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/doc?99912

RoHS COMPLIANT

LINKS TO ADDITIONAL RESOURCES

3D Models

STANDARD ELECTRICAL SPECIFICATIONS					
MODEL	RESISTANCE RANGE Ω	MAX. RATED POWER $P_{60\ °C}$ W	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C	E-SERIES OHMIC VALUES
RCEC ISO	0.33 to 1M	100	10, 5 (1)	250 (typical)	E 24

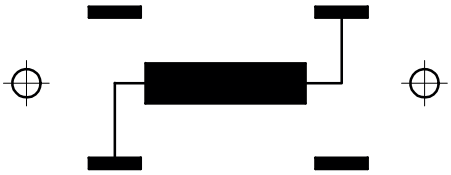
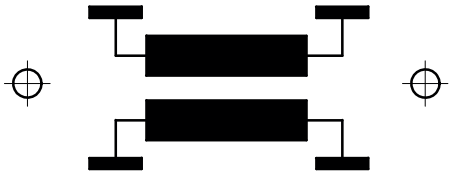
Note

(1) 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_{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	≤ 50 nH
Insulation resistance	10^5 MΩ at 500 V_{CC}
Weight (max.)	20 g

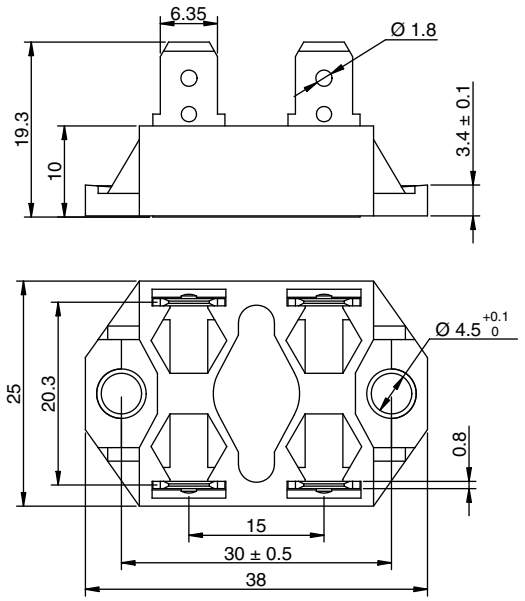
INTERNAL CONFIGURATION

SINGLE CIRCUIT	DOUBLE CIRCUIT
	

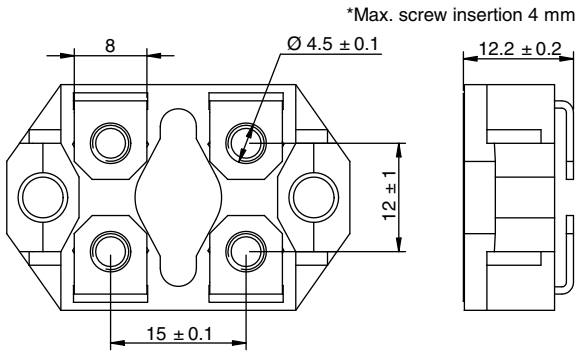
Note

- Tolerance on ohm value for double circuit: ± 10 %

VERSION "F" DIMENSIONS in millimeters



VERSION "V" DIMENSIONS in millimeters



PERFORMANCES

TESTS	CONDITIONS	REQUIREMENTS	TYPICAL VALUES
Momentary overload	4 P_n / 10 s	2 %	0.2 %
Humidity (steady state)	56 days, 40 °C, 95 % HR	2 % or 0.05 Ω insul. > 10^3 MΩ	0.2 %
VRT	-40 °C to +125 °C 5 cycles	2 % or 0.05 Ω (1)	0.2 %
Mechanical shock	40 A / 4000	0.5 % or 0.05 Ω (1)	0.25 %
Vibration	500 / 10	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

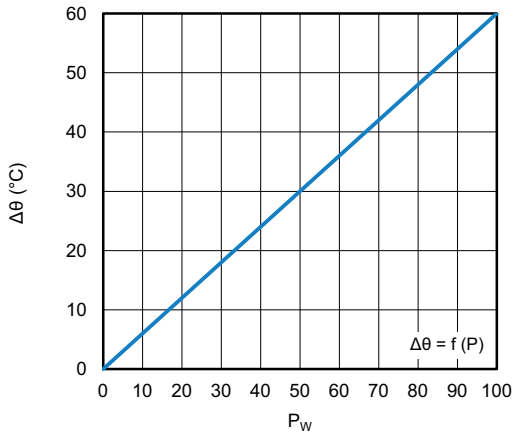
(1) The higher of either value

ENERGY ABSORPTION

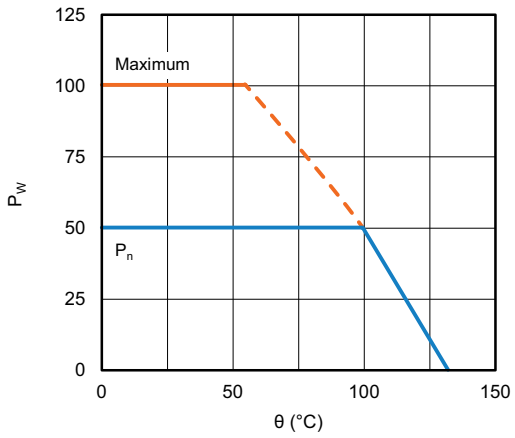
With single resistor, repetitive operation: 0.4 J/t = 50 µs

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 Applicate 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:

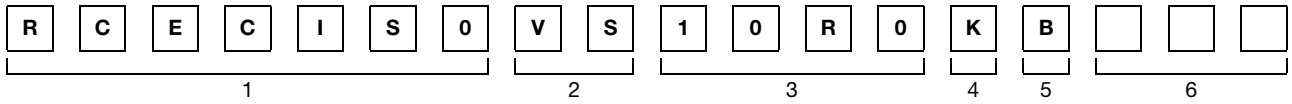
- Forced air ventilation
- Internal circulation of a liquid cooling
- Heatsink contact surface: Ra 6.3 µm
- Evenness defect: 0.05 mm max.
- Surface temperature gradient (isotherm): 20 °C max.
- Thermal compound not supplied (resistance < 0.025 °C/W / 0.05 mm)

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



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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