

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



## FEATURES

- Cold system without external radiation
- High power / volume ratio
- Non-inductive
- Screw-on or fast-on outputs
- Material categorization: for definitions of compliance please see [www.vishay.com/doc299912](http://www.vishay.com/doc299912)


**RoHS**  
COMPLIANT

## LINKS TO ADDITIONAL RESOURCES



3D Models

## STANDARD ELECTRICAL SPECIFICATIONS

MODEL	RESISTANCE RANGE $\Omega$	MAX. RATED POWER $P_{60\text{ }^{\circ}\text{C}}$ W	TOLERANCE $\pm \%$	TEMPERATURE COEFFICIENT $\pm \text{ppm}/^{\circ}\text{C}$	E-SERIES OHMIC VALUES
RCEC ISO	0.33 to 1M	100	10, 5 <sup>(1)</sup>	250 (typical)	E 24

### Note

<sup>(1)</sup> On request



## MECHANICAL SPECIFICATIONS

UL 94 flame classifications	Material comply with the standard UL 94 V-0
Resistive element	Cermet
Substrate	Alumina
Encapsulation	Resin filled case

## TECHNICAL SPECIFICATIONS

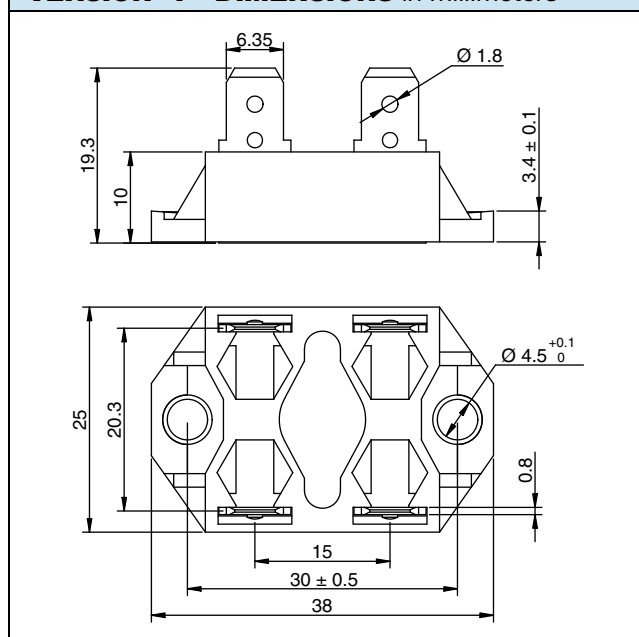
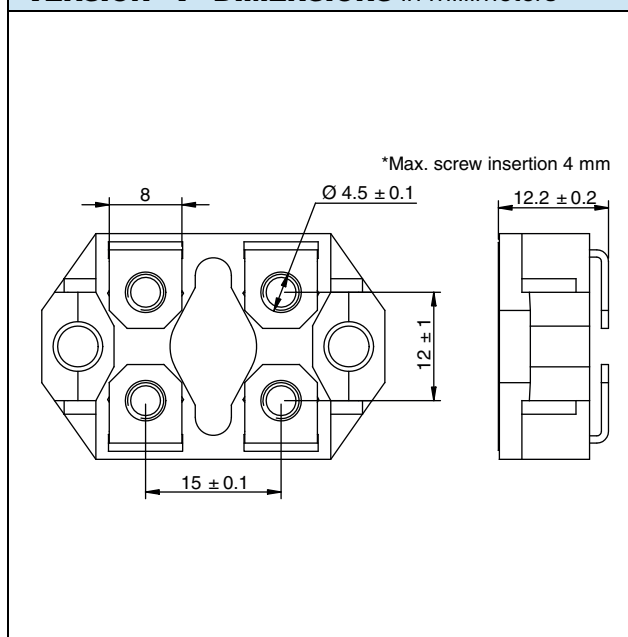
PARAMETER	RCEC ISO
Nominal power rating at 115 °C	25 W
Maximum power rating at 100 °C	50 W
Operating temperature range	-40 °C to +125 °C
Maximum operating voltage	1500 V
Dielectric strength $V_{\text{RMS}}$ (50 Hz / 1 min)	2500 V
Creepage distance	10 mm
Clearance distance	5.5 mm
Capacitance: ground	36 pF
Capacitance: parallel	12 pF
Partial discharge	On request
Inductance	$\leq 50 \text{ nH}$
Insulation resistance	$10^5 \text{ M}\Omega$ at 500 $V_{\text{CC}}$
Weight (max.)	20 g

**INTERNAL CONFIGURATION**

SINGLE CIRCUIT	DOUBLE CIRCUIT
	

**Note**

- Tolerance on ohm value for double circuit:  $\pm 10 \%$

**VERSION "F" DIMENSIONS in millimeters**

**VERSION "V" DIMENSIONS in millimeters**

**PERFORMANCES**

TESTS	CONDITIONS	REQUIREMENTS	TYPICAL VALUES
Momentary overload	$4 P_n / 10 \text{ s}$	2 %	0.2 %
Humidity (steady state)	56 days, 40 °C, 95 % HR	2 % or 0.05 $\Omega$ insul. > $10^3 \text{ M}\Omega$	0.2 %
VRT	-40 °C to +125 °C 5 cycles	2 % or 0.05 $\Omega$ <sup>(1)</sup>	0.2 %
Mechanical shock	40 A / 4000	0.5 % or 0.05 $\Omega$ <sup>(1)</sup>	0.25 %
Vibration	500 / 10	0.5 % or 0.05 $\Omega$ <sup>(1)</sup>	0.25 %
Terminals strength	130 Ncm / 100 N	1 % or 0.05 $\Omega$ <sup>(1)</sup>	0.1 %
Endurance	2000 cycles $P_n$ 30 min / 30 min	5 %	0.2 %

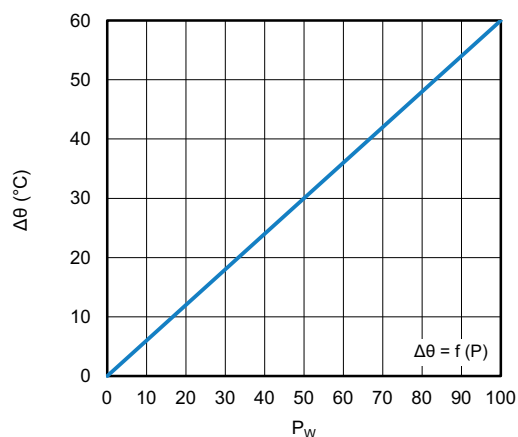
**Note**
<sup>(1)</sup> The higher of either value

**ENERGY ABSORPTION**

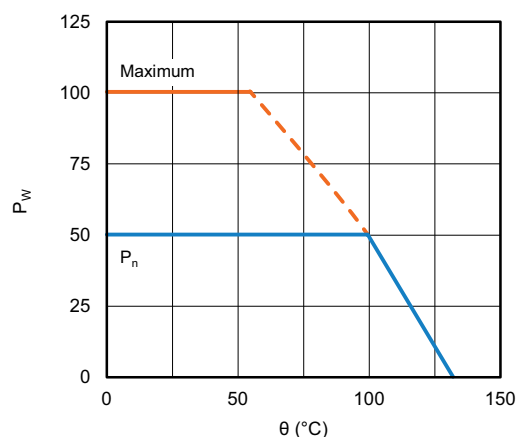
With single resistor, repetitive operation: 0.4 J/t = 50  $\mu\text{s}$ 

Other t values: consult us

## DISSIPATION



Temperature Rise as a Function of the Power Applied  
Overall Thermal Resistance 0.6 °C/W (See Assembly)



Permanent Applicable Power as a Function  
of Heatsink Temperature

## MECHANICAL ASSEMBLY

Head screw, low or normal height without washers.

Maximum tightening torque:

80 Ncm, mechanical mounting

130 Ncm, electrical connection

## COOLING

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

- Forced air ventilation
- Internal circulation of a liquid cooling
- 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 < 0.025 °C/W / 0.05 mm)

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

## ORDERING INFORMATION

RCEC	ISO	F	D	MP	100K	5 %	100K	5 %	XXX	BO15
MODEL	STYLE	TERMINALS		OPTION	RESISTANCE VALUE	TOLERANCE	RESISTANCE VALUE	TOLERANCE	CUSTOM	PACKAGING
		F = faston S = screws	Single Double Triple (on request)	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	I	S	0	V	S	1	0	R	0	K	B			
1							2		3				4	5	6		
1		2		3		4		5		6							
GLOBAL MODEL		LEAD		OHMIC VALUE		TOLERANCE		PACKAGING		INDUSTRIALIZATION NUMBER							
RCEC ISO		Screws simple = VS Screws double = VD Screws triple = VT Faston simple = FS Faston double = FD Faston triple = FT		The first three digits are significant figures and the last specifies the number of zeros to follow, R designates decimal point. 4702 = 47 kΩ 56R0 = 56 Ω In case of double or triple value => value = sum of the 2 or 3 value		J = 5 % K = 10 %		B = box		3 specific digits (if applicable)							

## EXAMPLES

MODEL	DESCRIPTION	PART NUMBER
RCEC ISO	RCEC ISO VS 10U 10 % BO5	RCECISOVS10R0KB
RCEC ISO	RCEC ISO FD MP 8K2 10 % 8K2 10 % 921 BO5	RCECISOFD1642KB921
RCEC ISO	RCEC ISO FS 15U 10 % 994 BO5	RCECISOFS15R0KB994



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