

Power (Ribbon) Wire-Wound Resistors

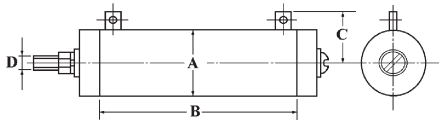
Feature:

- Multi-terminal types and variable types available
- Small in size but capable of carrying high power load
- Resistance value unchanged after long use, good resistivity to short time overload
- High resistivity to heat, small resistance temperature coefficient and the change in resistance with temperature being linear
- Too low or high ohmic value can be supplied on a case to case basis

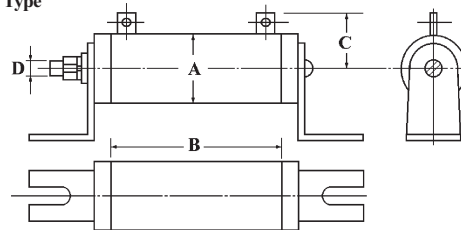


Power Wire-Wound Resistors – QH & QL Type

QH Type



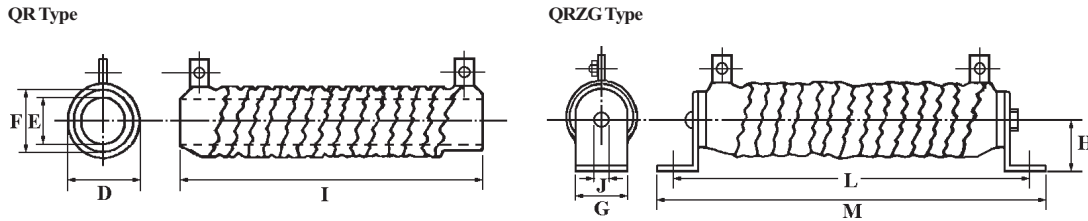
QL Type



Part No.	Wattage	Dimension (mm)				Resistance Range
		A ± 1	B ± 1	C ± 1	D ± 1	
QH / QL0020	20W	19	50	19	10	1Ω~1KΩ
QH / QL0025	25W	19	60	19	10	2Ω~2KΩ
QH / QL0030	30W	19	75	19	10	2Ω~3KΩ
QH / QL0040	40W	19	90	19	10	2Ω~5KΩ
QH / QL0050	50W	28	75	31	16	3Ω~10KΩ
QH / QL0060	60W	28	90	31	16	3Ω~15KΩ
QH / QL0080	80W	28	115	31	16	3Ω~20KΩ
QH / QL00.....100	100W	28	140	31	16	3Ω~30KΩ
QH / QL00.....120	120W	28	165	31	16	4Ω~40KΩ
QH / QL00.....150	150W	28	195	31	16	4Ω~50KΩ
QH / QL00.....200	200W	28	254	31	16	5Ω~60KΩ
QH / QL00.....300	300W	42	254	33	25	8Ω~80KΩ
QH / QL00.....400	400W	42	330	38	25	10Ω~100KΩ
QH / QL00.....600	600W	42	420	38	35	10Ω~200KΩ

Power (Ribbon) Wire-Wound Resistors

Power Ribbon Wire-Wound Resistors – QR & QRZG Type



Part No.	Wattage	Dimension (mm)									Resistance Range
		D ± 1	E ± 1	F ± 1	G ± 1	H ± 1	J ± 1	I ± 1	L ± 1	M ± 1	
QR00.....120	120W	33	16	28	26	22	6	115	148	167	0.2Ω~4Ω
QRZG.....120		33	16	28	26	22	6	140	173	192	
QR00.....150	150W	33	16	28	26	22	6	165	198	217	0.3Ω~6Ω
QRZG.....150		33	16	28	26	22	6	195	228	247	
QR00.....180	180W	33	16	28	26	22	6	254	287	306	0.5Ω~10Ω
QRZG.....180		33	16	28	26	22	6	330	384	410	
QR00.....225	225W	48	25	40	40	40	9	308	334	334	0.8Ω~15Ω
QRZG.....225		48	25	40	40	40	9	384	410	410	
QR00.....300	300W	48	25	40	40	40	9	330	384	410	1Ω~20Ω
QRZG.....300		48	25	40	40	40	9	384	410	410	
QR00.....450	450W	48	25	40	40	40	9	330	384	410	1Ω~20Ω
QRZG.....450		48	25	40	40	40	9	384	410	410	
QR00.....600	600W	48	25	40	40	40	9	330	384	410	1Ω~20Ω
QRZG.....600		48	25	40	40	40	9	384	410	410	

Ordering Procedure (Example: QRZG 225W 5% 1.8Ω B/B)

Wattage:

20 = 20W, 25 = 25W, 30 = 30W, 40 = 40W, 50 = 50W, 60 = 60W, 80 = 80W

00 = for power rating over 100 Watt, please indicate the power rating at the last 3 digits of the part no

Tolerance: J = ±5% , K = ±10%

Resistance Value

E-24 series:

The 1st digit will be "0"; the 2nd & 3rd digits are for the significant figures of the resistance and the 4th digit denotes number of zeros following

Packing Type: B = Bulk/Box

Packing Quantity: 0 = for Bulk/Box packing

Additional Information: 0 = NIL

Product Type:

QH00 = QH Type
 QL00 = QL Type
 QR00 = QR Type
 QRZG = QRZG Type

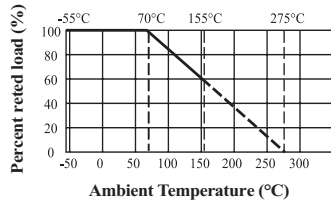
Q R Z G 0 0 J 0 1 8 J 2 2 5

Remark: For power rating beyond 100 Watt, please indicate in the last 3 digits the wattage needed

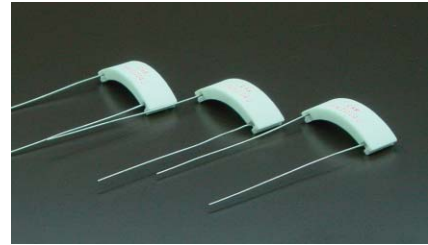
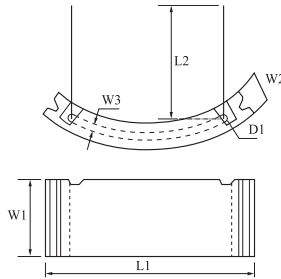
100 = 100W 300 = 300W 120 = 120W 450 = 450W 225 = 225W 600 = 600W

High Power Wire Wound Fixed Resistors:

DERATING CURVE:



DIMENSION:

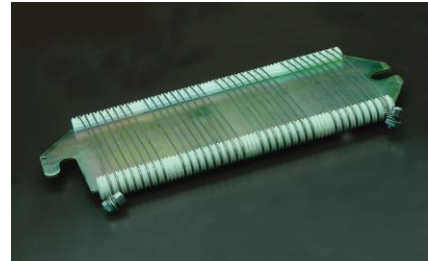
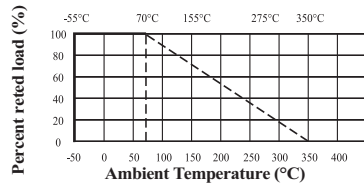


Part No.	Type	L1±1.0	L2±1.00	D1±0.1	W1±0.5	W2±0.2	W3±0.1
CAR025	CAR25W	15.5	80	1.6	14.05	5.0	1.6

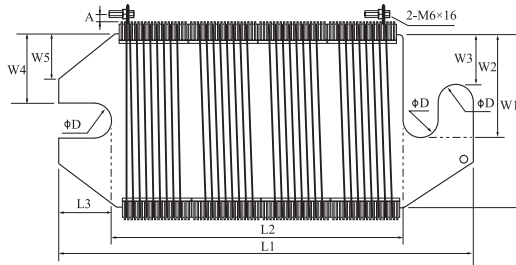
Rated power(W)	25
Max. working voltage(V)	500V
Rated ambient temp	-55°C ~ +155°C
Resistance tolerance	± 5%
Resistance range	1.04Ω
Temperature coefficient	±400 PPM/°C
Short-time overload	Resistance change rate is ±(2%+0.05Ω) Max. with no evidence of mechanical damage.
Dielectric withstanding voltage	No evidence of flashover, mechanical damage, arcing or insulation break down.
Humidity (steady state)	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.
Load life in humidity	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.
Load life	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.

High Power Wire Round Fixed Resistors:

Derating curve:



Dimension:

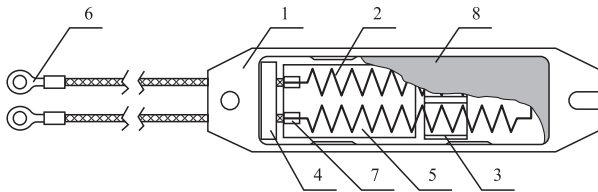
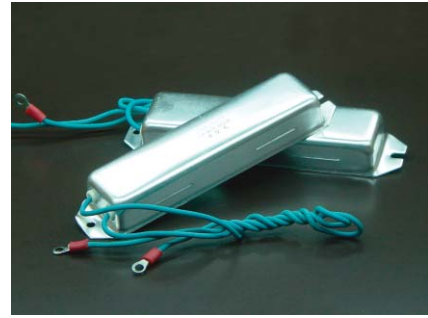
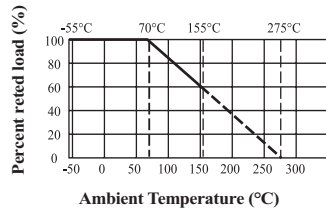


Part No.	Type	L1±1.5	L2±1.0	L3±2.0	W1±1.0	W2±0.5	W3±0.3	W4±0.5	W5±0.3	ØD±0.2	A±1.0
BTR1000	BTR1000W	305	255	21	108	61	40	47	35	14	12.0

Rated power(70°C)	1000W
Resistance range	1.0Ω ~ 10.0Ω
Resistance tolerance	± 5%
Operated temperature range	-55°C ~ +155°C
Temperature coefficient	±350 PPM/°C
Short-time overload	Resistance change rate is ±(2%+0.05Ω) Max. with no evidence of mechanical damage.
Temperature cycling	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.
Humidity (steady state)	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.
Load life in humidity	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.
Load life	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.

High Power Wire-Round Cement Fixed Resistors:

Derating curve:



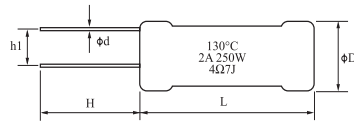
- 1). Aluminous crust
- 2). Alloy wire
- 3). Pedestal
- 4). Ceramic parts
- 5). Mica
- 6). Terminal
- 7). Terminal
- 8). Filling materials

Part No.	Type	L1±1.0	L2±1.0	L3±2.0	A1±0.5	A2±0.5	W1±0.5	W2±0.2	W3±0.2	W4±0.2	D±0.2
HAWR80	HAWR80W	150.0	123.0	300.0	8.0	6.0	34.2	30.0	16.0	4.5	4.5

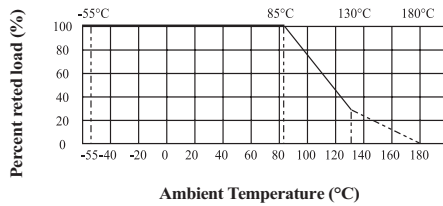
Rated power(70°C)	80W
Resistance range	4.0Ω
Resistance tolerance	± 5%
Operated temperature range	-55°C ~ +155°C
Temperature coefficient	±350 PPM/°C
Short-time overload	Resistance change rate is ±(5%+0.05Ω) Max. with no evidence of mechanical damage.
Dielectric withstanding voltage	No evidence of flashover, mechanical dange, arcing or insulation break down.
Temperature cycling	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.
Humidity	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.
Load life in humidity	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.
Load life	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.

Thermal Fusing Wire-Wound Fixed Resistors:

Dimension



Derating Curve



Type	Rated power (70°C)	Resistance tolerance	Resistance Value	T _F (C)	T _H /T _C (C)	T _M (C)	I _r (A)	U _r (V)
TFR	1W	±5%	4Ω7	130	102	180	2	250

Temperature coefficient Range ≥ 20Ω, ±300 T.R.C(PPM/°C)
Range < 20Ω, ±400 T.R.C(PPM/°C)

Short-time overload Resistance change rate is ±(2%+0.05Ω) Max. with no evidence of mechanical damage.

Insulation Resistance Insulation resistance is 20MΩ max. uper with no evidence of mechanical damage.

Dielectric withstanding voltage No evidence of flashover, mechanical dange, arcing or insulation break down.

Terminal strength with no evidence of mechanical damage.

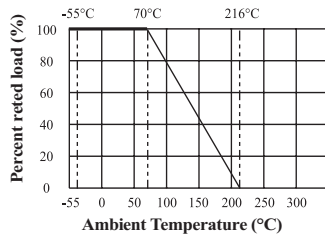
Humidity (steady state) Resistance change rate is ±(3%+0.05Ω) max. with no evidence of mechanical damage.

Load life in humidity Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.

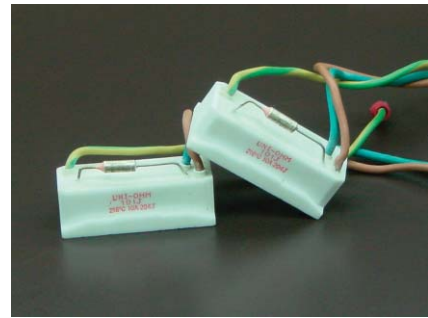
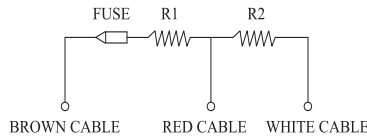
Load life Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.

Thermal Fusing Power Film Fixed Resistors:

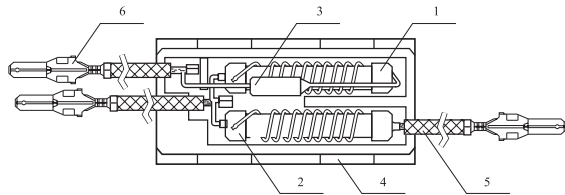
Derating Curve



Electric Diagram

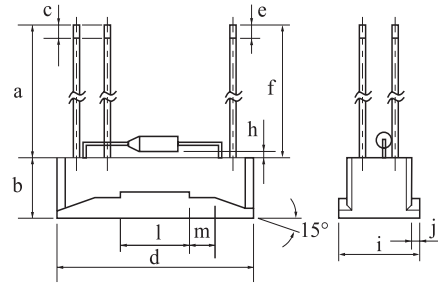


Raw Materials



- 1). Wire Round ROD 2). Wire Round ROD 3). Thermal Fuse
 4).Chramic Cass 5). Silicon Wire 6). Terminal

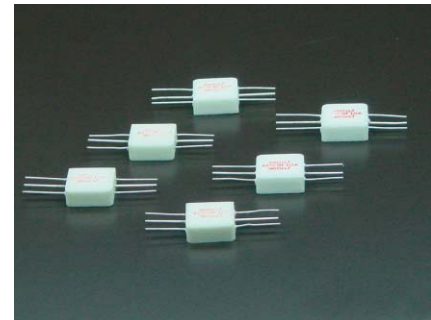
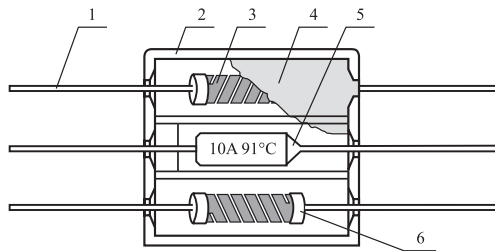
Dimension



Part No.	Type	a±5	b	c	d±1	e	f±5	h±0.5	i±1	j	l	m
TFO 20	TFO 20W	125	16	5	50	5	130	3	24	2.5	15	5

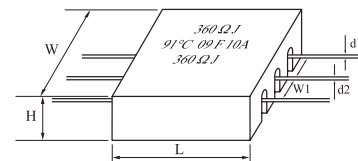
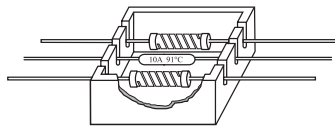
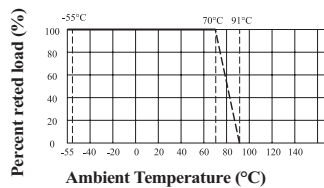
Characteristic	Limits
Temperature coefficient	±350 PPM/°C
Short-time overload	Resistance change rate is ±(2%+0.05Ω) Max. with no evidence of mechanical damage.
Dielectric withstanding voltage	No evidence of flashover, mechanical dange, arcing or insulation break down.
Terminal strength	with no evidence of mechanical damage.
Temperature cycling	Resistance change rate is ±(2%+0.05Ω) Max. with no evidence of mechanical damage.
Humidity	Resistance change rate is ±(2%+0.05Ω) max. with no evidence of mechanical damage.
Load life in humidity	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.
Load life	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.

Thermal Fusing Power Film Fixed Resistors:



1). Terminal lead 2). Ceramic case 3). Resistor film 4). Filling 5). Thermal fuse 6). Cap

Derating Curve



Type	L(Max.)	$\text{Ø}d_1 \pm 0.02$	$\text{Ø}d_2 \pm 0.02$	W(Min.)	W ₁ (Min.)	H(Min.)
TFRC 2W	17.6	0.7	1.0	16.5	5	7.5

Rated power(70°C)	2W
Resistance range	360+360Ω
Resistance tolerance	± 5%
TF(C)	91
Ir(A)	10
Ur(V)	250
Temperature coefficient	±350 PPM/°C
Short-time overload	Resistance change rate is ±(1%+0.05Ω) Max. with no evidence of mechanical damage.
Terminal strength	with no evidence of mechanical damage.
Resistance to soldering heat	Resistance change rate is ±(1%+0.05Ω) Max. with no evidence of mechanical damage.
Solderability	95% coverage min.
Humidity	Resistance change rate is ±(2%+0.05Ω) max. with no evidence of mechanical damage.
Load life in humidity	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.
Load life	Resistance change rate is ±(5%+0.05Ω) max. with no evidence of mechanical damage.