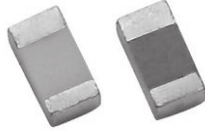




QPL MIL-PRF-55342 Qualified Thin Film Resistor, Surface-Mount Chip



LINKS TO ADDITIONAL RESOURCES



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 uniformity. 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.

FEATURES

- T-level (space) qualified
- Passes outgassing requirements of ASTM-E595
- TCR to ± 25 ppm/ $^{\circ}$ C
- Tolerances to ± 0.1 %
- 100 % power conditioning

TYPICAL PERFORMANCE

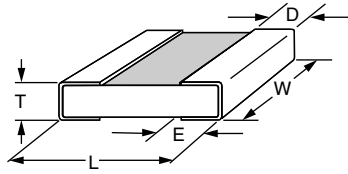
| | ABSOLUTE |
|------|----------|
| TCR | 25 |
| TOL. | 0.1 |

| STANDARD ELECTRICAL SPECIFICATIONS | | |
|------------------------------------|---|---------------------------------------|
| TEST | SPECIFICATIONS | CONDITIONS |
| Material | Tamelox resistor film (passivated nichrome) | - |
| Resistance Range | 10 Ω to 6.19 M Ω (size dependent) | - |
| TCR: Absolute | 25 ppm/ $^{\circ}$ C (E), 50 ppm/ $^{\circ}$ C (H) | -55 $^{\circ}$ C to +125 $^{\circ}$ C |
| Tolerance: Absolute | ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %, ± 2 %, 5 %, ± 10 % | +25 $^{\circ}$ C |
| Stability: Absolute | $\Delta R \pm 0.02$ % | 2000 h at +70 $^{\circ}$ C |
| Voltage Coefficient | < 0.1 ppm/V | - |
| Working Voltage | 40 V to 125 V | - |
| Operating Temperature Range | -65 $^{\circ}$ C to +150 $^{\circ}$ C | - |
| Storage Temperature Range | -65 $^{\circ}$ C to +150 $^{\circ}$ C | - |
| Noise | < -25 dB | - |
| Thermal EMF | < 0.1 μ V/ $^{\circ}$ C | - |
| Shelf Life Stability: Absolute | $\Delta R \pm 0.01$ % | 1 year at +25 $^{\circ}$ 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 |



DIMENSIONS in inches



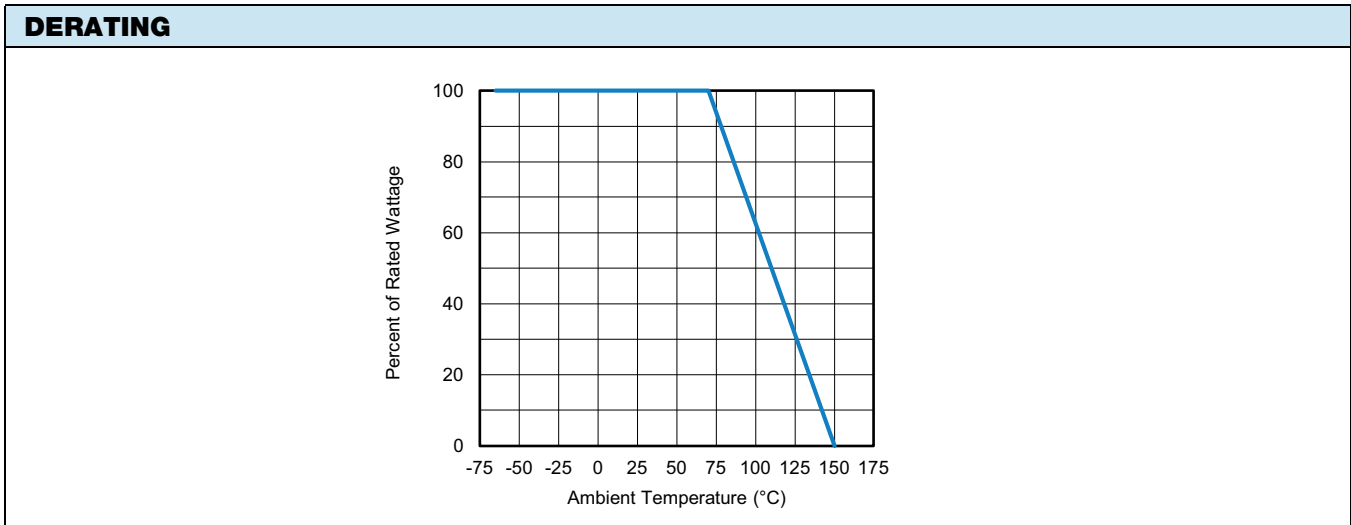
| CASE SIZE | TERM. | L | W | T | D | E |
|-----------|-------|-------------------------|---------------|----------------|-------------------------|-------|
| M55342X01 | B | 0.055 ± 0.006 | 0.025 ± 0.005 | 0.010 to 0.033 | 0.010 | 0.015 |
| M55342X02 | B | 0.055 ± 0.006 | 0.050 ± 0.005 | 0.010 to 0.033 | 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 |



GLOBAL PART NUMBER INFORMATION

Global Part Numbering: M55342E06B1C00TTSV

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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. 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 | 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) WO = 100 min., 100 mult. TAPE AND REEL TO = 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⁾ |

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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