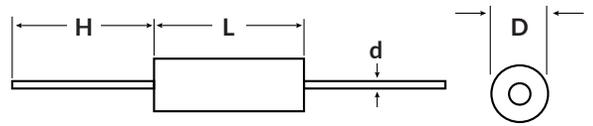
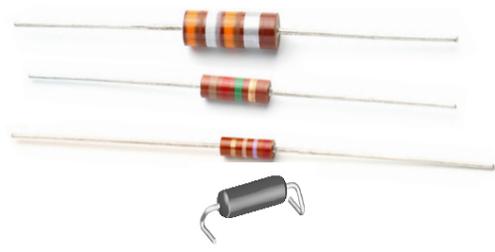


# COMPOSITION RESISTORS

## CC SERIES - 1/4W to 1W



# RESISTOR



### FEATURES

- ▶ Low inductance / high frequency performance
- ▶ High surge / high pulse capability
- ▶ Choice of tin or tin-lead termination finish

### OPTIONS

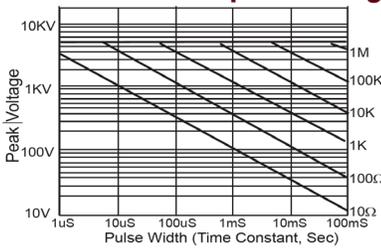
- ▶ **Opt. 37:** Group A screening per MIL-R-39008
- ▶ **Opt. EU8:** Group A & B modified screening plan
- ▶ **Opt. ZZ:** Z-formed leads for surface mounting
- ▶ **Other:** Custom marking, custom testing, cut & formed leads, hot solder dipped leads, pre-conditioning & numerous other options.

Composition resistors are considered one of the most reliable of all electronic components. There are no windings or film, resulting in a non-inductive resistor with excellent surge and high-frequency characteristics. The parts are also utilized in fusing applications. Hi-Rel Group A or A & B Screening per MIL-R-39008 is available.

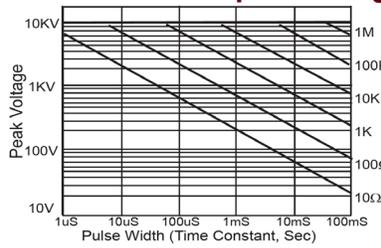
RCD TYPE	WATTAGE @ 70°C <sup>1</sup> (W)	MAXIMUM VOLTAGE <sup>2</sup> (V)	PEAK PULSE VOLTAGE <sup>3,5</sup> (KV)	ENERGY RATING <sup>3,5</sup> 1 SEC (J)	DIELECTRIC STRENGTH (V)	RESISTANCE RANGE (E-24 Std Values)	DIMENSIONS In [mm]			
							L <sup>4</sup>	D <sup>4</sup>	d	H TYP (bulk pack)
CC1/4	0.25	250	6	1.8	140	1Ω - 22M	0.250±0.032 [6.35±0.80]	0.090±0.016 [2.30±0.40]	0.024±0.003 [0.60±0.076]	1.0 [25.4]
CC1/2	0.50	350	10	6.4	700	1Ω - 22M	0.374±0.040 [9.50±1.02]	0.140±0.018 [3.56±0.45]	0.028±0.004 [0.70±0.10]	1.0 [25.4]
CC1	1.00	500	14	20	1000	2Ω - 1.2M	0.610±0.050 [15.5±1.27]	0.232±0.022 [5.90±0.55]	0.036±0.006 [0.90±0.15]	1.0 [25.4]

<sup>1</sup> Derate W & V by 1.25%/°C above 70 °C. <sup>2</sup> Rated continuous voltage determined by E=(PR)<sup>1/2</sup>. E not to exceed the max value listed. <sup>3</sup> Energy capability varies with pulse duration. Rating is based on a 1 sec overload. Shorter durations have significantly lower joule ratings. <sup>4</sup> Allow 0.032 [0.80] additional to L and D on parts with optional conformal coating.

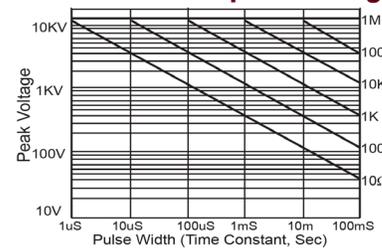
### CC1/4 Peak Pulse Rupture Voltage<sup>5</sup>



### CC1/2 Peak Pulse Rupture Voltage<sup>5</sup>



### CC1 Peak Pulse Rupture Voltage<sup>5</sup>

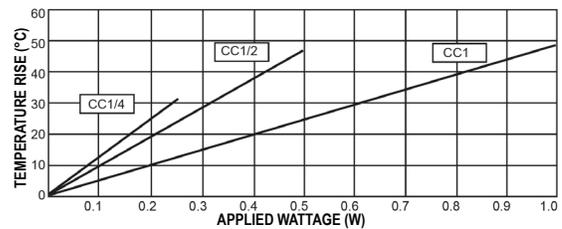


<sup>5</sup> Peak pulse rupture voltage and joule ratings are dependent on resistance value, pulse wave form & repetition rate. Charts indicate the approximate rupture voltage based on capacitive discharge non-inductive circuit, pulse width equates to one RC time constant. Refer to Application Guide below and Engineering Guide R-46. Verify selection by evaluating sufficient prototypes under worst case conditions. Consult factory for assistance on all surge and fusing applications.

### TYPICAL PERFORMANCE (10Ω - 1M TYP)

Operating Temperature Range	-55°C to +125°C
Short Time Overload	±2.5%
Moisture Resistance	±10%
Load Life (1,000 hrs)	±10% (MIL-R-39008 3.21.1.2)
Thermal Shock	±4%
Temperature Coefficient (25°C - 100°C)	±0.15%/°C
Shock & Vibration	±2%
Terminal Strength (direct pull)	5 lbs. MIN
Standard Marking (Color Code Table)	4 bands (or alpha numeric, 5th FR band)

### TEMPERATURE RISE

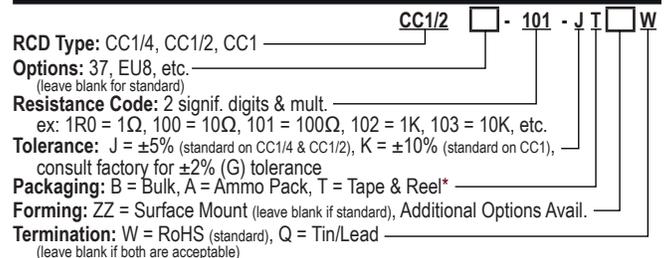


### APPLICATION GUIDE (refer to R-46 guide for additional info)

CC's are often utilized in high frequency, fusing or pulse applications, including snubbers, lightning surges, grounding resistors, RFI suppression, etc. Depending on the application, CC's can often satisfy requirements of GR1089, ITU-K20, IEC61000-4-x, etc. For fusing applications, use the peak pulse rupture voltage graphs and energy ratings as a rough starting point to determine typical fusing levels. For surge applications, employ a minimum 50% derating (greater for multiple surges, elevated temperatures, etc.). Fusing and surge capability can vary fairly significantly so be sure to consult RCD on applications that involve any surges or fusing, and verify selection by evaluating under worst case conditions. Series CC resistors are not intended for life-support applications.

Composition construction isn't as stable as other types of resistors, especially in humid conditions, and therefore not suitable for precision applications (refer to RCD's PR and CFZ Series for improved stability). In accordance with MIL-R-39008, parts that have shifted beyond the nominal tolerance due to moisture shall be baked by the user at 100°C to recondition the resistance value back into tolerance.

### PART NUMBER DERIVATION



\* Tape & Reel Specs  
Standard Qty/Reel = 5000 pcs (CC1/4), 4000 / 5000 pcs (CC1/2), 1000 pcs (CC1)  
(non-standard quantity & cut reels available)