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

FEATURES

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

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.

TYPICAL PERFORMANCE

	ABSOLUTE
TCR	25
TOL.	0.1

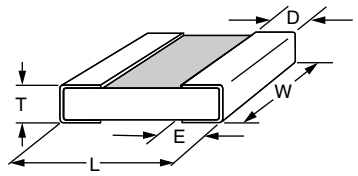
STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Resistance Range	100 Ω to 1.5 MΩ	-
TCR: Absolute	25 ppm/°C (E), 50 ppm/°C (H)	- 55 °C to + 125 °C
Tolerance: Absolute	± 0.1 %	+ 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	- 55 °C to + 125 °C	-
Storage Temperature Range	- 55 °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			
			E (0.1 %)	E (1 %, 2 %, 5 %)	H, K, M (0.1 %)	H, K, M (1 %, 2 %, 5 %)
M55342/02	40	125	49.9 to 301K	49.9 to 301K	20 to 301K	20 to 301K
M55342/03	75	200	49.9 to 649K	49.9 to 649K	10 to 649K	10 to 649K
M55342/04	125	150	49.9 to 1.69M	49.9 to 1.69M	10 to 1.69M	10 to 1.69M
M55342/06	50	150	49.9 to 475K	49.9 to 475K	10 to 475K	10 to 475K
D55342/07	100	250	49.9 to 1.5M	49.9 to 1.5M	10 to 1.5M	10 to 1.5M
M55342/10	75	500	49.9 to 1M	49.9 to 1M	49.9 to 1M	49.9 to 1M

DIMENSIONS in inches



CASE SIZE	TERM.	L	W	T	D	E
M55342/02	B	0.055 ± 0.006	0.050 ± 0.003	0.012 to 0.033	0.010 ± 0.005	0.015 ± 0.005
M55342/03	B	0.105 ± 0.007	0.050 ± 0.003	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005
M55342/04	B	0.155 ± 0.007	0.050 ± 0.003	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005
M55342/06	B	0.080 ± 0.006	0.050 ± 0.003	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
M55342/10	B	0.105 ± 0.007	0.100 ± 0.005	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005

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	Passivated nichrome
Substrate Material	Alumina
Chip Terminations	Solder over nickel
Fused Solder	SN 63

GLOBAL PART NUMBER INFORMATION

Global Part Numbering: M55342E06B1C00TTS

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

MODEL

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

TCR CHARACTERISTIC

E = 25 ppm/°C > 100 Ω
H = 50 ppm/°C
K = 100 ppm/°C (1)
M = 300 ppm/°C (1)

CASE SIZE

02 = 0505
03 = 1005
04 = 1505
06 = 0705
07 = 1206
10 = 1010

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
1 %	D	E	F
2 %	G	H	T
5 %	J	K	L
10 %	M	N	P

PRODUCT LEVEL DESIGNATOR

T = Space level

PACKAGING

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)

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)

VENDOR

V = Vishay Thin Film (1)

Notes

(1) For K 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

- Consult factory for additional case size qualification pending

Disclaimer

All product specifications and data are subject to change without notice.

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