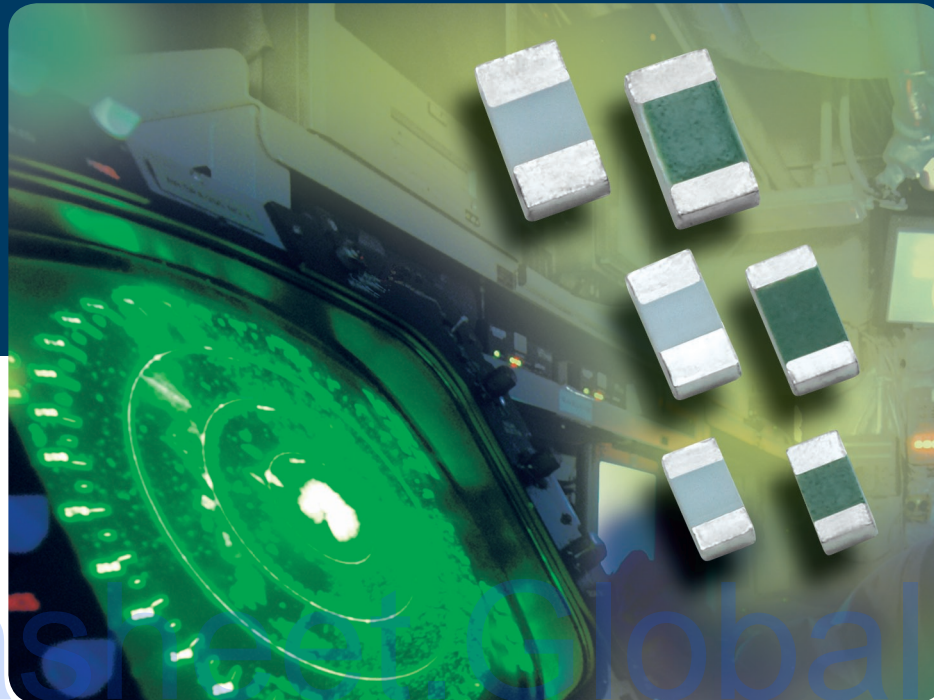




# THIN FILM RESISTOR

E/H



Datasheet Global

## QPL MIL-PRF-55342 Chip Resistor

Thin Film Resistor — QPL Established Reliability Military Chip Resistor

### KEY BENEFITS

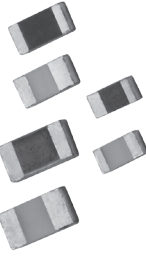
- Twelve qualified case sizes from 0402 to 2512
- Characteristics E, H, K, M
- Precision tolerances to 0.1 %
- “R” failure rate level

### APPLICATIONS

- Missile/Air flight control
- Communication systems
- Ground support radar
- Guidance and navigation control

Datasheet is available on our web site at [www.vishay.com](http://www.vishay.com)  
for QPL Chip Resistors - <http://www.vishay.com/doc?60018>

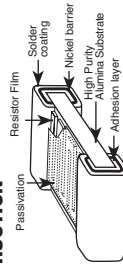
# QPL MIL-PRF-55342-Qualified Thin Film Resistor Chips



Thin Film 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. Water is sawed producing exact dimensions and clean, straight edges.

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

### CONSTRUCTION



### TYPICAL PERFORMANCE

TCR	± 0.1 %
TOL	± 0.1

### FEATURES

- Established reliability, "R" failure rate level
- High purity alumina substrate for high power ( $\pm 25$  ppm/ $^{\circ}$ C, 0.1 ppm/ $^{\circ}$ C)
- Wraparound termination featuring a tenacious adhesion layer covered with an electroplated nickel barrier layer for +150  $^{\circ}$ C operating conditions
- Very low noise and voltage coefficient ( $\pm 25$  ppm/ $^{\circ}$ C, 0.1 ppm/ $^{\circ}$ C)
- Non-inductive
- Laser-trimmed tolerances  $\pm 0.1$  %
- Wraparound resistances less than 0.010 ohms typical
- In-lot tracking less than 5 ppm/ $^{\circ}$ C
- Complete MIL-testing available in-house
- Antistatic waflie pack or tape and reel packaging available

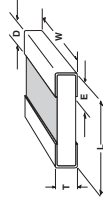
### ENVIRONMENTAL TESTS

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	$\pm 25$ ppm/ $^{\circ}$ C	< 15 ppm/ $^{\circ}$ C
Life (2000 hrs at +70 $^{\circ}$ C)	0.5 %	0.184 %
Life (10 000 hrs at +70 $^{\circ}$ C)	2.0 %	0.04 %

### ENVIRONMENTAL TESTS

MIL-PRF-55342 LIMITS ( $\Delta/R \pm$ )	VISHAY PERFORMANCE ( $\Delta/R \pm$ )	
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	$\pm 25$ ppm/ $^{\circ}$ C	< 15 ppm/ $^{\circ}$ C
Life (2000 hrs at +70 $^{\circ}$ C)	0.5 %	0.184 %
Life (10 000 hrs at +70 $^{\circ}$ C)	2.0 %	0.04 %

### DIMENSIONS (continued)



CASE SIZE	MAX. WORKING VOLTAGE	POWER RATING (mW)	CHARACTERISTIC		RES. RANGE ( $\Omega$ )		BY CHARACTERISTICS TOLERANCE	
			E, H	K	E, H, K (0.1 %)	K	E (1 %, 2 %, 5 %, 10 %)	H, K (1 %, 2 %, 5 %, 10 %)
M55342/01	40	10	20	100 - 130K	59 - 130K	59 - 130K	59 - 130K	59 - 130K
M55342/02	40	25	50	100 - 301K	49.9 - 301K	20 - 301K	20 - 301K	20 - 301K
M55342/03	40	50	100	100 - 649K	49.9 - 649K	10 - 649K	10 - 649K	10 - 649K
M55342/04	40	100	150	100 - 1M	49.9 - 1M	10 - 1M	10 - 1M	10 - 1M
M55342/05	40	200	225	100 - 1.75M	49.9 - 1.75M	10 - 1.75M	10 - 1.75M	10 - 1.75M
M55342/06	50	500	500	100 - 4.75K	49.9 - 4.75K	10 - 4.75K	10 - 4.75K	10 - 4.75K
M55342/07	100	125	250	100 - 1M	49.9 - 1M	10 - 1M	10 - 1M	10 - 1M
M55342/08	150	400	800	100 - 2M	49.9 - 2M	10 - 2M	10 - 2M	10 - 2M
M55342/09	200	500	1000	100 - 3M	49.9 - 3M	10 - 3M	10 - 3M	10 - 3M
M55342/10	75	250	500	100 - 1M	49.9 - 1M	10 - 1M	10 - 1M	10 - 1M
M55342/11	25	40	40	100 - 71.5K	59 - 71.5K	20 - 160K	20 - 160K	20 - 160K
M55342/12	50	70	70	100 - 160K	49.9 - 160K	20 - 160K	20 - 160K	20 - 160K

### MECHANICAL SPECIFICATIONS

Resistive Element	TameloX
Substrate Material	Alumina
Chip Terminations	Gold over Nickel
Plating	SN 80/40

### FSCM CAGE # - 57489

### GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: M5534206B1C00RTS (preferred part number format)

M	5	5	3	4	2	E	0	6	B	1	C	0	0	R	T	S
GLOBAL MODEL	M55342	TCR CHARACTERISTIC	E = 25 ppm/ $^{\circ}$ C > 100 $\Omega$	CASE SIZE	01 = 0602 02 = 0606 03 = 0603 04 = 1505 05 = 2208 06 = 0706 07 = 0806 08 = 2016 09 = 2512 10 = 1010 11 = 0402 12 = 0603	TERMINATION	B = solderable	CHMIC VALUE	Three digits and a letter. Letter identifies tolerance, acts as multiplier and decimal locator. Multiplier Tolerance 1.0 1.0% +1Mk 0.1 A 0.1 % D 2 % G 5 % H 10 % J K L M N P	FAILURE RATE	M = 1.0 % per 1000 hrs. R = 0.001 % per 1000 hrs. C = non ER version	PACKAGING	BS = BULK 100 Min 1 Mult WS = 100 Min 1 Mult TAPE AND REEL TO = 100 Min 100 Mult TR = 3000 Min 100 Mult TS = 500 Min 500 Mult TF = Full Reel 2500 TN = 100 Min 1 Mult			
Historical Part Number example: M5534206B5E60R (will continue to be accepted)																
SERIES	M55342	CHARACTERISTIC	K	CASE SIZE	06	TERMINATION	B	VALUE AND TOLERANCE	5E60	FAILURE RATE	R					

Revision 10-May-06

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