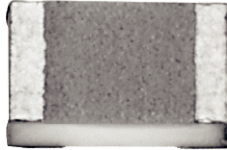
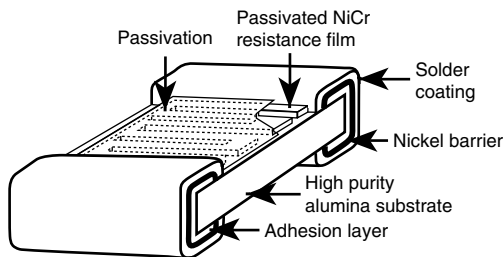


CECC (€) 40401-010 Qualified Thin Film Resistor Chip



Utilizing proven expertise in Thin Film resistors, VISHAY provides a CECC qualified chip with the same reliability and stability found in QPL resistors. These chips are available in a wide range of sizes, values and performance characteristics.

CONSTRUCTION



FEATURES

- Nickel barrier for high temperature operating conditions
- Tight TCR < 10 ppm/°C, and in lot tracking < 5 ppm/°C in (- 55 °C, + 155 °C temperature range)
- Very low noise < 35 dB and voltage coefficient 0.1 ppm/V
- Non-inductive
- Laser trimmed down to 0.1 %
- Wraparound resistance less than 0.01 Ω
- Antistatic waffle-pack or tape and reel packaging available
- High stability (0.05 % - 1000 h at Pn at + 70 °C)
- Lead (Pb)-free available
- Withstand moisture resistance test of AEC-Q200
- Conform to EN 140401 804
- Compliant to RoHS Directive 2002/95/EC


RoHS*
COMPLIANT

Note

* Pb containing terminations are not RoHS compliant, exemptions may apply

TYPICAL PERFORMANCE

	ABS
TCR	10 ppm/°C
	ABS
TOL.	0.1 %

STANDARD ELECTRICAL SPECIFICATIONS		
TEST	SPECIFICATIONS	CONDITIONS
MODEL	RV €	
Absolute TCR	E: ± 25 ppm/°C Y: ± 10 ppm/°C	- 55 °C to + 155 °C
Absolute tolerance	± 0.1 %, ± 0.5 %, ± 1 %, ± 2 %, ± 5 % (R ≥ 500 Ω) ± 0.5 %, ± 1 %, ± 2 %, ± 5 % (R ≥ 100 Ω)	
Voltage coefficient	0.1 ppm/V	
Operating temperature range	- 55 °C to + 155 °C	
Storage temperature range	- 55 °C to + 155 °C	
Noise	- 35 dB typical	
Thermal EMF	< 0.1 μV/°C	
Load life stability	± (0.1 % Rn ⁽¹⁾ ± 0.05 Ω)	1000 h Pn at + 70 °C

CASE SIZES	0505, 0603	0805	1206
Resistance range ⁽²⁾	100 Ω to 260 kΩ	100 Ω to 300 kΩ	100 Ω to 1 MΩ
Power rating Pn	125 mW	200 mW	330 mW
Limiting voltage (UL)	50 V	50 V	75 V

Notes

⁽¹⁾ Rn: Nominal resistance

⁽²⁾ Extended resistance range on request

DIMENSIONS in millimeters (inches)								
SERIES/ CASE SIZES	A		B		D/E		C	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
RV 0505	1.198 (0.047)	1.502 (0.059)	1.143 (0.045)	1.397 (0.055)	0.250 (0.010)	0.510 (0.020)	0.373 (0.015)	0.627 (0.025)
RV 0603	1.368 (0.054)	1.672 (0.066)	0.623 (0.025)	0.877 (0.035)	0.250 (0.010)	0.510 (0.020)	0.373 (0.015)	0.627 (0.025)
RV 0805	1.758 (0.069)	2.062 (0.081)	1.143 (0.045)	1.397 (0.055)	0.250 (0.010)	0.510 (0.020)	0.373 (0.015)	0.627 (0.025)
RV 1206	2.908 (0.114)	3.212 (0.126)	1.473 (0.058)	1.727 (0.068)	0.250 (0.010)	0.510 (0.020)	0.373 (0.015)	0.627 (0.025)

POPULAR OPTION

Option: AEC-Q200 moisture resistance

Option to order: 0058: Specific production process to withstand 85 °C/85 % RH at Pn/10

ENVIRONMENTAL TEST			
TEST	CONDITIONS	VALUES AND DRIFTS ($\Delta R/R \pm \%$)	
		CECC REQUIREMENTS	TYPICAL PERFORMANCE
Overload	6.25 x rated power/2 s (or 2 UL)	0.05 % Rn ⁽²⁾ + 0.05 Ω	0.01 % Rn ⁽²⁾
Climatic sequences ⁽¹⁾	- 55/+ 155 °C 5 moisture cycles	0.1 % Rn ⁽²⁾ + 0.05 Ω	0.02 % Rn ⁽²⁾
Thermal shock ⁽¹⁾	- 55/+ 155 °C 5 cycles 30 min	0.05 % Rn ⁽²⁾ + 0.05 Ω	0.02 % Rn ⁽²⁾
Load life ⁽¹⁾	+ 70 °C/Pn 1000 h	0.1 % Rn ⁽²⁾ + 0.05 Ω	0.05 % Rn ⁽²⁾
Resistance to solder heat	+ 260 °C/10 s	0.05 % Rn ⁽²⁾ + 0.05 Ω	0.02 % Rn ⁽²⁾
Moisture resistance ⁽¹⁾	+ 40 °C/93 % HR Pn/10	0.1 % Rn ⁽²⁾ + 0.05 Ω	0.01 % Rn ⁽²⁾
	AEC-Q200 ⁽³⁾ 85 °C/85 % RH/Pn/10 1000 h	0.5 % + 0.05 Ω	Max. < 0.3 % + 0.05 Ω
High temperature storage	1000 h at + 155 °C	0.1 % Rn ⁽²⁾ + 0.05 Ω	0.05 % Rn ⁽²⁾
Bending ⁽¹⁾	10 bends/2 mm/5 s	0.05 % Rn ⁽²⁾ + 0.05 Ω	0.02 % Rn ⁽²⁾

SPECIFIC CONDITIONS DUE TO TERMINATION TYPE				
TEST	CONDITIONS		VALUES AND DRIFTS	
	B; G	N	VISHAY REQUIREMENTS	TYPICAL PERFORMANCE
Solderability	+ 235 °C/2 s Sn60Pb40 alloy	+ 245 °C/3 s Sn97Ag3 alloy	VISUAL INSPECTION	
High T° reflow profile	N/A	+ 255 °C/40 s (on parts)	0.02 % Rn ⁽²⁾ + 0.05 Ω	0.01 % Rn ⁽²⁾ + 0.05 Ω

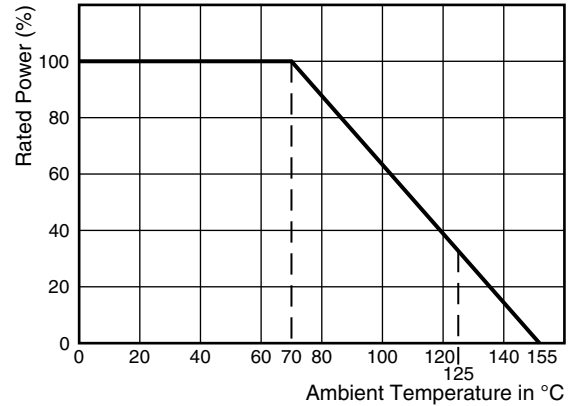
Notes

- (1) Test requiring parts to be mounted on PCB will be performed with the requirement that termination alloy will be the same as solder paste alloy. Gold termination will be tested as B termination
- (2) Rn: Nominal Resistance
Pn: Nominal Power
- (3) Option to order: 0058



PACKAGING INFORMATION				
SIZE	NUMBER OF PIECES PER PACKAGE			TAPE WIDTH
	WAFFLE PACK (2" x 2")	TAPE AND REEL		
		Min.	Max.	
0505	400	100	4000	8 mm (0.315")
0603				
0805	100			
1206	140			

DERATING CURVE



MECHANICAL SPECIFICATIONS	
Resistive material	Nichrome
Substrate material	Alumina
Plating	Tin lead over nickel or tin silver over nickel or gold over nickel
Marking resistance to solvents	Per CECC Specs

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: **RV0505E1001DBT1016**

R	V	0	5	0	5	E	1	0	0	1	D	B	T	1	0	1	6
GLOBAL MODEL	SIZE	TCR		VALUE			TOLERANCE	TERMINATION	PACKAGING	OPTION							
	0505 0603 0805 1206	E = ± 25 ppm/°C Y = ± 10 ppm/°C		The first 3 digits (2 digits are enough for tolerance G and J) are significant figures and the last digit specifies the number of zeros to follow. R designates decimal point 10R0 = 10 Ω 3901 = 3900 Ω 1004 = 1 MΩ			B = ± 0.1 % D = ± 0.5 % F = ± 1 % G = ± 2 % J = ± 5 %	B: SnPb over nickel barrier N: SnAg over nickel barrier G: Gold over nickel barrier B: Lead bearing version N and G: Lead (Pb)-free/RoHS version	Blank = Waffle pack T = Tape and reel	Leave blank if no option							

Historical Part Number example: **RV 0505 25PPM 1K 0.5 % B TR R1016**

PART NUMBER DESCRIPTION (for information only)							
RV	0505	25 PPM	1K	0.5 %	B	TR	R1016
MODEL	SIZE	TCR	OHMIC VALUE	TOLERANCE	TERMINATION	PACKAGING	OPTION



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