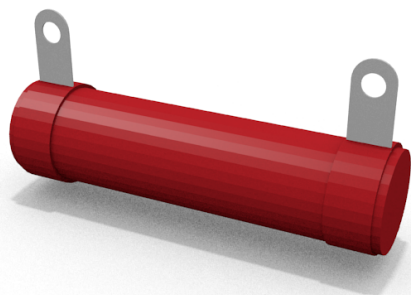


シリコンコート・円筒型パワー抵抗器

Yokohama Electronic Devices

JPR series / Tubular Power - Silicone Coated



特徴

- ・高耐熱シリコンコート。
- ・高精度、低TCR。
- ・無誘導タイプも対応可能。
- ・1977年よりJSS50402認証。
- ・高サージ耐性品も可能です。
- ・参考規格
 - IS 8909
 - JSS 50402 [RFHT-2]
 - MIL-R-26 [CHARACTERISTIC V]

Features

- ・High Temp Silicone Coating.
- ・Close Tolerance, Low TCR.
- ・Non Inductive Versions Available.
- ・Approved since 1977 to JSS 50402.
- ・High Surge Versions Available
- ・REFERENCE STANDARDS
 - IS 8909
 - JSS 50402 [RFHT-2]
 - MIL-R-26 [CHARACTERISTIC V]

JPRシリーズは厳格な防衛用途向けに設計された巻き線抵抗器です。定格はホットスポット温度で最高350℃まで規定されており、定められた規格仕様に完全適合。その安定性は規格仕様を大きく上回っています。絶縁タイプの供給も可能。ご要求により無誘導タイプも供給可能です。

This JPR Series wirewound resistors are designed to stringent Defence specifications. They are rated to a maximum hot spot temperature of 350 °C and fully meet the requirements of the specifications listed. The stability of the resistors in this series far exceeds the specification requirements. Insulated types can also be supplied if required. Tapped, Adjustable and Non-Inductive resistors can be supplied on request.

仕様 / Electrical Specifications

Specifications	
TOLERANCE	For values > 1R0 - ± 5% For values < 1R0 - ± 10% or ± 0R05 or whichever is greater For taped/adjustable/non-inductive values ± 10% Other tolerances on request
TEMP. COEFF. of RESISTANCE: [TCR]	± 50ppm/°C - JSS limit = ± 200ppm/°C : MIL limit = ± 260ppm/°C [in lower values higher TCR wires may be used]
POWER RATING:	Rated @ 70 °C ambient and derated linearly to zero power at 350 °C in horizontal or vertical mounting with blocked ends. Max. voltage applicable as per specifications or ÖPR whichever is lower. In tapped resistors, the power handling capacity is reduced by approximately 10% per tap. The power per tapped resistor will be in proportion to the length of the tap and the overall length of the resistor. In adjustable resistors, power is proportional to the setting. Design engineers should ensure that the dissipation does not exceed the ratings. the best method is to treat the full resistor as a current limited device and arrive at the maximum power for the value set.

LOAD LIFE STABILITY	<P3%	Temperature category	T 55/200
MOISTURE RESISTANCE	<P2%	Thermal shock	-60-C to +350-C
CLIMATIC SEVERITY	H13	Low air pressure	P19, 1KPA
STEADY STATE ACCELERATION	A12 1000 M/S ²	Vibration	V11,10 to 500Hz; 100M/S ²

シリコンコート・円筒型パワー抵抗器

Yokohama Electronic Devices

JPR series / Tubular Power - Silicone Coated

高電力抵抗器の温度上昇：
電力消費増によるJPR200シリーズの温度上昇は以下のグラフをご参照ください。
図1と図2は抵抗器の長さ方向(JPRシリーズ269mm)でみた代表的な温度分布を示しています。これは40℃環境下において1時間の安定電流を印加した後のものです。

TEMP. RISE FOR HIGH WATTAGE RESISTORS :
A GRAPH OF RISE IN TEMPERATURE WITH INCREASING POWER DISSIPATION IS GIVEN FOR JPR200 (FIG.1). ALSO SHOWN IN FIG.2 IS A TYPICAL TEMPERATURE DISTRIBUTION OVER THE LENGTH OF THE RESISTOR (269MM FOR JPR200) AFTER ONE HOUR OF STABILIZED CURRENT FLOW AT AN AMBIENT OF 40 °C.

図1. (Figure 1)

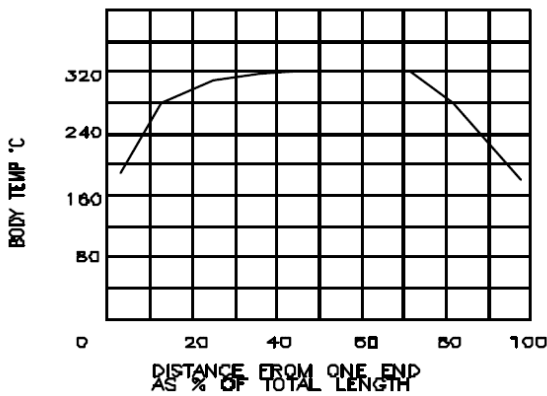
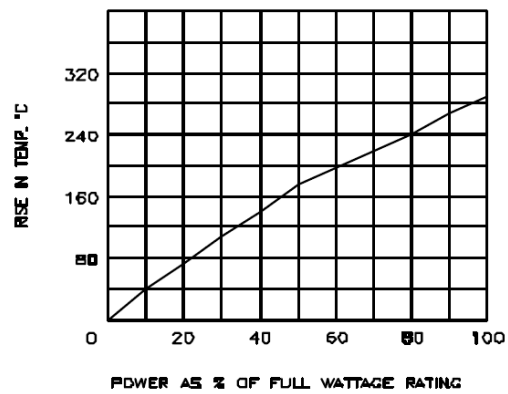


図2. (Figure 2)

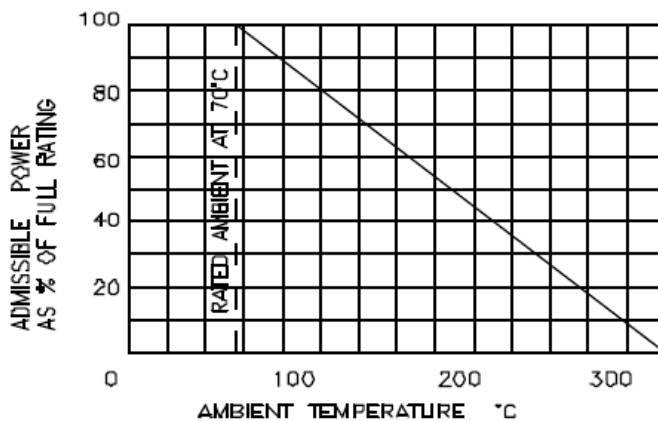


品番構成 / Ordering Code

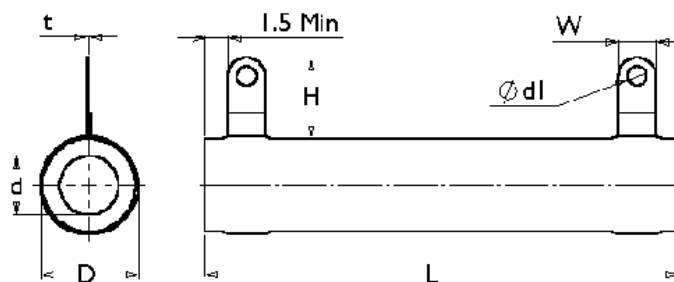
Type	Ohmic Value	Tolerance	Packing Style	Release Condition	Standard / Non-Std.	TCR
					Termination	
JPR25	0.1 Ohm : 0R1 / R10	1% : F	Bulk : B	Commercial : X JSS : J	Standard : S	Standard : S
	1 Ohm : 1R0	2% : G			Others : M	Others : M
	1 K Ohm : 1K0	5% : J				
	10.7K Ohm : 10K7	10% : K				

A Sample Part No.: JPR5 47R JBXSS

Derating Curve²



JPR series



Type	Rating	DIMENSIONS IN MM [IN]							RESISTANCE RANGE OHMS		JSS	MIL	IS
		L [±0.118] ⁴	D ± 1.00 [± 0.039]	d ± 1.00 ⁴ [± 0.039] ⁴	W ± 0.20 [± 0.008]	H ± 3.00 [± 0.118]	t ¹ MAX	d ¹ MIN	MIN	MAX			
JPR04	4	20 [0.787]	9.5 [0.374]	4.5 [0.177]	4 [0.157]	8 [0.315]	0.55 [0.022]	2.2 [0.086]	0R1	1K5			
JPR05	5	25 [0.984]	9.5 [0.374]	4.5 [0.177]	4 [0.157]	8 [0.315]	0.55 [0.022]	2.2 [0.086]	0R1	2K0			
JPR08	8	35 [1.378]	9.5 [0.374]	4.5 [0.177]	4 [0.157]	8 [0.315]	0.55 [0.022]	2.2 [0.086]	0R1	3K3			
JPR10	10	45 [1.772]	9.5 [0.374]	4.5 [0.177]	4 [0.157]	8 [0.315]	0.55 [0.022]	2.2 [0.086]	0R1	3K9		RW29	
JPR10A	10	27.001 [1.063] ¹	15.001 [0.591] ¹	7.702 [0.303] ²	4.002 [0.157] ²	10 [0.394]	0.55 [0.022]	2.2 [0.086]	0R1	2K7	RFHT 2-10	RW30	FRP 2-10
JPR15	15	40.001 [1.575] ¹	15.001 [0.591] ¹	7.702 [0.303] ²	4.002 [0.157] ²	10 [0.394]	0.55 [0.022]	2.2 [0.086]	0R1	6K2	RFHT 2-15	RW31	FRP 2-15
JPR17	17	51 [2.007]	15 [0.591]	7 [0.276]	4 [0.157]	10 [0.394]	0.55 [0.022]	2.2 [0.086]	0R1	6K8		RW32	
JPR20	20	62 [2.441]	15 [0.591]	7 [0.276]	4 [0.157]	10 [0.394]	0.55 [0.022]	2.2 [0.086]	0R1	10K			
JPR25	25	78.001 [3.070] ¹	15.001 [0.591] ¹	7.702 [0.303] ²	4.002 [0.157] ²	10 [0.394]	0.55 [0.022]	2.2 [0.086]	0R1	18K	RFHT 2-25	RW33	FRP 2-25
JPR25A	25	62 [2.441]	19 [0.748]	9 [0.354]	8 [0.315]	12 [0.472]	1.2 [0.047]	4.5 [0.177]	0R1	12K			
JPR25B	25	50 [1.969]	19 [0.748]	9 [0.354]	8 [0.315]	12 [0.472]	1.2 [0.047]	4.5 [0.177]	0R1	10K			
JPR35	35	75 [2.953]	19 [0.748]	9 [0.354]	8 [0.315]	12 [0.472]	1.2 [0.047]	4.5 [0.177]	0R1	18K			
JPPR40	40	100 [3.937]	19 [0.748]	9 [0.354]	8 [0.315]	12 [0.472]	1.2 [0.047]	4.5 [0.177]	0R1	22K			
JPR40A	40	83 [3.268]	24 [0.945]	14.5 [0.571]	8 [0.315]	15 [0.591]	1.2 [0.047]	4.5 [0.177]	0R1	18K			
JPR50	50	104.001 [4.094] ¹	29.101 [1.146] ¹	14.302 [0.563] ²	8 [0.315]	15 [0.591]	1.2 [0.047]	4.5 [0.177]	0R1	39K	RFHT 2-50	RW35	FRP 2-50
JPR60	60	123 [4.842]	24 [0.945]	14.5 [0.571]	8 [0.315]	15 [0.591]	1.2 [0.047]	4.5 [0.177]	0R1	39K			
JPR75	75	100 [3.937]	33 [1.299]	18.003 [0.709] ³	8 [0.315]	15 [0.591]	1.2 [0.047]	4.5 [0.177]	0R1	39K		RW36	
JPR100	100	155.001 [6.102] ¹	33.001 [1.299] ¹	19.102 [0.752] ²	8 [0.315]	15 [0.591]	1.2 [0.047]	4.5 [0.177]	0R1	91K	RFHT 2-100	RW37	FRP 2-100
JPR100A	100	165 [6.496]	33 [1.299]	19.5 [0.768]	8 [0.315]	15 [0.591]	1.2 [0.047]	4.5 [0.177]	0R1	91K			
JPR150	150	205.001 [8.071] ¹	33.001 [1.299] ¹	19.102 [0.752] ²	8 [0.315]	15 [0.591]	1.2 [0.047]	4.5 [0.177]	0R1	100K	RFHT 2-140	RW38	FRP 2-140
JPR200	200	269.001 [10.59] ¹	33.001 [1.299] ¹	19.102 [0.752] ²	8 [0.315]	15 [0.591]	1.2 [0.047]	4.5 [0.177]	0R1	100K	RFHT 2-180		FRP 2-180
JPR300	300	310.001 [12.20] ¹	33.001 [1.299] ¹	19.102 [0.752] ²	8 [0.315]	15 [0.591]	1.2 [0.047]	4.5 [0.177]	0R1	100K		RW39	
JPR500	500	335.001 [13.19] ¹	58.001 [2.283] ¹	35.002 [1.378] ²	12.7 [0.500]	20 [0.787]	2.5 [0.098]	5.5 [0.217]	0R1	100K			

NOTES :

1. Maximum dimension. 2. Minimum dimension. 3. Tolerance=2mm[0.079 in.]
4. Except where specified otherwise. 5. Fig 3A where t=0.55, fig3B for other thickness.

JPR series

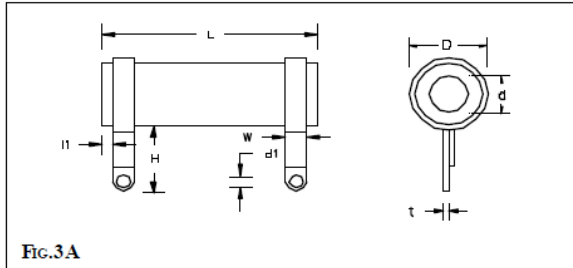


FIG.3A

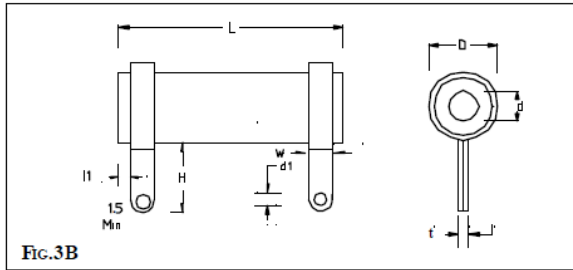


FIG.3B

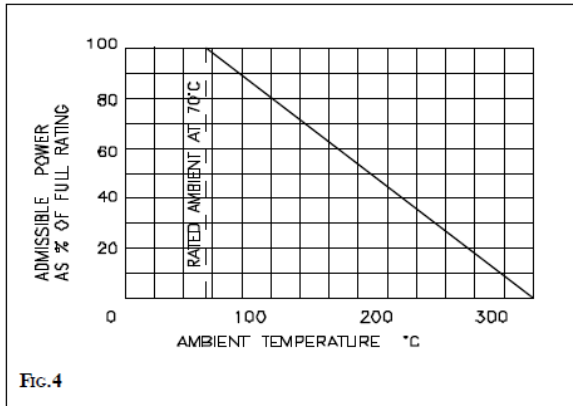


FIG.4

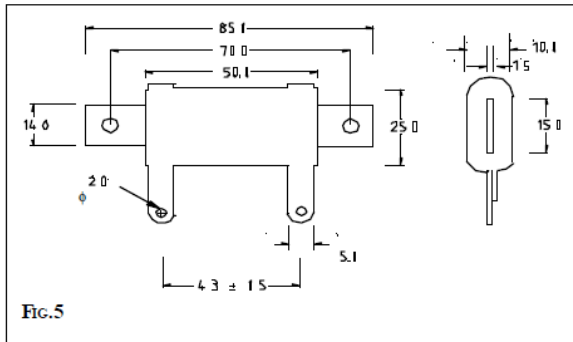


FIG.5

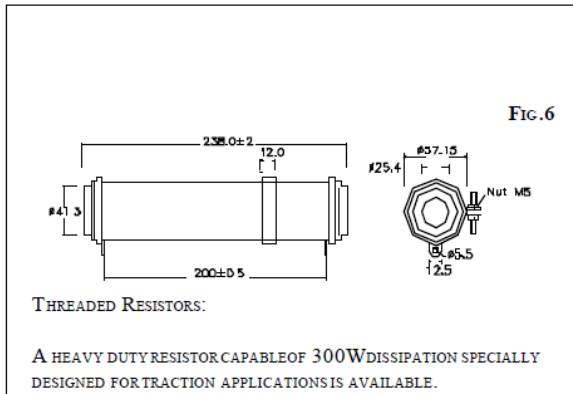


TABLE 2 : JPR SERIES - ALTERNATE TERMINATIONS AVAILABLE

DIMENSIONS IN MM [IN]
[PLEASE SEE TABLE 1 FOR DETAILS.]

ALL JPR TYPES FOR WHICH "D" =	CLAMP WIDTH W	HOLE DIA. d1	CLAMP THICKNESS t	TOL. [MM]	TOL. [IN]
±0.50 [±0.020]	±0.20 [±0.008]	±0.10 [±0.004]	±0.10 [±0.004]		
19.00 [0.748]	4.00 [0.157]	2.20 [0.086]	0.55 [0.022]		
19.00 [0.748]	10.00 [0.394]	5.00 [0.197]	1.20 [0.047]		
33.00 [1.299]	12.70 [0.500]	5.50 [0.217]	1.20 [0.047]		

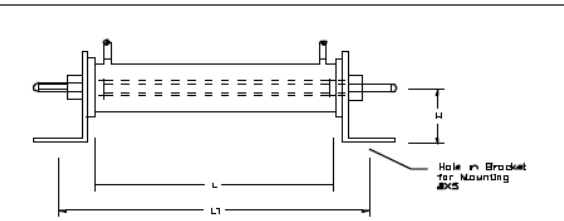
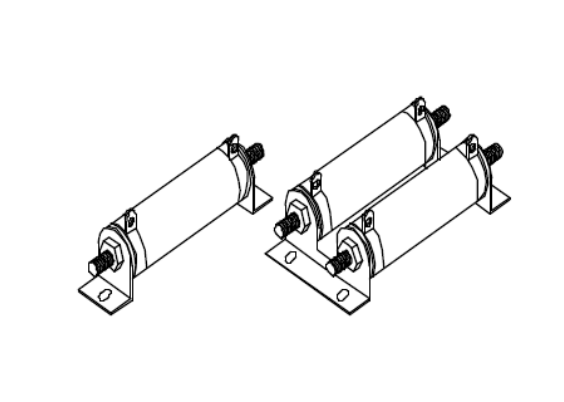


FIG.7
NOTE ON MOUNTING

The recommended method of mounting is shown in the Figure. YED supplies mounting hardware for use with resistors of various wattages and for mounting from one to six resistors in a single frame.

FOR ALL JPR TYPES EXCEPT JPR500
 $L1 = L + 26.00 \text{ MM} / 1.024 \text{ IN}$: $H = 22.50 \text{ MM} / 0.886 \text{ IN}$
 FOR JPR500
 $L1 = L + 40.00 \text{ MM} / 1.575 \text{ IN}$: $H = 70.00 \text{ MM} / 2.756 \text{ IN}$

FIG.8



JPR SERIES

JPR series

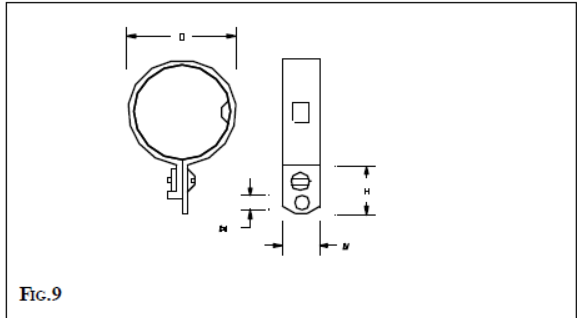
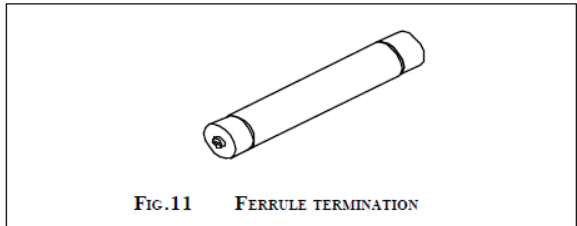
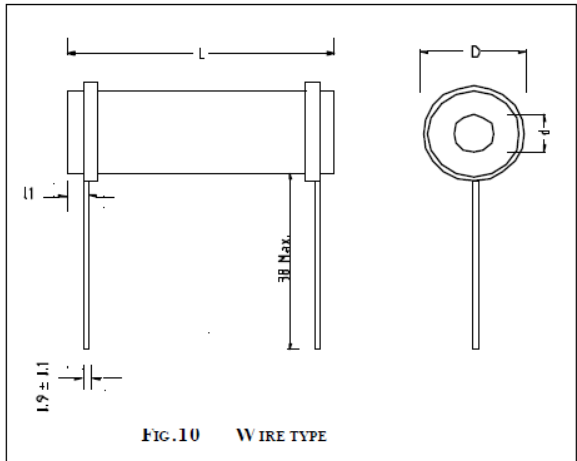


TABLE 3 : JPR SERIES - ADJUSTABLE TERMINATIONS [FIG. 7]
 DIMENSIONS IN MM [IN]
 [PLEASE SEE TABLE 1 FOR DETAILS.]

ALL JPR TYPES FOR WHICH "D" =

	W	H	d	TOL. [MM]	TOL. [IN]
±0.50	±0.20	±3.00	±0.10		
[±0.020]	[±0.008]	[±0.118]	[±0.004]		
9.50	5.00	12.00	2.20		
[0.374]	[0.197]	[0.472]	[0.086]		
15.00	5.00	12.00	2.20		
[0.591]	[0.197]	[0.472]	[0.086]		
19.00	5.00	12.00	2.20		
[0.748]	[0.197]	[0.472]	[0.086]		
26.00	8.00	23.00	4.50		
[1.024]	[0.315]	[0.906]	[0.177]		
33.00	10.00	23.00	5.50		
[1.299]	[0.394]	[0.906]	[0.217]		



General Notes [See Tables 1, 2 and 3]

1. Ref. Fig. 3: Table 1 indicates resistors with end clamps of standard width "W". Alternate clamps are also available: please refer Table 2.
2. "H": The height can be changed to customer requirements on prior request.
3. Normally end clamps of brass are used. Stainless steel clamps can be supplied on prior request.
4. Minimum Value: Specifications of some Standards impose minimum value restrictions. YED supplies down to 0R1 in the normal course, and below this on request.
5. Maximum Value: The maximum value is based on the limitations imposed by the Standards for Fixed and Adjustable Resistors. Values higher than the Standards' maximum can be supplied on request.
6. Flat Resistors on elliptical formers can be supplied on request. They are useful where space is at a premium. They are supplied with mounting strip (Ref. Fig. 5)
7. Non-Inductive resistors are available. The maximum value normally possible in each range is half of the maximum specified for the resistance range.
8. Adjustable terminals available. Please refer Fig. 9 Table 3.
9. Dimensions shown in Table 1 are applicable to normal fixed resistor and may vary for tapped, adjustable, Non inductive and some Mil. style resistors as well as those of alternate shapes and termination.
10. Alternate termination available on specific request are :
 i) Wire type (Fig. 10) ii) Push-fit type and
 III) Ferrule type (Fig. 11)
11. These resistors are not normally intended for PCB mounting. In case mounting on a PCB, please ask for special instruction.
12. For low values larger size terminals than indicated in Table 1.