



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



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

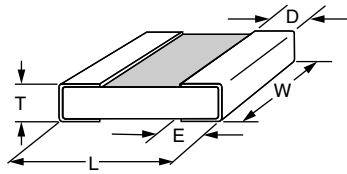
	ABSOLUTE
TCR	25
TOL.	0.1

STANDARD ELECTRICAL SPECIFICATIONS		
TEST	SPECIFICATIONS	CONDITIONS
Material	Tamelox resistor film (passivated nichrome)	-
Resistance Range	10 Ω to 6.19 M Ω (size dependant)	-
TCR: Absolute	25 ppm/ $^{\circ}$ C (E), 50 ppm/ $^{\circ}$ C (H)	-55 $^{\circ}$ C to +125 $^{\circ}$ C
Tolerance: Absolute	± 0.1 %	+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	-55 $^{\circ}$ C to +150 $^{\circ}$ C	-
Storage Temperature Range	-55 $^{\circ}$ 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 %)	E (0.1 %, 0.25 %, 0.5 %)	E (1 %, 2 %, 5 %)
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 / 0.033	0.010	0.015
M55342X02	B	0.055 ± 0.006	0.050 ± 0.005	0.012 / 0.033	0.010	0.015
M55342X03	B	0.105 ± 0.007	0.050 ± 0.005	0.015 / 0.033	0.015	0.015
M55342X04	B	0.155 ± 0.007	0.050 ± 0.005	0.015 / 0.033	0.015	0.015
M55342X05	B	0.230 ± 0.007	0.075 ± 0.005	0.015 / 0.033	0.020	0.020
M55342X06	B	0.080 ± 0.006	0.050 ± 0.005	0.015 / 0.033	0.016 ± 0.008	0.015
D55342X07	B	0.126 ± 0.008	0.063 ± 0.005	0.015 / 0.033	0.020 + 0.005 / - 0.010	
M55342X08	B	0.209 ± 0.009	0.098 ± 0.005	0.015 / 0.033	0.020	0.020
M55342X09	B	0.259 + 0.009 / - 0.015	0.124 ± 0.005	0.015 / 0.033	0.020	0.020
M55342X10	B	0.105 ± 0.007	0.100 ± 0.005	0.015 / 0.033	0.015	0.015
M55342X11	B	0.042 ± 0.008	0.022 ± 0.005	0.010 / 0.033	0.010	0.010
M55342X12	B	0.064 ± 0.006	0.032 ± 0.005	0.010 / 0.033	0.012	0.015

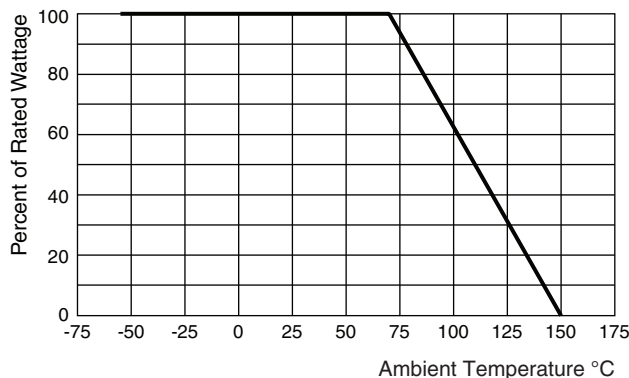
ENVIRONMENTAL TESTS

ENVIRONMENTAL TEST	MIL-PRF-55342 LIMITS ($\Delta R \pm$)	VISHAY PERFORMANCE ($\Delta R \pm$)
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	Plated solder SN 90/10

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. 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) 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 = 100 min., 1 mult TI = 100 min., 1 mult (item single lot date code) TP = 100 min., 1 mult (package unit single lot date code)			V = Vishay Thin Film (1) M = Part marked (2)						

Notes

(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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