

Power Resistors Cooled by Auxiliary Heatsink (Not Supplied) Thick Film Technology



FEATURES

- System without external radiation
- High power / volume ratio
- Non-inductive
- Screw-on outputs
- Possible configuration with 2 or 3 resistors

DESIGN SUPPORT TOOLS

[click logo to get started](#)

3D
Models
Available

STANDARD ELECTRICAL SPECIFICATIONS

| MODEL | VALUE | RESISTANCE RANGE Ω | MAX. RATED POWER $P_{75^\circ\text{C}}$ W | TOLERANCE $\pm \%$ | TEMPERATURE COEFFICIENT $\pm \text{ppm}/^\circ\text{C}$ | E-SERIES OHMIC VALUES |
|----------|--------|------------------------------|--|-----------------------|---|-----------------------------|
| RCEC 400 | Single | 1.0 to 1M | 400 | 10, 5 ⁽¹⁾ | 150 (typical) | E 24 |
| | Double | 1.5 to 1M | 2 x 180 | 10, 5 ⁽¹⁾ | 150 (typical) | E 24 |

Note

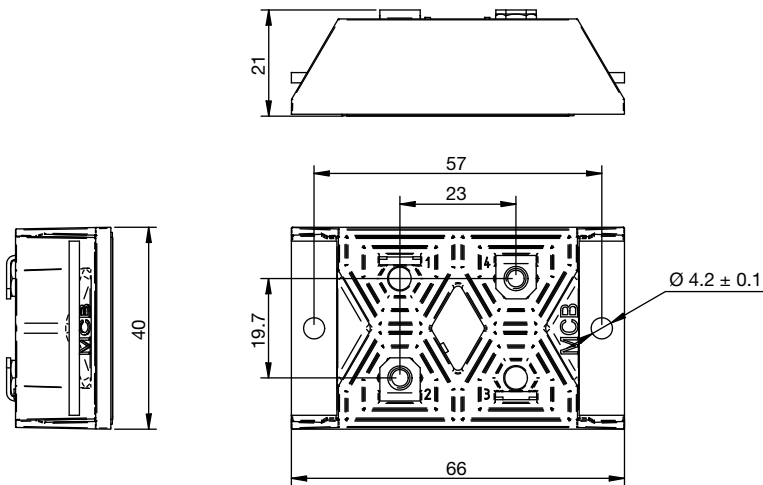
⁽¹⁾ On request

MECHANICAL SPECIFICATIONS

| | |
|-----------------------------|---------------------------------------|
| UL 94 flame classifications | Material in accordance with UL 94 V-0 |
| Resistive element | Thick film |
| Substrate | Alumina |
| Encapsulation | Resin filled in housing |

TECHNICAL SPECIFICATIONS

| PARAMETER | SINGLE VALUE | DOUBLE VALUE |
|--|---|--------------|
| Operating temperature range | -55 °C to +150 °C | |
| Maximum operating voltage | 4000 V | |
| Dielectric strength V_{RMS} (50 Hz / 1 min) | 6000 V | |
| Creepage distance | > 42 mm | |
| Clearance distance | > 12 mm | > 10 mm |
| CTI index | > 600 | |
| Partial discharge | < 20 pC at 5000 V_{eff} | |
| Inductance | < 40 nH | |
| Insulation resistance | $10^5 \text{ M}\Omega$ at 500 V_{DC} | |
| Weight (max.) | 75 g | |

DIMENSIONS in millimeters

PERFORMANCES

| TESTS | | CONDITIONS | REQUIREMENTS | TYPICAL VALUES |
|-------------------------|--------------|--|--------------------------------|----------------|
| Momentary overload | Single value | 800 W / 10 s | 2 % | 0.2 % |
| | Double value | 2 x 360 W / 10 s | | |
| Humidity (steady state) | | 56 days, 40 °C, 95 % HR | 2 % or 0.05 Ω ⁽¹⁾ | 0.2 % |
| VRT | | -55 °C to +125 °C 5 cycles | 2 % or 0.05 Ω ⁽¹⁾ | 0.2 % |
| Mechanical shock | | IEC 60115-4 clause 2-3-6 | 0.5 % or 0.05 Ω ⁽¹⁾ | 0.25 % |
| Vibration | | IEC 60115-4 clause 2-3-2 | 0.5 % or 0.05 Ω ⁽¹⁾ | 0.25 % |
| Terminals strength | | 130 Ncm / 100 N | 1 % or 0.05 Ω ⁽¹⁾ | 0.1 % |
| Endurance | | 2000 cycles P _n 30 min / 30 min | 5 % | 0.2 % |

Note
⁽¹⁾ The higher of either value

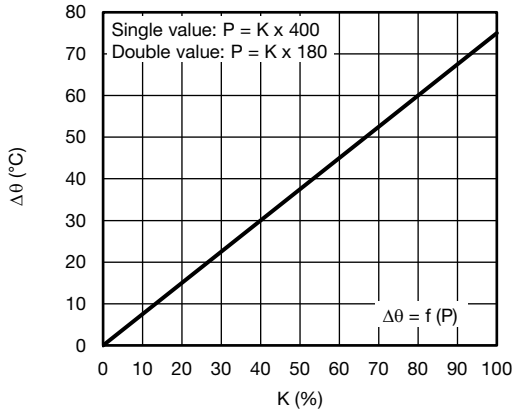
ENERGY ABSORPTION
Single Value

 Repetitive operation: 2 J/t = 50 μs
 Other t values: consult us

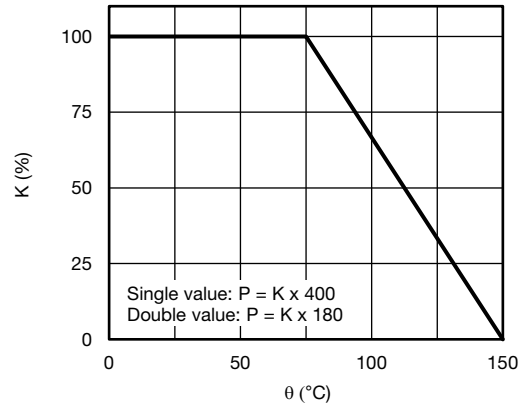
Double Value

 Repetitive operation: 2 J/t = 50 μs
 Other t values: consult us

DISSIPATION

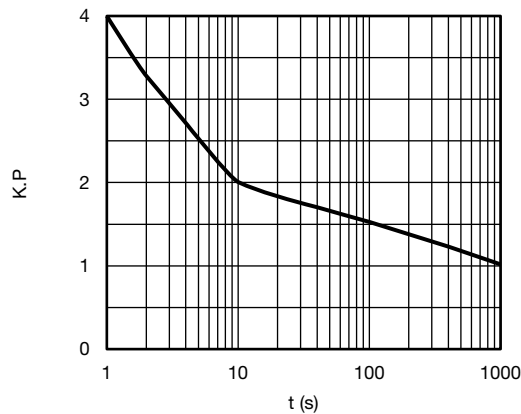


Temperature Rise as a Function of the Power Applied
Overall Thermal Resistance 0.1875 °C/W
(Double Value: 0.2083 °C/W)



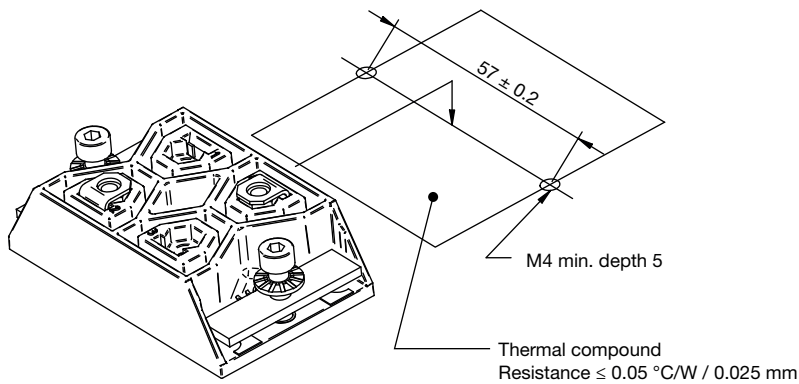
Permanent Applicable Power as a Function
of Heatsink Temperature

OVERLOAD



Intermittent Overload (Exceptional Operation)

ASSEMBLY



Maximum tightening torque:
150 Ncm, mechanical mounting
130 Ncm, electrical mounting



COOLING

The temperature of the heatsink may be maintained at the specified values with:

- Forced air ventilation
- Internal circulation of a cooling liquid
- Heatsink contact surface: Ra 6.3 μm
- Evenness defect: 0.05 mm max.
- Surface temperature gradient (isotherm): 20 °C max.
- Thermal compound not supplied (resistance ≤ 0.05 °C/W / 0.025 mm)

The user must select the thermal resistance of the heatsink according to the power applied.

| ORDERING INFORMATION | | | | | | | | | |
|----------------------|-------|----------------------------|-------------------------------|--|-------------------------------------|-------------------------|-------------------------------------|--------|-----------|
| RCEC | 400 | GD | MP | 100K | 5 % | 100K | 5 % | XXX | BO20 |
| MODEL | STYLE | | OPTION | RESISTANCE VALUE | TOLERANCE | RESISTANCE VALUE | TOLERANCE | CUSTOM | PACKAGING |
| | | Single Double Triple | Common point for double value | Value for single First value for double | ± 5 % ± 10 % Other on request | Second value for double | ± 5 % ± 10 % Other on request | | |

| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | | | |
|--------------------------------|---|---|---|--|---|---|---------------------|---|---|-----------|---|-----------------------------------|---|---|--|--|--|
| R | C | E | C | 4 | 0 | 0 | G | S | 2 | R | 7 | 0 | J | B | | | |
| 1 | | | | | | 2 | | 3 | | | 4 | 5 | 6 | | | | |
| 1 | | 2 | | 3 | | | 4 | | | 5 | | 6 | | | | | |
| GLOBAL MODEL | | LEAD | | OHMIC VALUE | | | TOLERANCE | | | PACKAGING | | INDUSTRIALIZATION NUMBER | | | | | |
| RCEC 400 | | Simple = GS Double = GD Triple = GT | | The first three digits are significant figures and the last specifies the number of zeros to follow, R designates decimal point. 4702 = 47 kΩ 48R7 = 48.7 Ω In case of double or triple value => value = sum of the 2 or 3 values | | | J = 5 % K = 10 % | | | B = box | | 3 specific digits (if applicable) | | | | | |

| EXAMPLES | | |
|----------|---|--------------------|
| MODEL | DESCRIPTION | PART NUMBER |
| RCEC 400 | RCEC 400 GS 2U7 5 % BO20 | RCEC400GS2R70JB |
| RCEC 400 | RCEC 400 GD MP 12K 10 % 12K 10 % 998 BO20 | RCEC400GD2402KB998 |



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru