TT electronics
Welwyn Components

# New Product Notification

27th Mar 2008

| Release | |
|---|---|
| Welwyn Sales Force | * |
| TT electronics Sales Channels | * |
| Distributors & Agents | * |

Product

**CC**

| Datasheet Status | | |
|---|---|---|
| Preliminary | Target for development. Not supported by test data. Not for customer use. | |
| Provisional | Ongoing development. Incomplete test data. Limited customer use. | |
| Publication | Approved for website / catalogue. Full customer use. | * |

## Product Description

CC is an axial hot-moulded carbon composition resistor in 1 and 2W sizes. The CC1 replaces the existing CCR1 which is being withdrawn and CC2 adds a larger size. Composition resistors have no film or wire element but the rod itself is a resistive element which exhibits poor precision but excellent pulse performance.

## Key Features

- High pulse energy
- Wide ohmic range 100R to 50K
- Low inductance

## Target Markets / Applications

Medical - defibrillator pulse protection
Industrial – rapid high voltage line discharge

## Competitors' Equivalents

The following products may be replaced by CC:
Ohmite OA, OX (CC1), OY (CC2)
Koa HPC1 (CC1), HPC2 (CC2)
and, for very old designs,
Allen Bradley GB (CC1), HB (CC2)

## Target Launch Date

Available now.

PROVISIONAL

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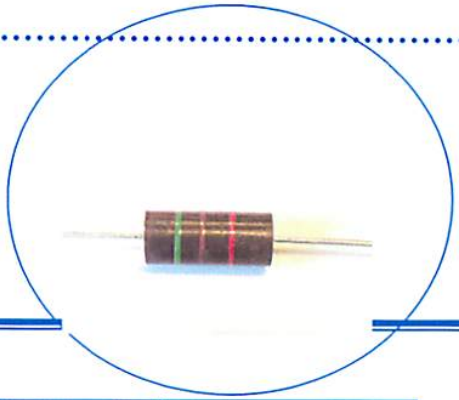
# Carbon Composition Resistors

CC Series

- **Hot moulded carbon composition**
- **High pulse voltage and energy capability**
- **Non-inductive**



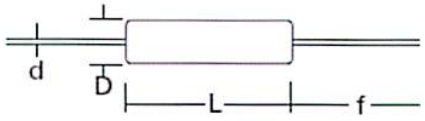
## Electrical Data

| | | CC1/2 | CC1 | CC2 |
|---|---|---|---|---|
| Power rating at 25°C | watts | 0.5 | 1 | 2 |
| Resistance range | ohms | 100R – 10K | 100R – 50K | 100R – 10K |
| Maximum pulse voltage | volts | See pulse graphs | | |
| TCR (20 to 70°C) | ppm/°C | < ±1000 | | |
| Resistance Tolerance | % | 10 or 20 * | | |
| Standard Values | | E12 | | |
| Ambient temperature range | °C | -55 to 125 | | |
| Thermal Impedance | °C/watt | 80 | 51 | 28 |

* Tolerance applies to date of manufacture. As in all carbon composition parts value drift in storage is possible. This is typically ±3% in one year and ±5% in 2 years.

## Physical Data

| Dimensions (mm) & Weight (g) | | | | | |
|---|---|---|---|---|---|
| Type | L | D | d | f | Wt. nom. |
| **CC1/2** | 9.5 ±0.8 | 3.6 ±0.2 | 0.7 ±0.05 | 27 ±2 | 0.4 |
| **CC1** | 15 +1.5/0-5 | 6 +0.2/-0.1 | 0.8 ±0.05 | 28 ±1 | 1.1 |
| **CC2** | 18 +1.5/0-5 | 8 +0.2/-0.1 | 1.0 ±0.05 | 28 ±1 | 2.4 |




## Construction

CC series resistors are produced using a hot moulded carbon composition material, which is varied to produce the required resistance value. The leads are moulded into the resistor. Finally these are coated and band marked.

## Solvent Resistance

The body protection and marking are resistant to all normal industrial cleaning solvents suitable for printed circuits.

## Marking

CC series resistors are colour coded. Resistors with 20% tolerance have three bands indicating value, and resistors with 10% tolerance have four bands indicating value and tolerance in accordance with IEC62.



Issue X 01/04/08



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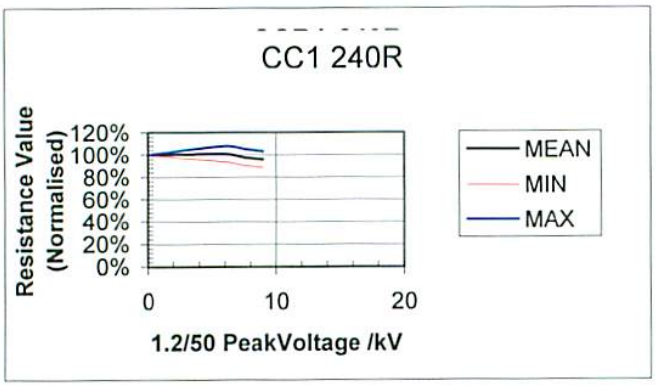
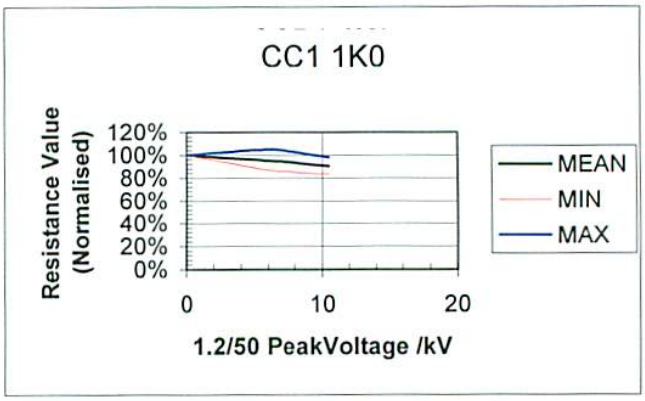
## Performance Data

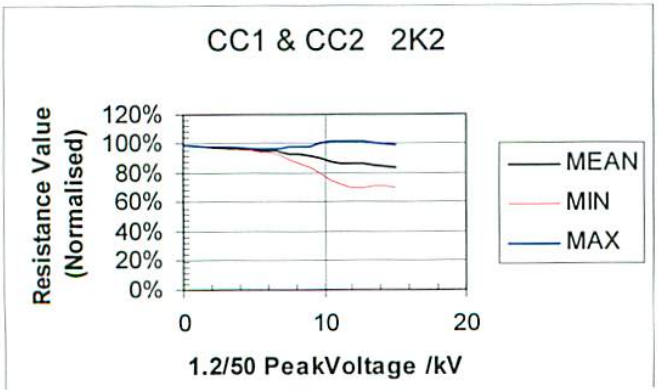
| | | Typical |
|---|---|---|
| Load at rated power 1000hrs @ 25°C | ±ΔR% | 8 |
| Dry heat 1000hrs @ 125°C | ±ΔR% | 8 |
| Long Pulse 100ms at 60 x Rated Power | ±ΔR% | 2 |
| Short term overload 2s at 6.25 x Rated Power | ±ΔR% | 2 |
| Derating from rated power @ 25°C | | Zero at 125°C |
| Climatic sequence | ±ΔR% | 8 |
| Vibration | ±ΔR% | 2 |
| Temperature rapid change | ±ΔR% | 2 |
| Resistance to solder heat | ±ΔR% | 2 |
| Isolation voltage | V | 500V |

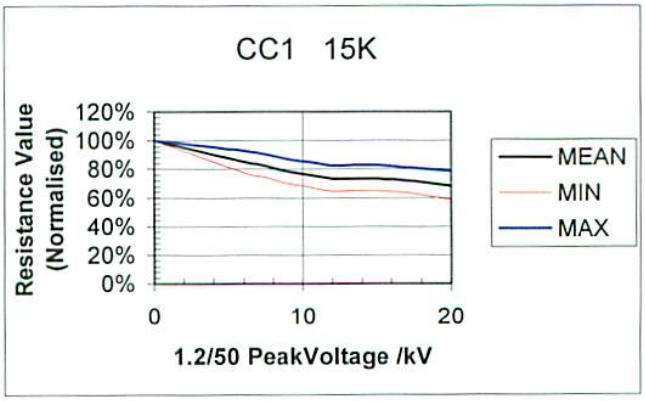
## Pulse Performance

The graphs below show the value changes resulting from applying multiple pulses of increasing peak voltage. The pulse shape was 1.2/50μS as defined in IEC 6100-4-5 / ANSI C62.41. The highest voltage plotted on each graph represents the maximum peak voltage for that resistance value.



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# Carbon Composition Resistors

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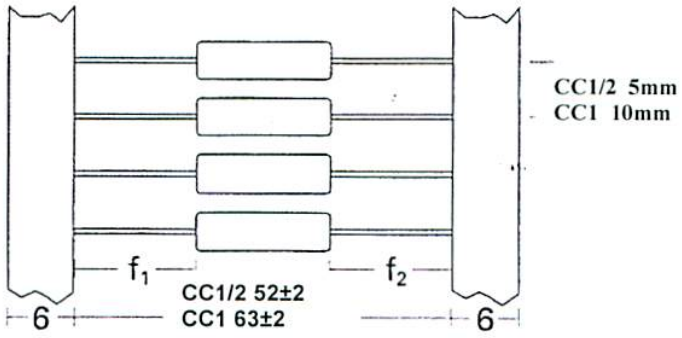
## Packaging

CC1/2 parts are supplied tape packed on reel. Quantity per reel: 2000.

CC1 & CC2 parts are supplied as standard loose packed in boxes. Quantity per box: 2400 (CC1) & 1200 (CC2).

CC1 can be supplied by special request tape packed as shown in an ammo box. Quantity per box: 960.




Body Location $f_1 - f_2 \leq 1.4$ mm

## Ordering Procedure

Example: CC1 at 6.8 kilohms and 10% tolerance in a bulk pack box of 2400 pieces -

**C C 1 – 6 K 8 K B 2 4**

Type

Value (use IEC62 code)

Tolerance (use IEC62 code)

| | |
|---|---|
| K | 10% |
| M | 20% |

Packing

| | | | | |
|---|---|---|---|---|
| T2 | Tape | CC1/2 | 2000/reel | Standard |
| B24 | Bulk | CC1 | 2400/box | Standard |
| B12 | | CC2 | 1200/box | |
| T096 | Tape | CC1 | 960/reel | Non-standard |



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