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

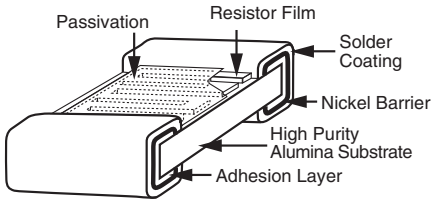


Thin Film Mil chip resistors feature all sputtered wraparound termination for excellent adhesion and dimensional uniformity. They are ideal in applications requiring stringent performance requirements. Established reliability is assured through 100 % screening and extensive environmental lot testing.

FEATURES

- Established reliability, “S” failure rate level (10 ppm), C = 2
- High purity alumina substrate 99.6 % purity
- 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, 0.5 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

CONSTRUCTION



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 % to ± 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	- 55 °C to + 125 °C	-
Storage Temperature Range	- 55 °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 %)	H, K, L, M (0.1 %, 0.25 %, 0.5 %)	H, K, L, M (1 %, 2 %, 5 %)
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

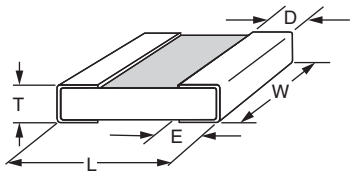
Note

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

For technical questions, contact: thinfilm@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

DIMENSIONS in inches



CASE SIZE	TERM.	L	W	T	D	E
M55342/01	B	0.055 ± 0.006	0.025 ± 0.005	0.010 to 0.030	0.010 ± 0.005	0.015 ± 0.005
M55342/02	B	0.055 ± 0.006	0.050 ± 0.005	0.012 to 0.033	0.010 ± 0.005	0.015 ± 0.005
M55342/03	B	0.105 ± 0.007	0.050 ± 0.005	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005
M55342/04	B	0.155 ± 0.007	0.050 ± 0.005	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005
M55342/05	B	0.230 ± 0.007	0.075 ± 0.005	0.015 to 0.033	0.020 ± 0.005	0.020 ± 0.005
M55342/06	B	0.080 ± 0.006	0.050 ± 0.005	0.015 to 0.033	0.016 ± 0.008	0.015 ± 0.005
D55342/07	B	0.126 ± 0.008	0.063 ± 0.005	0.015 to 0.033	0.020 + 0.005/- 0.010	0.020 + 0.005/- 0.010
M55342/08	B	0.209 + 0.009/- 0.018	0.098 ± 0.005	0.015 to 0.033	0.020 ± 0.005	0.020 ± 0.005
M55342/09	B	0.259 + 0.009/- 0.015	0.124 ± 0.005	0.015 to 0.033	0.020 ± 0.005	0.020 ± 0.005
M55342/10	B	0.105 ± 0.007	0.100 ± 0.005	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005
M55342/11	B	0.040 ± 0.005	0.025 ± 0.005	0.010 to 0.030	0.010 ± 0.005	0.015 ± 0.005
M55342/12	B	0.064 ± 0.006	0.032 ± 0.005	0.010 to 0.033	0.012 ± 0.005	0.015 ± 0.005

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	Plated solder 90/10

FSCM CAGE # - 57489

For technical questions, contact: thinfilm@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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

M55342 or **D55342** (/07 size only)

TCR CHARACTERISTIC

E = 25 ppm/°C
H = 50 ppm/°C
K = 100 ppm/°C
L = 200 ppm/°C
M = 300 ppm/°C

CASE SIZE

01 = 0502
02 = 0505
03 = 1005
04 = 1505
05 = 2208
06 = 0705
07 = 1206
08 = 2010
09 = 2512
10 = 1010
11 = 0402
12 = 0603

TERMINATION

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
S = 0.001 % per 1000 h
C = Non ER version

PACKAGING

Standard Packaging:
BS = BULK
100 min., 1 mult
WS =WAFFLE
100 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 = 100 min., 1 mult
Special Packaging:
WAFFLE
WI = 100 min., 1 mult (item single lot date code)
WP =100 min., 1 mult (package unit single lot date code)
TAPE AND REEL
TI = 100 min., 1 mult (item single lot date code)
TP = 100 min., 1 mult (package unit single lot date code)

THIN FILM CODE (1)

V for K, L and M TCR W/tolerance ≥ 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

(1) Only add a V at the end of part number to specify Vishay Dale Thin Film for K, L and M TCR and tolerance 1 % and higher

(2) Option 1 marking only case size 01, 02, 11, 12 not available due to size

For technical questions, contact: thinfilm@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.

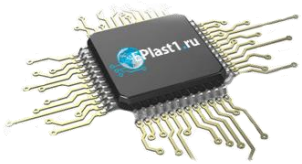
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.