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



FEATURES

- T-level (space) qualified
- Passes outgassing requirements of ASTM-E595
- TCR to ± 25 ppm/°C
- Tolerances to ± 0.1 %
- 100 % power conditioning

LINKS TO ADDITIONAL RESOURCES

3D Models

TYPICAL PERFORMANCE

	ABSOLUTE
TCR	25
TOL.	0.1

Thin Film MIL-PRF-55342 established reliability “T” level chip resistors feature a thin film resistor element and with all sputtered wraparound terminations that provide excellent adhesion and dimensional uniformanity. They are ideal in applications requiring stringent performance requirements. Established reliability is assured through 100 % screening and extensive environmental testing for every lot that includes complete 100 % group A, power conditioning and group B lot testing performed for T-level product assurance.

STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Tamelox resistor film (passivated nichrome)	-
Resistance Range	10 Ω to 6.19 MΩ (size dependent)	-
TCR: Absolute	25 ppm/°C (E), 50 ppm/°C (H)	-55 °C to +125 °C
Tolerance: Absolute	± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %, ± 2 %, 5 %, ± 10 %	+25 °C
Stability: Absolute	ΔR ± 0.02 %	2000 h at +70 °C
Voltage Coefficient	< 0.1 ppm/V	-
Working Voltage	40 V to 125 V	-
Operating Temperature Range	-65 °C to +150 °C	-
Storage Temperature Range	-65 °C to +150 °C	-
Noise	< -25 dB	-
Thermal EMF	< 0.1 µV/°C	-
Shelf Life Stability: Absolute	ΔR ± 0.01 %	1 year at +25 °C

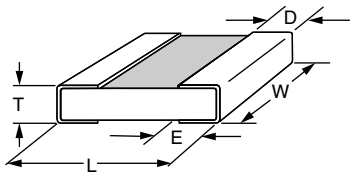
COMPONENT RATINGS

CASE SIZE	MAX. WORKING VOLTAGE (V)	POWER RATING (mW)	RESISTANCE RANGE (Ω) BY CHARACTERISTICS TOLERANCE			
			H, K, L, M (0.1 %, 0.25 %, 0.5 %)	H, K, L, M (1 %, 2 %, 5 %, 10 %)	E (0.1 %, 0.25 %, 0.5 %)	E (1 %, 2 %, 5 %, 10 %)
M55342X01	40	50	20 to 150K	22 to 150K	49.9 to 150K	51 to 150K
M55342X02	40	125	20 to 301K	20 to 300K	49.9 to 301K	51 to 300K
M55342X03	75	200	10 to 649K	10 to 649K	49.9 to 649K	51 to 680K
M55342X04	125	150	10 to 1.69M	10 to 1.69M	49.9 to 1.69M	51 to 1.80M
M55342X05	175	225	10 to 3.16M	10 to 3.30M	49.9 to 3.16M	51.0 to 3.30M
M55342X06	50	150	10 to 475K	10 to 470K	49.9 to 475K	51 to 470K
D55342X07	100	250	10 to 1.50M	10 to 1.50M	49.9 to 1.50M	51 to 1.50M
M55342X08	150	800	10 to 4.02M	10 to 3.90M	49.9 to 4.02M	51.0 to 3.90M
M55342X09	200	1000	10 to 6.19M	10 to 6.20M	49.9 to 6.19M	51.0 to 6.20M
M55342X10	75	500	49.9 to 1.00M	51 to 1.00M	49.9 to 1.00M	51 to 1.00M
M55342X11	30	50	20 to 100K	22 to 100K	49.9 to 100K	51 to 100K
M55342X12	50	100	10 to 258K	10 to 261K	49.9 to 258K	49.9 to 261K

For technical questions, contact: thinfilm@vishay.com

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DIMENSIONS in inches



CASE SIZE	TERM.	L	W	T	D	E
M55342X01	B	0.055 ± 0.006	0.025 ± 0.005	0.010 to 0.033	0.010	0.015
M55342X02	B	0.055 ± 0.006	0.050 ± 0.005	0.010 to 0.033	0.010	0.015
M55342X03	B	0.105 ± 0.007	0.050 ± 0.005	0.010 to 0.033	0.015	0.015
M55342X04	B	0.155 ± 0.007	0.050 ± 0.005	0.015 to 0.033	0.015	0.015
M55342X05	B	0.230 ± 0.007	0.075 ± 0.005	0.010 to 0.033	0.020	0.020
M55342X06	B	0.080 ± 0.006	0.050 ± 0.005	0.010 to 0.033	0.016 ± 0.008	0.015
D55342X07	B	0.126 ± 0.008	0.063 ± 0.005	0.010 to 0.033	0.020 + 0.005 / - 0.010	
M55342X08	B	0.209 ± 0.009	0.098 ± 0.005	0.010 to 0.033	0.020	0.020
M55342X09	B	0.259 + 0.009 / - 0.015	0.124 ± 0.005	0.010 to 0.033	0.020	0.020
M55342X10	B	0.105 ± 0.007	0.100 ± 0.005	0.010 to 0.033	0.015	0.015
M55342X11	B	0.042 ± 0.008	0.022 ± 0.005	0.010 to 0.033	0.010	0.010
M55342X12	B	0.064 ± 0.006	0.032 ± 0.005	0.010 to 0.033	0.012	0.015

ENVIRONMENTAL TESTS

ENVIRONMENTAL TEST	MIL-PRF-55342 LIMITS (ΔR ±)	VISHAY PERFORMANCE (ΔR ±)
Thermal Shock	0.10 %	0.02 %
Low Temperature Operation	0.10 %	0.03 %
Short Time Overload	0.10 %	0.05 %
High Temperature Exposure	0.10 %	0.01 %
Resistance to Bonding	0.20 %	0.01 %
Moisture Resistance	0.20 %	0.04 %
TCR	± 25 ppm/°C	< 15 ppm/°C
Life (2000 h at + 70 °C)	0.05 %	0.02 %
Life (10 000 h at + 70 °C)	2.00 %	0.04 %

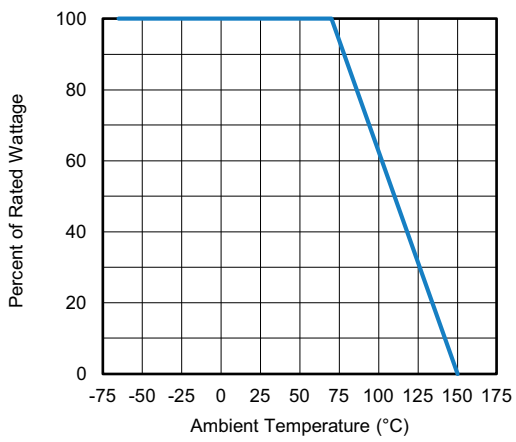
MECHANICAL SPECIFICATIONS

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

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DERATING



GLOBAL PART NUMBER INFORMATION

Global Part Numbering: M55342E06B1C00TTS

M	5	5	3	4	2	E	0	7	B	1	C	0	0	T	T	S	V

MODEL	TCR CHARACTERISTIC	CASE SIZE	TERMINATION	OHMIC VALUE	PRODUCT LEVEL DESIGNATOR	PACKAGING	VENDOR
M55342 or **D55342** (/07 size only)	**E** = 25 ppm/°C **H** = 50 ppm/°C **K** = 100 ppm/°C (1) **L** = 200 ppm/°C **M** = 300 ppm/°C (1)	**01** = 0502 **02** = 0505 **03** = 1005 **04** = 1505 **05** = 2208 **06** = 0705 **07** = 1206 **08** = 2010 **09** = 2512 **10** = 1010 **11** = 0402 **12** = 0603	**B** = solderable	Three digits and a letter. Letter identifies tolerance, acts as multiplier and decimal locator.	**T** = space level	**BS** = BULK 1 min., 1 mult. WAFFLE PACK **WS** = WAFFLE 25 min., 1 mult. **WI** = 25 min., 1 mult. (item single lot date code) **WP** = 25 min., 1 mult. (package unit single lot date code) **W0** = 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 **TS** = 25 min., 1 mult. **TI** = 25 min., 1 mult. (item single lot date code) **TP** = 25 min., 1 mult. (package unit single lot date code)	**V** = Vishay Thin Film (1) **M** = part marked (2)

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

Notes

- For all other M/D55342 failure rate options please see VTF standard E/H datasheet: www.vishay.com/ppg?60018

(1) For K, L and M TCR ≥ 1 % tolerance add a V at end of part number to specify Vishay Thin Film vs. Dale Thick Film.
E.g.: M55342K06B1F00TWSV

(2) Option 1 marking only case size 02 not available. Part marking available on the following: 0705, 1005, 1206, 1505, 2010. 2208, 2512

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