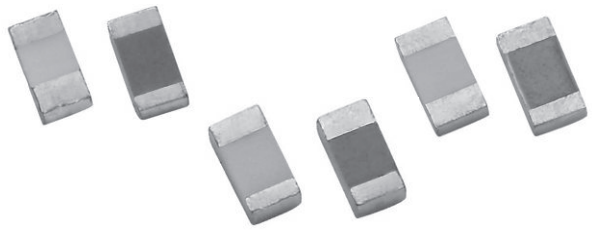
QPL MIL-PRF-55342 Qualified
Thin Film Resistor, Surface-Mount Chip

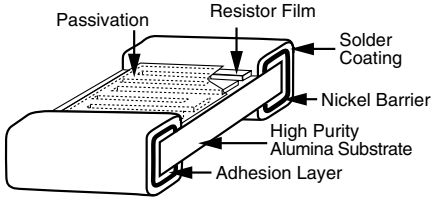


LINKS TO ADDITIONAL RESOURCES

3D Models | Product Page | Packages | Footprints

Thin Film Mil chip resistors feature all sputtered wraparound termination for excellent adhesion and dimensional uniformity. They are ideal in applications requiring stringent performance requirements. Established reliability is assured through 100 % screening and extensive environmental lot testing.

CONSTRUCTION



ATTENTION!
Observe Precautions for
Handling Electrostatic Sensitive Devices!

FEATURES

- Established reliability, “S” and “V” failure rate level (10 ppm), C = 2
- High purity alumina substrate
- Wraparound termination featuring a tenacious adhesion layer covered with an electroplated nickel barrier layer for +150 °C operating conditions
- Very low noise and voltage coefficient (< -25 dB, 0.1 ppm/V)
- Non-inductive
- Laser-trimmed tolerances ± 0.1 %
- Wraparound resistance less than 0.010 Ω typical
- In-lot tracking less than 5 ppm/°C
- Complete MIL-testing available in-house
- Antistatic waffle pack or tape and reel packaging available
- Military / aerospace / QPL

TYPICAL PERFORMANCE

	ABSOLUTE
TCR	25
TOL.	0.1

STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Tamelox resistor film (passivated nichrome)	-
Resistance Range	10 Ω to 6.19 MΩ	-
TCR: Absolute	± 25 ppm/°C to ± 300 ppm/°C	-55 °C to +125 °C
Tolerance: Absolute	± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %, ± 2 %, 5 %, ± 10 %	+25 °C
Stability: Absolute	Δ*R* ± 0.02 %	2000 h at +70 °C
Stability: Ratio	-	-
Voltage Coefficient	0.1 ppm/V	-
Working Voltage	30 V to 200 V	-
Operating Temperature Range	-65 °C to +150 °C	-
Storage Temperature Range	-65 °C to +150 °C	-
Noise	< - 25 dB	-
Shelf Life Stability: Absolute	Δ*R* ± 0.01 %	1 year at +25 °C

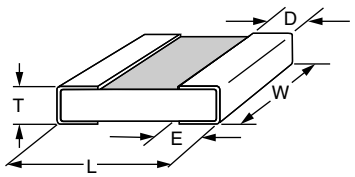
COMPONENT RATINGS

CASE SIZE	POWER RATING (mW)	WORKING VOLTAGE (V)	RESISTANCE RANGE (Ω) BY CHARACTERISTICS TOLERANCE			
			E (0.1 %, 0.25 %, 0.5 %)	E (1 %, 2 %, 5 %, 10 %)	H, K, L, M (0.1 %, 0.25 %, 0.5 %)	H, K, L, M (1 %, 2 %, 5 %, 10 %)
M55342/01	50	40	49.9 to 150K	49.9 to 150K	20 to 150K	20 to 150K
M55342/02	125	40	49.9 to 301K	49.9 to 301K	20 to 301K	20 to 301K
M55342/03	200	75	49.9 to 649K	49.9 to 649K	10 to 649K	10 to 649K
M55342/04	150	125	49.9 to 1.69M	49.9 to 1.69M	10 to 1.69M	10 to 1.69M
M55342/05	225	175	49.9 to 3.16M	49.9 to 3.16M	10 to 3.16M	10 to 3.16M
M55342/06	150	50	49.9 to 475K	49.9 to 475K	10 to 475K	10 to 475K
D55342/07	250	100	49.9 to 1.5M	49.9 to 1.5M	10 to 1.5M	10 to 1.5M
M55342/08	800	150	49.9 to 4.02M	49.9 to 4.02M	10 to 4.02M	10 to 4.02M
M55342/09	1000	200	49.9 to 6.19M	49.9 to 6.19M	10 to 6.19M	10 to 6.19M
M55342/10	500	75	49.9 to 1M	49.9 to 1M	49.9 to 1M	49.9 to 1M
M55342/11	50	30	49.9 to 100K	49.9 to 100K	20 to 100K	20 to 100K
M55342/12	100	50	49.9 to 258K	49.9 to 261K	10 to 258K	10 to 261K

Note

- Values listed are a guide, refer to MIL spec for value / tolerance allowance

DIMENSIONS in inches



CASE SIZE	TERM.	L	W	T	D	E	WEIGHT (g)
M55342/01	B	0.055 ± 0.006	0.025 ± 0.005	0.010 to 0.033	0.010 ± 0.005	0.015 ± 0.005	0.002
M55342/02	B	0.055 ± 0.006	0.050 ± 0.005	0.010 to 0.033	0.010 ± 0.005	0.015 ± 0.005	0.004
M55342/03	B	0.105 ± 0.007	0.050 ± 0.005	0.010 to 0.033	0.015 ± 0.005	0.015 ± 0.005	0.006
M55342/04	B	0.155 ± 0.007	0.050 ± 0.005	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005	0.011
M55342/05	B	0.230 ± 0.007	0.075 ± 0.005	0.010 to 0.033	0.020 ± 0.005	0.020 ± 0.005	0.017
M55342/06	B	0.080 ± 0.006	0.050 ± 0.005	0.010 to 0.033	0.016 ± 0.008	0.015 ± 0.005	0.005
D55342/07	B	0.126 ± 0.008	0.063 ± 0.005	0.010 to 0.033	0.020 + 0.005 / - 0.010	0.020 + 0.005 / - 0.010	0.009
M55342/08	B	0.209 + 0.009/- 0.018	0.098 ± 0.005	0.010 to 0.033	0.020 ± 0.005	0.020 ± 0.005	0.022
M55342/09	B	0.259 + 0.009/- 0.015	0.124 ± 0.005	0.010 to 0.033	0.020 ± 0.005	0.020 ± 0.005	0.033
M55342/10	B	0.105 ± 0.007	0.100 ± 0.005	0.010 to 0.033	0.015 ± 0.005	0.015 ± 0.005	0.011
M55342/11	B	0.040 ± 0.005	0.022 ± 0.005	0.010 to 0.033	0.010 ± 0.005	0.010 ± 0.005	0.002
M55342/12	B	0.064 ± 0.006	0.032 ± 0.005	0.010 to 0.033	0.012 ± 0.005	0.015 ± 0.005	0.003

ENVIRONMENTAL TESTS

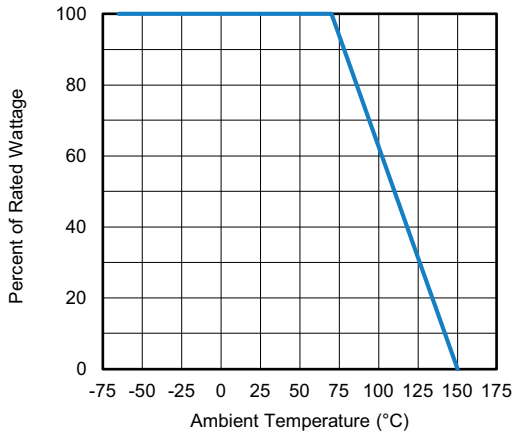
ENVIRONMENTAL TEST	MIL-PRF-55342 LIMITS (ΔR ±)	VISHAY PERFORMANCE (ΔR ±)
Thermal Shock	0.1 %	0.020 %
Low Temperature Operation	0.1 %	0.025 %
Short Time Overload	0.1 %	0.050 %
High Temperature Exposure	0.1 %	0.009 %
Resistance to Bonding	0.2 %	0.006 %
Moisture Resistance	0.2 %	0.004 %
TCR	± 25 ppm/°C	< 15 ppm/°C
Life (2000 h at + 70 °C)	0.5 %	0.02 %
Life (10 000 h at + 70 °C)	2.0 %	0.04 %

MECHANICAL SPECIFICATIONS

Resistive Element	Tamelox
Substrate Material	Alumina
Chip Terminations	Solder over nickel
Fused Solder	Tin / lead solder alloy

FSCM CAGE # - 57489

DERATING



GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: M55342E06B1C00RTS

M	5	5	3	4	2	E	0	6	B	1	C	0	0	R	T	S	V

GLOBAL MODEL	TCR CHARACTERISTIC	CASE SIZE	TERMINATION
M55342 or **D55342** (/07 size only)	**E** = 25 ppm/°C **H** = 50 ppm/°C **K** = 100 ppm/°C **L** = 200 ppm/°C **M** = 300 ppm/°C	**01** = 0502 **02** = 0505 **03** = 1005 **04** = 1505 **05** = 2208 **06** = 0805 **07** = 1206 **08** = 2010 **09** = 2512 **10** = 1010 **11** = 0402 **12** = 0603	**B** = solderable

OHMIC VALUE

Three digits and a letter. Letter identifies tolerance, acts as multiplier and decimal locator.

	MULTIPLIER		
Tolerance	1 Ω	1 kΩ	1 MΩ
0.1 %	A	B	C
0.25 %	R	U	V
0.5 %	W	Y	Z
1 %	D	E	F
2 %	G	H	T
5 %	J	K	L
10 %	M	N	P

FAILURE RATE

M = 1.0 % per 1000 h
P = 0.1 % per 1000 h
R = 0.01 % per 1000 h
U = 0.01 % per 1000 h [3]
S = 0.001 % per 1000 h
V = 0.001 % per 1000 h [3]
C = non ER version

PACKAGING

Standard Packaging:
BS = BULK
25 min., 1 mult.
WS = WAFFLE
25 min., 1 mult.
W0 = WAFFLE
100 min.,100 mult.
TAPE AND REEL
T0 = 100 min., 100 mult.
T1 = 1000 min., 1000 mult.
T3 = 300 min., 300 mult.
T5 = 500 min., 500 mult.
TF = full reel (2K, 4K, or 5K dependent on case size) per tape and reel document 60034
TS = 25 min., 1 mult.
Special Packaging:
WAFFLE
WI = 25 min., 1 mult. (item single lot date code)
WP = 25 min., 1 mult. (package unit single lot date code)
TAPE AND REEL
TI = 25 min., 1 mult. (item single lot date code)
TP = 25 min., 1 mult. (package unit single lot date code)

THIN FILM CODE

V = K, L, and M TCR with tolerance ≥ 1 % [1]
M = part marked [2]

Historical Part Number Example: M55342K06B5E60R (for reference purposes only)

M55342	K	06	B	5E60	R
SERIES	TCR CHARACTERISTIC	CASE SIZE	TERMINATION	VALUE AND TOLERANCE	FAILURE RATE

Notes

- For M/D55342 T-level failure rate options please see VTF E/H (T-level) datasheet: www.vishay.com/ppg?60060

(1) For K, L and M TCR ≥ 1 % tolerance add a “V” at end of part number to specify Vishay Thin Film, e.g. M55342K06B1F00RWSV
(2) Option 1 marking only. Case sizes 01, 02, 11, and 12 not available due to size
(3) Failure rate U and V require group A and B testing on a production lot basis

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