# HIGH SURGE RESISTORS, 1/8W to 12W

# PR SERIES

RoHS Term.W is RoHS compliant & 260°C compatible

RESISTORS•CAPACITORS•COILS•DELAY LINES

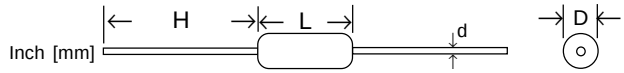

- ❒ Cost effective high-voltage surge resistors to 200 joules
- ❒ Available on RCD's exclusive ***SWIFT***™ program
- ❒ Molded surface mount version available (PRM series)

## OPTIONS

- ❒ Opt. ER: Group A Screening per MIL-R-39008 RCR
- ❒ Opt. S: Group A & 24-hr burn-in at 1.5X rated W@25°C[7]
- ❒ Opt. F: Flameproof coating
- ❒ Opt. B: Increased power (see Spefications chart)
- ❒ Opt. X: Non-inductive (see Performance Char. table)

**Excellent Low Cost Replacement for Composition Resistors**

Series PR pulse resistors withstand higher energy pulses than conventional film & wirewound types, without the performance disadvantages of carbon comp resistors. The heavy duty construction features a high thermal conductivity core core and coating, enabling improved thermal transfer, long term stability, and environmental performance. Series PR satisy a wide variety of pulse applications including lightning, snubber, in-rush current, capacitor charge, etc.

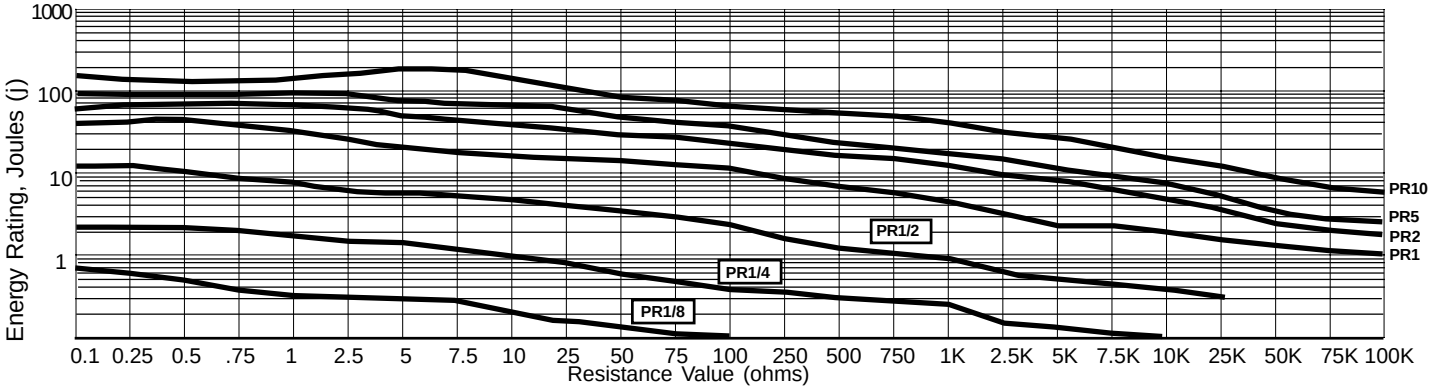



## SPECIFICATIONS

| RCD Type | Wattage Rating | | Max. Continuous Voltage[1,5,8] | Max. Peak Pulse Voltage[2,5,8] | Resistance Range[5] | L (Body Length) | D[6] (Body Dia.) | d±.003 [.08] | H[4] (min) |
|---|---|---|---|---|---|---|---|---|---|
| | Standard | Option B | | | | | | | |
| PR1/8 | 1/8W | 1/2W | 150V | 2KV | 0.1Ω-2K | .145±.025 [3.69±.64] | .062±.015 [1.6±.38] | .018 [.46] | 1.0 [25.4] |
| PR1/4 | 1/4W | 1W | 250V | 3.5KV | 0.1Ω-10K | .240±.032 [6.1±.8] | .085±.025 [2.16±.64] | .022 [.56] | 1.375 [35] |
| PR1/2 | 1/2W | 2W | 350V | 5KV | 0.1Ω-24K | .375±.040 [9.2±1] | .156±.025 [3.96±.64] | .032 [.8] | 1.375 [35] |
| PR1 | 1W | 4W | 500V | 10KV | 0.1Ω-100K | .600±.040 [15.2±1] | .225±.032 [5.72±.8] | .032 [.8] [3] | 1.375 [35] |
| PR2 | 2W | 5W | 750V | 15KV | 0.1Ω-200K | .875±.062 [22.2±1.6] | .312±.032 [7.92±.8] | .040 [1] [3] | 1.375 [35] |
| PR5 | 5W | 7W | 800V | 18KV | 0.1Ω-220K | 1.05±.062 [26.7± 1.6] | .350±.032 [8.89±.8] | .040 [1] | 1.375 [35] |
| PR10 | 10W | 12W | 1000V | 25KV | 0.1Ω-300K | 1.72±.062[43.7±1.6] | .350±.032 [8.89±.8] | .040 [1] | 1.375 [35] |

[1] Max voltage = √(PxR), not to exceed value listed. [2] Pulse voltage & energy capability is dependent on res.value, waveform, repetition rate, & environmental conditions (refer to R-42 for derating factors).
[3] .040" (1mm) lead dia. is available on PR1 (specify PR1-18), .032" [.8mm] lead dia. is available on PR2 (specify PR2-20) [4] Lead length is for bulk packaging, taped parts may be shorter (consult taping dimensions)
[5] Expanded range avail. [6] Allow .024" [.6mm] additonal for Opt.X or values <1Ω [7] PR1/8 - PR2 with Opt. S receive burn-in at 150% rated W, PR5 - PR10 & Opt.B at 100% rated W [8] Multiply by 0.7 on Opt.X parts

## SURGE CAPABILITY




## PERFORMANCE CHARACTERISTICS, Typ.

| | |
|---|---|
| Derating, Wattage & Voltage | 1.25%/°C >70°C (Opt. B to be derated 0.8%/°C >25°C) |
| Max.Induc*: Opt. X≤50Ω<br>Max.Induc*: Opt. X>50Ω | 0.2uH PR1/8-1/2, .3uH PR1-2<br>0.37uH PR1/8-1/2, .6uH PR1-2 |
| Short-time Overload | ±0.5% |
| Temperature Cycling | ±0.5% |
| TCR (20 & 50ppm avail.) | ±100ppm/°C(<0.2Ω=200ppm) |
| Moisture Resistance | ±1% |
| Shock and Vibration | ±0.2% |
| Effect of Soldering | ±0.2% |
| Voltage Coefficient | ±0.005%/V |
| Load Life | ±0.5% Std, ±1% Opt.B |
| Operating Temp Range | -55 to +150°C, +275°C avail. |
| Dielectric Strength | 500V (1KV avail.) |

* specify Opt.75 for induc levels 50% that of Opt.X, or Opt.76 for 33% that of Opt.X

## APPLICATION NOTE

Use chart above to select model to meet desired surge level. Pulse not to exceed peak V & j ratings (derate 30% for Opt.X), and average power during repetitive pulses nte rated W. 30% safety factor is recommended for infrequent pulses, 50% typ. for repetitive pulses (refer to Note R42 for derating factors attributable to pulse width, rep. rate, temp., altitude, humidity). Verify by evaluating under worst-case conditions. Depending on specifics, PR series can often satisfy the surge requirements of UL-217, -268, -294, -497, -508, -913, -943, -991, -1459, -1971, ANSI/IEEE C62.41, CCITT (Rec. K17), Bellcore TR-NWT-001089 & TR-TSY-000057, CSA C22.2-225, IEC 664, IEC 801.5, IEEE587, Can.Doc. CS-03, FCC Part 68., etc. Consult factory for assistance.

## P/N DESIGNATION:

PR1/2 ☐ - 102 - K T ☐ W

**RCD Type**

**Options**: X, S, F, ER, B (leave blank if std)

**Resis. Code 1% tol:** 3 signif. figures & multiplier,
e.g. R100=0.1Ω, 1R00=1Ω, 10R0=10Ω, 1000=100Ω, 1001=1K.
**2%-10%:** 2 signif.fig. & multiplier (R10=0.1Ω, 1R0=1Ω, 100=10Ω, 102=1K)

**Tolerance**: J=5% (standard), F=1%, G=2%, K=10%

**Packaging**: B = bulk, T = Tape & Reel

**Optional TC**: 20 =20ppm, 50= 50ppm (leave blank if standard)

**Termination:** W= Lead-free, Q= Tin/Lead (leave blank if either is acceptable)

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