

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

DESIGN SUPPORT TOOLS AVAILABLE



3D Models

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	RESISTANCE RANGE Ω	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 ⁽¹⁾	250 (typical)	E 24

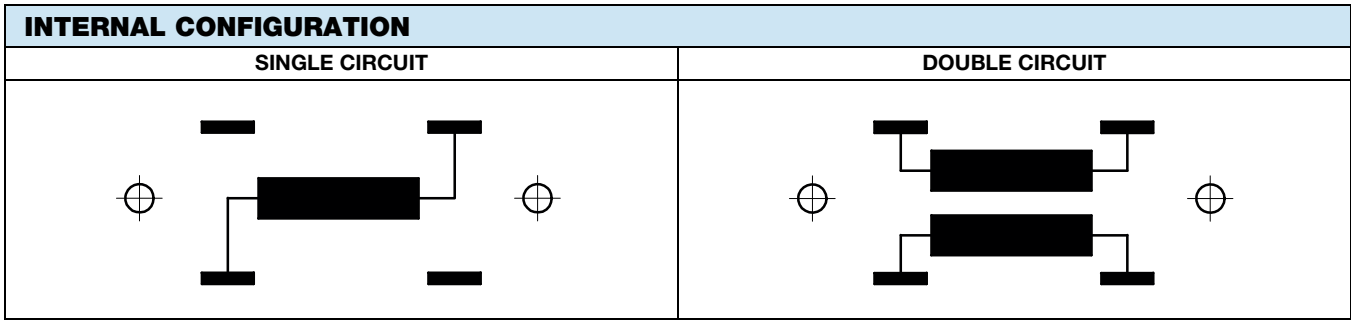
Note
⁽¹⁾ On request

MECHANICAL SPECIFICATIONS

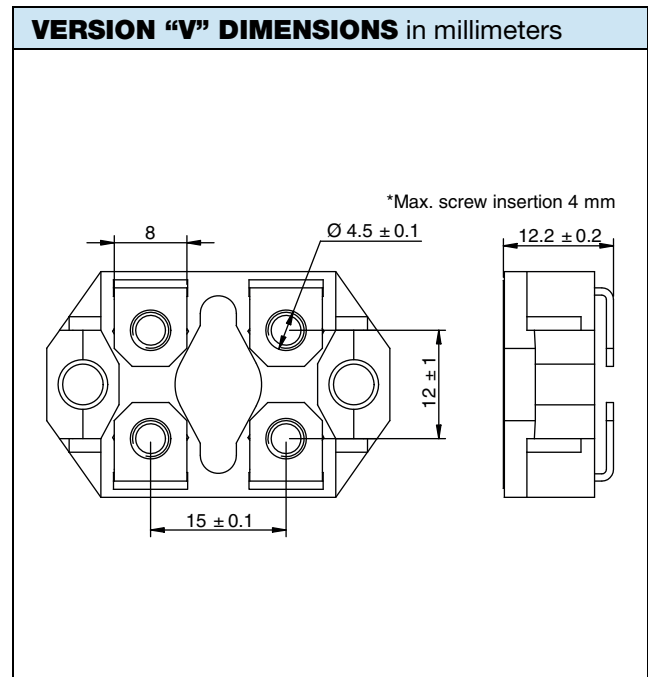
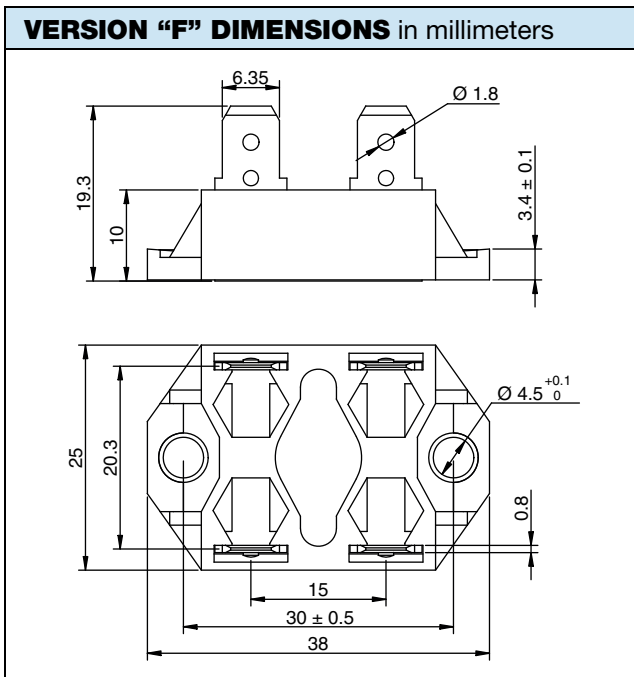
UL 94 flame classifications	Material comply with the standard UL 94 V-0
Resistive element	Cermet
Substrate	Alumina
Encapsulation	Resin filled case

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	$\leq 50 \text{ nH}$
Insulation resistance	$10^5 \text{ M}\Omega$ at 500 V_{CC}
Weight (max.)	20 g


Note

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



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 0.05Ω insul. $> 10^3 \text{ M}\Omega$	0.2%
VRT	-40°C to $+125^\circ\text{C}$ 5 cycles	2% or $0.05 \Omega^{(1)}$	0.2%
Mechanical shock	40 A / 4000	0.5% or $0.05 \Omega^{(1)}$	0.25%
Vibration	500 / 10	0.5% or $0.05 \Omega^{(1)}$	0.25%
Terminals strength	130 Ncm / 100 N	1% or $0.05 \Omega^{(1)}$	0.1%
Endurance	2000 cycles P_n 30 min / 30 min	5%	0.2%

Note

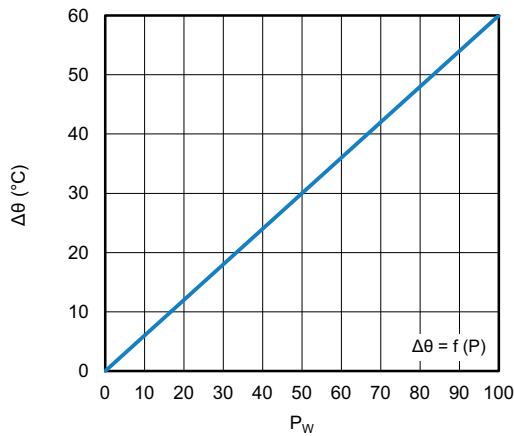
⁽¹⁾ The higher of either value

ENERGY ABSORPTION

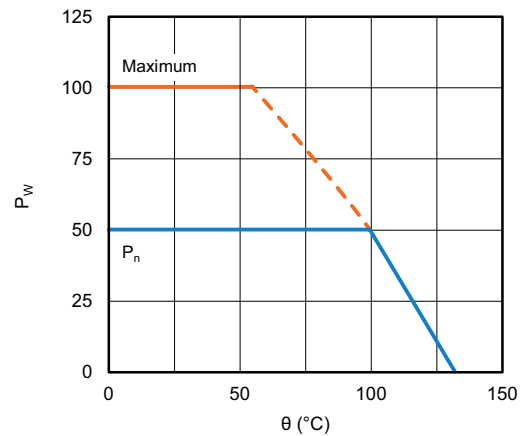
With single resistor, repetitive operation: $0.4 \text{ J/t} = 50 \mu\text{s}$

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 ≤ 0.05 °C/W / 0.025 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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