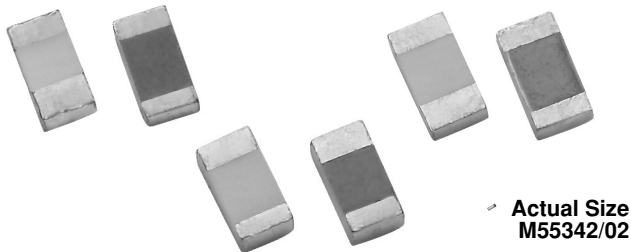


QPL MIL-PRF-55342 Qualified Thin Film Resistor Chips

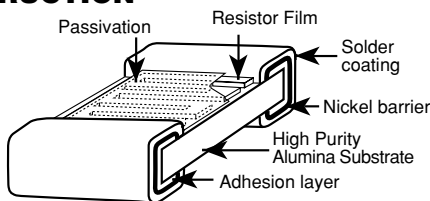


Actual Size
M55342/02

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. Wafer is sawed producing exact dimensions and clean, straight edges.

NOTE: Specification changed by DSCC from MIL-R-55342 to MIL-PRF-55342.

CONSTRUCTION



FEATURES

- Established reliability, "R" failure rate level
- High purity alumina substrate for high power
- 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
- Non-inductive
- Laser-trimmed tolerances to $\pm 0.1\%$
- Wraparound resistance less than 0.010 ohms typical
- In-lot tracking less than 5ppm/°C
- Complete MIL-testing available in-house
- Antistatic waffle pack or tape and reel packaging available

TYPICAL PERFORMANCE

	ABS
TCR	25
TOL	0.1

STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
MATERIAL	TAMELOX [®]	
Absolute TCR:	$\pm 25\text{ppm}/^\circ\text{C}$ to $\pm 100\text{ppm}/^\circ\text{C}$	- 55°C to + 125°C
Absolute Tolerance:	$\pm 0.1\%$	+ 25°C
Stability: ΔR Absolute	$\pm 0.1\%$	2000 hrs. @ + 70°C
Voltage Coefficient	$\pm 0.5\text{ppm}/\text{Volt}$	
Operating Temperature Range	- 55°C to + 125°C	
Storage Temperature Range	- 55°C to + 150°C	
Noise	- 25dB	
Shelf Life Stability	100ppm	1 year @ + 25°C

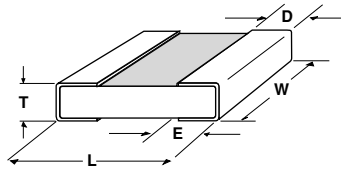
DIMENSIONS

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

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DIMENSIONS (Continued)



SURFACE MOUNT CHIPS

CASE SIZE	MAX. WORKING VOLTAGE	POWER RATING (mW)		RESISTANCE RANGE (ohms)	
		CHARACTERISTIC		(0.1%)	(1%, 2%, 5%, 10%)
		E & H	K		
M55342/01	40	10	20	100 – 130K	59 – 130K
M55342/02	40	25	50	100 – 301K	20 – 301K
M55342/03	40	50	100	100 – 649K	10 – 649K
M55342/04	40	100	150	100 – 1M	10 – 1M
M55342/05	40	200	225	100 – 1.75M	10 – 1.75M
M55342/06	50	50	100	100 – 475K	10 – 475K
D55342/07	100	125	250	100 – 1M	10 – 1M
M55342/08	150	400	800	100 – 2M	10 – 2M
M55342/09	200	500	1000	100 – 3M	10 – 3M
M55342/10	75	250	500	100 – 1M	50 – 1M
M55342/11	25	40	40	100 – 71.5K	59 – 71.5K
M55342/12	50	70	70	100 – 160K	20 – 160K

ENVIRONMENTAL TESTS		
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	± 25ppm/°C	< 15ppm/°C
Life (2000 hrs @ +70°C)	0.5%	0.0184%
Life (10,000 hrs @ +70°C)	2.0%	0.04%

MECHANICAL SPECIFICATIONS	
Resistive Element	Tamelox®
Substrate Material	Alumina
Terminals	Gold Over Nickel
Plating	SN 60/40

FSCM CAGE # - 57489

How to Order

Series	TCR Characteristic	Case Size	Termination	Value and Tolerance	Failure Rate
M55342 or D55342 /07	E = ±25 ppm/°C ≥ 49.9 ohms vs 100 ohms	01	B = Solderable wraparound (nickel barrier)	Three digits and a letter. Letter identifies tolerance, acts as multiplier and decimal locator. per 1000 hrs. Tolerance 0.1% 1% 2% 5% 10% Multiplier (X1Ω) A D G J M (X1KΩ) B E H K N (X1MΩ) C F T L P C	M = 1.0% per 1000 hrs. P = 0.1% per 1000 hrs. R = 0.01% per 1000 hrs. = Non ER
		02			
		03			
		04			
		05			
		06			
	H = ±50 ppm/°C	07			
		08			
		09			
		10			
		11			
		12			
K = ±100 ppm/°C	01				
	02				
	03				
	04				
	05				
	06				

Example: **M55342K06B5E60R** calls out QPL nickel barrier solderable wraparound termination chip resistor, 0705 size, 5600 ohms ±1.0%, ±100 ppm/°C TCR and "R" failure rate or 0.01% per 1,000 hours. Consult factory for other sizes.

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