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## Type HCF Series

**Key Features**

**High Power overload capability**

**Low Profile – 15mm thick**

**IP54 ingress protection**

**PTFE insulated Flying Leads for flexibility of connection**




TE Connectivity are pleased to introduce this new wire wound power resistor. Designed and tested to absorb high power overloads they are ideally suited to braking applications. In addition, with a thickness of only 15mm they would be invaluable where space is at a premium.

## Characteristics – Electrical

| Feature | Specification |
|---|---|
| Power Rating | See Performance Specification |
| Tolerance | ±5%, ±10% |
| Maximum Working Voltage* | 1100V |
| Insulation Resistance | ≥1000MΩ @ 1000VDC |
| Dielectric Strength | 3500VAC for 1m Terminal – Aluminium Body |
| TCR | ±200ppm/°C |
| Resistor Element | Wire Wound |
| Flying Lead | 300 mm Standard; PTFE Insulated; 600V; 200°C |
| Resistor Body | Anodized extruded Aluminium Profile |
| Ingress Protection | IP54 |
| Vibration | IEC60068-2-6 |

*Rated Continuous Working voltage (RCWV) = √P*R unless this exceeds the stated Maximum Working Voltage, in which case the lower of the two should always be used.

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## Performance Specification

| Type | HCF80 | HCF110 | HCF166 | HCF216 |
|---|---|---|---|---|
| Power Rating (W) @40°C | 75 | 100 | 160 | 200 |
| Max. Temperature °C | 200 | 260 | 265 | 275 |
| Resistance Range | 4.7Ω - 1KΩ | 6.8Ω - 1KΩ | 10Ω - 1KΩ | 10Ω - 1KΩ |
| For Higher / Lower Resistance Value please enquire | | | | |

## Overload Rating

### HCF80

| Type | Value (Ω) | Power Rating @ 40°C | Pulse load (W) 40°C 120s Duty Cycle | | |
|---|---|---|---|---|---|
| | | | 1.2s Pulse | 7.2s Pulse | 48s Pulse |
| HCF80 | 4.7 | 75 | 1650 | 615 | 165 |
| HCF80 | 10 | 75 | 1650 | 615 | 165 |
| HCF80 | 22 | 75 | 1650 | 615 | 165 |
| HCF80 | 33 | 75 | 1650 | 615 | 165 |
| HCF80 | 47 | 75 | 1650 | 615 | 165 |
| HCF80 | 68 | 75 | 1650 | 615 | 165 |
| HCF80 | 100 | 75 | 1650 | 615 | 165 |
| HCF80 | 150 | 75 | 1650 | 615 | 165 |
| HCF80 | 220 | 75 | 1300 | 615 | 150 |
| HCF80 | 330 | 75 | 1300 | 615 | 150 |
| HCF80 | 470 | 75 | 1100 | 550 | 150 |
| HCF80 | 680 | 75 | 900 | 550 | 150 |
| HCF80 | 1000 | 75 | 1000 | 550 | 150 |

### HCF110

| Type | Value (Ω) | Power Rating @ 40°C | Pulse load (W) 40°C 120s Duty Cycle | | |
|---|---|---|---|---|---|
| | | | 1.2s Pulse | 7.2s Pulse | 48s Pulse |
| HCF110 | 6.8 | 100 | 2200 | 1025 | 245 |
| HCF110 | 10 | 100 | 2200 | 1025 | 245 |
| HCF110 | 22 | 100 | 2200 | 1025 | 245 |
| HCF110 | 33 | 100 | 2200 | 1025 | 245 |
| HCF110 | 47 | 100 | 1900 | 975 | 245 |
| HCF110 | 68 | 100 | 1900 | 950 | 245 |
| HCF110 | 100 | 100 | 1600 | 875 | 245 |

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## HCF110 (continued)

| Type | Value (Ω) | Power Rating @ 40°C | Pulse load (W) 40°C 120s Duty Cycle | | |
|---|---|---|---|---|---|
| | | | 1.2s Pulse | 7.2s Pulse | 48s Pulse |
| HCF110 | 150 | 100 | 1600 | 850 | 245 |
| HCF110 | 220 | 100 | 1600 | 875 | 245 |
| HCF110 | 330 | 100 | 1600 | 850 | 245 |
| HCF110 | 470 | 100 | 1600 | 850 | 245 |
| HCF110 | 680 | 100 | 1600 | 910 | 245 |
| HCF110 | 1000 | 100 | 1200 | 800 | 175 |

## HCF166

| Type | Value (Ω) | Power Rating @ 40°C | Pulse load (W) 40°C 120s Duty Cycle | | |
|---|---|---|---|---|---|
| | | | 1.2s Pulse | 7.2s Pulse | 48s Pulse |
| HCF166 | 10 | 160 | 5700 | 1650 | 390 |
| HCF166 | 22 | 160 | 5700 | 1650 | 390 |
| HCF166 | 33 | 160 | 5700 | 1600 | 390 |
| HCF166 | 47 | 160 | 5700 | 1650 | 390 |
| HCF166 | 68 | 160 | 5700 | 1600 | 390 |
| HCF166 | 100 | 160 | 5000 | 1500 | 390 |
| HCF166 | 150 | 160 | 5000 | 1500 | 390 |
| HCF166 | 220 | 160 | 5000 | 1500 | 390 |
| HCF166 | 330 | 160 | 5000 | 1500 | 390 |
| HCF166 | 470 | 160 | 4500 | 1500 | 390 |
| HCF166 | 680 | 160 | 4000 | 1500 | 390 |
| HCF166 | 1000 | 160 | 3500 | 1500 | 390 |

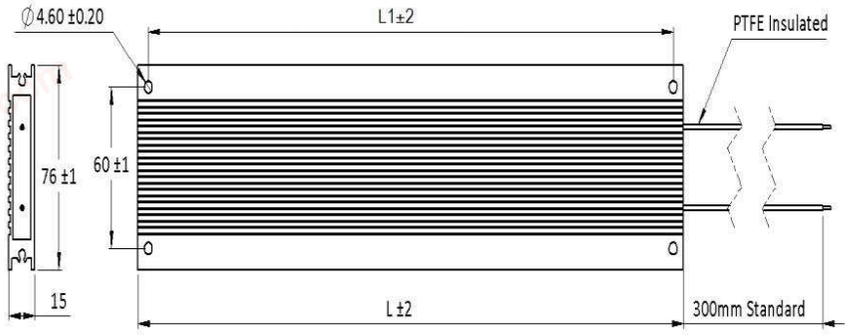
## HCF216

| Type | Value (Ω) | Power Rating @ 40°C | Pulse load (W) 40°C 120s Duty Cycle | | |
|---|---|---|---|---|---|
| | | | 1.2s Pulse | 7.2s Pulse | 48s Pulse |
| HCF216 | 10 | 200 | 10500 | 2200 | 500 |
| HCF216 | 22 | 200 | 8800 | 2200 | 500 |
| HCF216 | 33 | 200 | 8800 | 2200 | 500 |
| HCF216 | 47 | 200 | 8800 | 2200 | 500 |
| HCF216 | 68 | 200 | 8800 | 2200 | 500 |
| HCF216 | 100 | 200 | 8800 | 2200 | 500 |
| HCF216 | 150 | 200 | 7000 | 2200 | 500 |
| HCF216 | 220 | 200 | 7000 | 2200 | 500 |
| HCF216 | 330 | 200 | 7000 | 2200 | 500 |
| HCF216 | 470 | 200 | 7000 | 2200 | 500 |
| HCF216 | 680 | 200 | 7000 | 2200 | 500 |
| HCF216 | 1000 | 200 | 5000 | 2000 | 500 |

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## Dimensions




| Type | L (mm) | L1 (mm) |
|---|---|---|
| HCF80 | 80 | 56 |
| HCF110 | 110 | 98 |
| HCF166 | 166 | 154 |
| HCF216 | 216 | 204 |

## Environmental Characteristics

| Characteristic | Requirement | Test Method |
|---|---|---|
| Load Life | ΔR ±10% | Resistors mounted in vertical orientation, leads downwards. RCWV 1000Hrs – 90 minutes on, 30 minutes off |
| Damp Heat Steady State | ΔR ±1% | Humidity chamber 40°C/95% humidity for 56 days |
| Insulation Resistance | >2000MΩ | Tested for insulation resistance with a calibrated meter at 1000V |
| Dielectric Strength | Leakage Current <500µA | 3500VAC for 1m Terminal – Aluminium Body |
| Pulse Overload | No Physical Damage ΔR ±5% | Specified overload power applied for 1.2, 7.2 and 48 seconds within a 120 seconds cycle comprising of both on and off periods. Test cycle repeated 10,000 times |
| Ingress Protection | IP54 | IP Testing carried out at a NABL accredited test lab. The resistors were tested for dust and moisture ingress resistance under clauses 13.5.1, 13.5.2 and 14.2.4 and 14.3. Resistors passed the test without any issues. |

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| Characteristic | Requirement | Test Method |
|---|---|---|
| Vibration | IEC 60068-2-6: Test Fc | The samples were mounted on a vibration table. The frequency from 2-200-2 Hz was traversed with one octave per minute. In the frequency interval 2-9 Hz the samples were vibrated with an amplitude of 3.0 mm, above 9 Hz frequency with an acceleration of 1 g. The duration was 10 sweeps in each of the three mutually perpendicular axes. Passed with no issues. |

## Packaging

Resistors will be packaged individually in boxes.

## Marking

Resistors will be marked with Type, Resistance value, Tolerance Code and date / batch code.

HCF80J4R7J

### How To Order

| HCF | 80 | J | 4R7 | J |
|---|---|---|---|---|
| Series | Size | Tolerance | Value | Connection |
| HCF - Aluminium Housed Breaking Resistor | 80 – 75W<br>110 – 100W<br>166 – 160W<br>216 – 200W | J – 5%<br>K – 10% | 10R - 10Ω<br>100R - 100Ω<br>1K0 – 1KΩ | J – Flying leads |