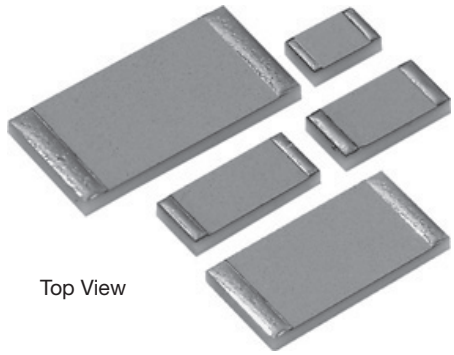
High Precision Foil Wraparound Surface Mount Chip Resistor

with TCR of ±2 ppm/°C and Load Life Stability of ±0.01% (100 ppm)

FEATURES

- Temperature coefficient of resistance (TCR): ±2.0 ppm/°C typical (–55°C to +125°C,+25°C ref.)
- Tolerance: to ±0.01%
- Power rating: to 400 mW at +70°C
- Load life stability: to ±0.01% at 70°C, 2000 h at rated power
- Resistance range: 10 Ω to 125 kΩ
- Electrostatic discharge (ESD) up to 25 000 V
- Short time overload: ≤0.01%



Top View

Pb-free Available

RoHS* COMPLIANT

TOLERANCE AND TCR VS. RESISTANCE VALUE(1) (–55°C to +125°C, +25°C Ref.)		
RESISTANCE VALUE (Ω)	**TOLERANCE (%)**	**TYPICAL TCR AND MAX. SPREAD (ppm/°C)**
250 to 125K	±0.01	±2±2
100 to <250	±0.02	±2±3
50 to <100	±0.05	±2±3
25 to <50	±0.1	±2±4
10 to <25	±0.25	±2±6

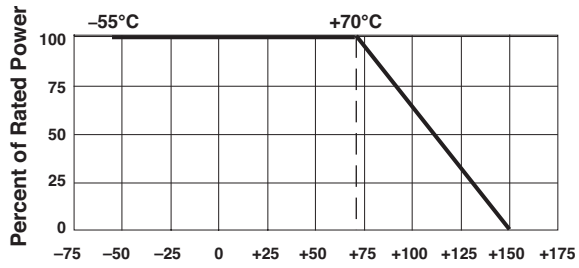
Note

(1) For tighter performances and non-standard values up to 150K, please contact VFR application engineering using the e-mail address in the footer below.

SPECIFICATIONS				
CHIP SIZE	**RATED POWER (mW) at +70°C**	**MAX. WORKING VOLTAGE** $\leq \sqrt{P \times R}$	**RESISTANCE RANGE (Ω)**	**MAXIMUM WEIGHT (mg)**
0805	100	28 V	10 to 8K	6
1206	150	61 V	10 to 25K	11
1506	200	78 V	10 to 30K	12
2010	300	145 V	10 to 70K	27
2512	400	220 V	10 to 125K	40

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POWER DERATING CURVE



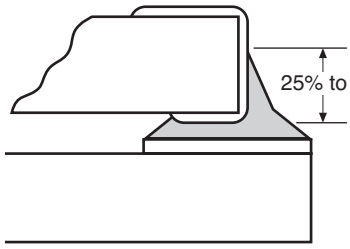
PERFORMANCES

TEST OR CONDITIONS	MIL-PRF-55342 CHARACTERISTIC E ΔR LIMITS	TYPICAL ΔR LIMITS	MAXIMUM ΔR LIMITS(1)
Thermal Shock, 100 × (–65°C to +150°C)	±0.1%	±0.005% (50 ppm)	±0.02% (200 ppm)
Low Temperature Operation, –65°C, 45 min at P_{nom}	±0.1%	±0.01% (100 ppm)	±0.02% (200 ppm)
Short Time Overload, 6.25 × Rated Power, 5 s	±0.1%	±0.01% (100 ppm)	±0.02% (200 ppm)
High Temperature Exposure, +150°C, 100 h	±0.1%	±0.01% (100 ppm)	±0.03% (300 ppm)
Resistance to Soldering Heat	±0.2%	±0.005% (50 ppm)	±0.01% (100 ppm)
Moisture Resistance	±0.2%	±0.005% (50 ppm)	±0.03% (300 ppm)
Load Life Stability +70°C for 2000 h at Rated Power	±0.5%	±0.005% (50 ppm)	±0.01% (100 ppm)

Note

(1) As shown +0.01 Ω to allow for measurement errors at low values.

RECOMMENDED MOUNTING(1),(2),(3)



A low profile solder fillet is recommended to avoid unnecessary stresses along top edge of metallization. IR and vapor phase reflow are best.

Notes

(1) Avoid the use of cleaning agents which could attack epoxy resins, which form part of the resistor construction
(2) Vacuum pick up is recommended for handling
(3) Soldering iron may damage the resistor

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GLOBAL PART NUMBER INFORMATION[1]

NEW GLOBAL PART NUMBER: Y145512K7560T9R (preferred part number format)

DENOTES PRECISION	VALUE								CHARACTERISTICS	
Y	1	4	5	5	1	2	K	7	5	6	0	T	9	R
	PRODUCT CODE				RESISTANCE TOLERANCE							PACKAGING		

DENOTES PRECISION
Y

VALUE
R = Ω
K = kΩ

CHARACTERISTICS
0 = standard
9 = lead (Pb)-free
1 to 999 = custom

PRODUCT CODE
1172 = VSM0805
1496 = VSM1206
1455 = VSM1506
1611 = VSM2010
1612 = VSM2512

RESISTANCE TOLERANCE
T = ±0.01%
Q = ±0.02%
A = ±0.05%
B = ±0.10%
C = ±0.25%
D = ±0.5%
F = ±1.0%

PACKAGING
R = tape and reel
W = waffle pack

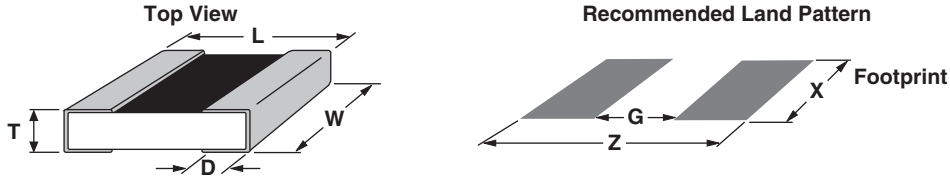
FOR EXAMPLE: ABOVE GLOBAL ORDER Y1455 12K7565 T 9 R:
TYPE: VSM1506
VALUES: 12.7560 kΩ
ABSOLUTE TOLERANCE: 0.01%
TERMINATION: lead (Pb)-free
PACKAGING: tape and reel

HISTORICAL PART NUMBER: VSM1506 12K756 TCR2 T S T (will continue to be used)

VSM1506	12K756	TCR2	T	S	T
MODEL	RESISTANCE VALUE	TCR CHARACTERISTICS	TOLERANCE	TERMINATION	PACKAGING
VSM0805 **VSM1206** **VSM1506** **VSM2010** **VSM2512**	12.756 kΩ		**T** = ±0.01% **Q** = ±0.02% **A** = ±0.05% **B** = ±0.10% **C** = ±0.25% **D** = ±0.5% **F** = ±1.0%	**S** = lead (Pb)-free **B** = tin/lead	**T** = tape and reel **W** = waffle pack

Note
[1] For non-standard requests, please contact application engineering.

DIMENSIONS AND LAND PATTERN in Inches (Millimeters)



Note: Recommended stencil thickness 0.2 mm/0.00787 inch minimum

CHIP SIZE	L ±0.005 (0.13)	W ±0.005 (0.13)	THICKNESS MAXIMUM	D ±0.005 (0.13)	Z[1]	G[1]	X[1]
0805	0.080 (2.03)	0.050 (1.27)	0.025 (0.64)	0.015 (0.38)	0.122 (3.10)	0.028 (0.71)	0.050 (1.27)
1206	0.126 (3.20)	0.062 (1.57)	0.025 (0.64)	0.020 (0.51)	0.175 (4.45)	0.059 (1.50)	0.071 (1.80)
1506	0.150 (3.81)	0.062 (1.57)	0.025 (0.64)	0.020 (0.51)	0.199 (5.05)	0.083 (2.11)	0.071 (1.80)
2010	0.198 (5.03)	0.097 (2.46)	0.025 (0.64)	0.025 (0.64)	0.247 (6.27)	0.115 (2.92)	0.103 (2.62)
2512	0.249 (6.32)	0.127 (3.23)	0.025 (0.64)	0.032 (0.81)	0.291 (7.39)	0.150 (3.81)	0.127 (3.23)

Note
[1] Land pattern dimensions are per IPC-7351A

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