

Metalband Resistors, Type MPC



Low Ohm Power Resistors

The special construction characteristics of the metalband resistors of Fukushima Futaba offer in comparison to the already known axial lopped wirewound resistors many advantages. The resistor element is punched like meander out of a special 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 temperature decrease of the 'hotspot-zone' in the mid of the resistor to the both ends which is well-known from axial and lopped resistor will not occur when using MPC resistors as the lead wires have a much smaller surface as the element and they are not lopped. This construction results in an steady thermal distribution over the element. The metalband element is housed in and hermetically closed ceramic case supporting the optimal thermal characteristics. Idle zones in the case are filled before shutting with special cement with ceramic powder.

Because of the steady heat dissipation over the complete case, there is the possibility to increase the rating capacity many times, when slipping over a suitable cooling cap over the resistor case.

Technical Data

MPS70	MPC76	MPC70	MPC78	MPC708	MPC75	MPC71	MPC74	MPC722	MPC725	MPC722	MPC723
1W	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	0,10 Ω	0,1+0,1 Ω	0,10 + 0,10 Ω		
0,12 Ω	0,012 Ω	0,12 Ω	0,12 Ω			0,12 Ω	0,12 Ω				
0,15 Ω	0,015 Ω	0,15 Ω	0,15 Ω			0,15 Ω	0,15 Ω				
0,18 Ω	0,020 Ω	0,18 Ω	0,18 Ω		0,02 Ω	0,18 Ω	0,18 Ω				
0,22 Ω	**0,027 Ω	0,22 Ω	0,22 Ω	0,22+0,22 Ω		0,22 Ω	0,24 Ω	0,22+0,22 Ω	0,22+0,22 Ω		
		0,24 Ω	0,24 Ω			0,24 Ω	0,22 Ω				
	0,030 Ω	0,27 Ω	0,27 Ω		0,03 Ω	0,27 Ω	0,27 Ω				
0,33 Ω	**0,033 Ω	0,33 Ω	0,33 Ω	0,33+0,33 Ω		0,33 Ω	0,33 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	0,39 Ω				
		0,47 Ω	0,47 Ω			0,47 Ω	0,47 Ω	0,47+0,47 Ω		0,47 Ω	
		0,56 Ω	0,56 Ω			0,56 Ω	0,56 Ω				
		0,68 Ω	0,68 Ω			0,68 Ω	0,68 Ω				
		0,82 Ω	0,82 Ω		0,08 Ω	0,82 Ω	0,82 Ω			*1,00 Ω	
		1,00 Ω	1,00 Ω			1,00 Ω	1,00 Ω			*1,20 Ω	
					1,50 Ω					*1,50 Ω	
										*1,80 Ω	
					2,20 Ω					*2,20 Ω	
										*3,30 Ω	
											6,8 Ω

MPC725 inactive wire for tests

MPC74 / MPC76 : low distortion and because of non-magnetic characteristics these resistors show an excellent noise free behaviour especially for Audio application!

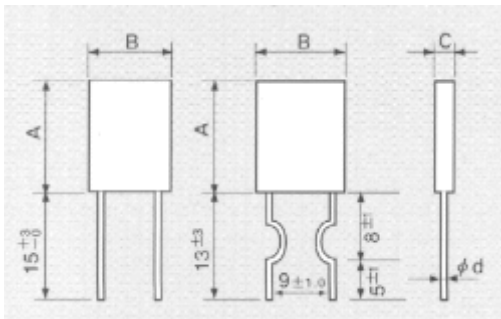
** Customer specific values, Delivery on inquiry

REV: 04.11.2008

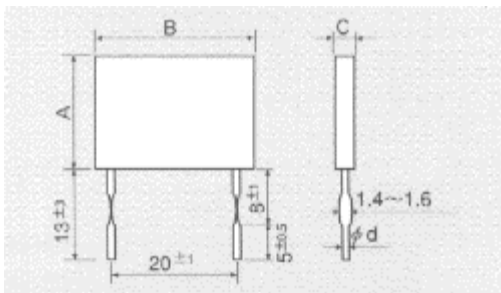
Tolerance: $\pm 10\%$ ($\pm 5\%$ - not available for all values) * $\pm 5\%$ Standard Tolerance
Temperature coefficient: $\pm 350\text{ppm}/^\circ\text{C}$
Operating temperature: -25 to $+200^\circ\text{C}$
Insulation resistance: $10\text{ M}\Omega$

Dimensions

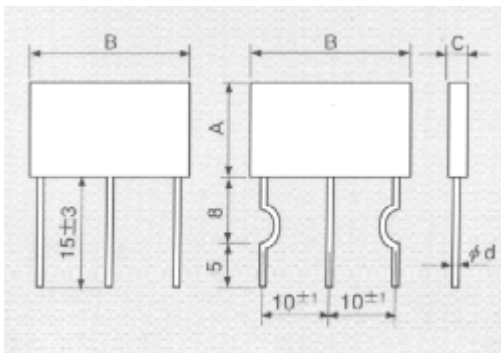
Type:	A:	B:	C:	RM:	d:
MPS70	$8 \pm 1,0$	$13 \pm 1,0$	$4 \pm 0,5$	$9 \pm 1,0$	0,6
MPC70 / 78/ 76	$8 \pm 1,0$	$13 \pm 1,0$	$4 \pm 0,5$	$9 \pm 1,0$	0,6
MPC71 / 74/ 75	$18 \pm 1,0$	$14 \pm 1,0$	$5 \pm 0,5$	$9 \pm 1,0$	0,6
MPC708 2x2W	$10 \pm 1,0$	$26,5 \pm 1,0$	$5 \pm 0,5$	$10,0+10,0 \pm 1,0$	0,6
MPC722 2x5W	$17 \pm 1,0$	$26 \pm 1,0$	$5 \pm 0,5$	$10,0+10,0 \pm 1,0$	1
MPC722 / 723 10W	$18 \pm 1,0$	$26 \pm 1,0$	$5 \pm 0,5$	$20 \pm 1,0$	0,8
MPC725 2x5W	$17 \pm 1,0$	$26 \pm 1,0$	$5 \pm 0,5$	$10,0+10,0 \pm 1,0$	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)

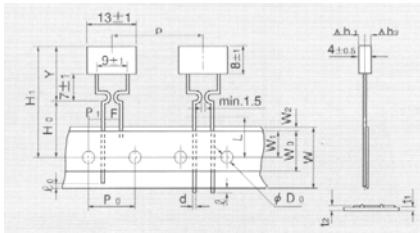


version MPC722 10W



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

REV: 04.11.2008



	P	P ₀	P ₁	F	F'	W	W ₀	W ₁	W ₂	H ₀	D ₀	I	I ₀
Dimensions (mm)	25.4	12.7	3.85	5.0	5.0	18.0	13.0	9.0	3.0	16.0	44.0	1.0	7.0
	±1.0	±0.3	±0.7	±0.5	±1.0	±0.5	±0.5	±0.5	max.	±0.5	±0.2	max.	max.

	L	t ₁	t ₂	d _{h1} d _{h2}	d	H ₁	Y
Dimensions (mm)	11.0	0.7	1.5	2.0	0.6	32.0	16.0
	max.	±0.2	max.	max.	±0.05	max.	max.

Part NO.	Resistance	Tolerance	Type	Rating
1-217-611-61	0.1Ω	±10%	MPC78	2 W

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 directly 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

REV: 04.11.2008