** Customer specific values, Delivery on inquiry

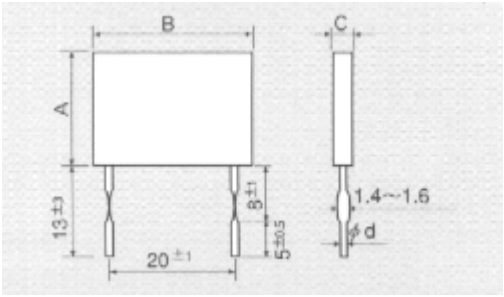
Tolerance:	± 10% (± 5% - not available for all values) * ± 5% Standard Tolerance
Temperature coefficient:	± 350ppm/°C
Operating temperature:	-25 to +200°C
Insulation resistance:	10 M Ohm

Dimensions

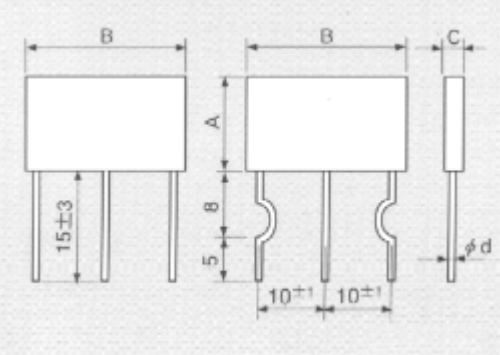
Type:	A:	B:	C:	RM:	d:
MPC70 / 78/ 76	8 ±1,0	13 ±1,0	4 ±0,5	9 ±1,0	0,6
MPC71 / 74/ 75	18 ±1,0	14 ±1,0	5 ±0,5	9 ±1,0	0,6
MPC708 2x2W	10 ±1,0	26,5 ±1,0	5 ±0,5	10,0+10,0 ±1,0	0,6
MPC722 2x5W	17 ±1,0	26 ±1,0	5 ±0,5	10,0+10,0 ±1,0	1
MPC722 / 723 10W	18 ±1,0	26 ±1,0	5 ±0,5	20 ±1,0	0,8
MPC725 2x5W	17 ±1,0	26 ±1,0	5 ±0,5	10,0+10,0 ±1,0	0,8



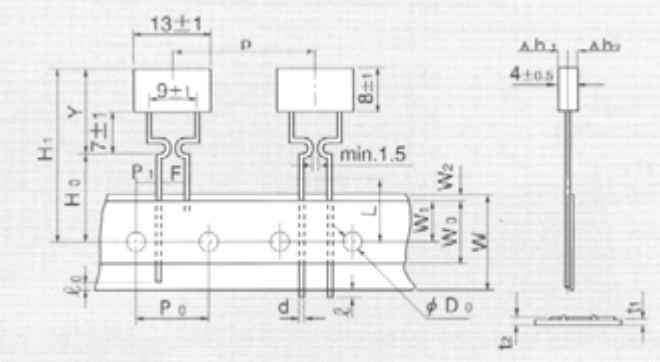
a) left straight leads standard version MPC76 / MPC70 (2W) + MPC75 / MPC71 (5W)
b) right kinked leads special version MPC76 / MPC70 (2W) + MPC75 / MPC71 (5W)



version MPC722 10W



version MPC708 (2x2W) / 702 / 725 (2x5W)



taped version for MPC76 / MPC70 (2W)

Testdata and absolute max. rates (MIL-R-11804)

Tests :	Test condition:	max. allowed deviation:
Rated load (normal)	+70°C / 1000 h	±1 %
Rated load (Humidity)	+40°C/1000 h/90-95%RH	±2 %
Temporary Overload:	3000 Volt DC	± 1 %
Soldering:	+350°C for 3 sec	± 0,5 %
Terminal load	5 kp	± 1 %

Comparison table

Criteria:	MPC-Type:	Axial Case
Dimensions for 2W	13(L) x 4(B) x 8(H)	ca. 5 Ø x 16(L)
Dimensions for 5W	14(L) x 5(B) x 18(H)	ca. 6 Ø x 22(L)
Smallest Pitch (2W)	9 mm	15 mm
Smallest Pitch (5W)	9 mm	25 mm
Necessity of confectioning the leadwires	no	yes
Assembly direcly on the PCB:	yes	no
Inductive Resistance:	minimal	yes
Temperature dissipation:	Steady on surface	Unsteady, Hotspot-Zone

Hermetical cap:	yes	no
Increase of power dissipation:	yes, by slipping over of a cooling case	no