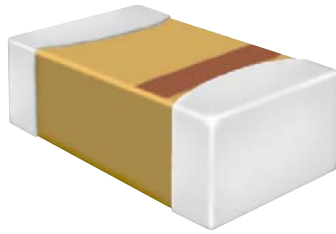


# TMC Series



Established Reliability TACmicrochip®



- Weibull graded
- Reliability level: 0.1% / 1000 hrs.
- Low leakage
- CV range: 0.33-68μF / 3-20V
- 6 case sizes available
- Approved for use in life support and implantable medical devices

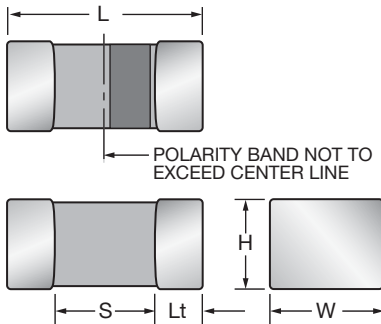


LEAD-FREE  
LEAD-FREE COMPATIBLE  
COMPONENT



RoHS  
COMPLIANT

## CASE DIMENSIONS: millimeters (inches)



Code	EIA Code	EIA Metric	Length (L)	Width (W)	Height (H)	Termination Spacing(S)	Minimum Termination Length (Lt)	Average Mass
A	1206	3126-18	3.20 <sup>+0.20</sup> <sub>-0.20</sub> (0.126 <sup>+0.008</sup> <sub>-0.008</sub> )	1.60 <sup>+0.20</sup> <sub>-0.20</sub> (0.063 <sup>+0.008</sup> <sub>-0.008</sub> )	1.60 <sup>+0.20</sup> <sub>-0.20</sub> (0.063 <sup>+0.008</sup> <sub>-0.008</sub> )	1.80 min.	0.15 (0.006)	44.6mg
B	1210	3528-15	3.50 <sup>+0.20</sup> <sub>-0.20</sub> (0.138 <sup>+0.008</sup> <sub>-0.008</sub> )	2.80 <sup>+0.20</sup> <sub>-0.10</sub> (0.110 <sup>+0.008</sup> <sub>-0.004</sub> )	1.50 max.	2.00 min.	0.15 min.	90.0mg
H	0805	2012-10	2.00 <sup>+0.20</sup> <sub>-0.00</sub> (0.079 <sup>+0.008</sup> <sub>-0.000</sub> )	1.35 <sup>+0.15</sup> <sub>-0.10</sub> (0.53 <sup>+0.006</sup> <sub>-0.007</sub> )	1.00 max.	0.70 min.	0.15 min.	17.1mg
K	0402	1005-07	1.00 <sup>+0.20</sup> <sub>-0.00</sub> (0.039 <sup>+0.008</sup> <sub>-0.000</sub> )	0.50 <sup>+0.20</sup> <sub>-0.00</sub> (0.020 <sup>+0.008</sup> <sub>-0.000</sub> )	0.50 <sup>+0.20</sup> <sub>-0.00</sub> (0.020 <sup>+0.008</sup> <sub>-0.000</sub> )	0.40 min.	0.10 (0.004)	2.0mg
L	0603	1608-10	1.60 <sup>+0.25</sup> <sub>-0.15</sub> (0.063 <sup>+0.010</sup> <sub>-0.006</sub> )	0.85 <sup>+0.20</sup> <sub>-0.10</sub> (0.033 <sup>+0.008</sup> <sub>-0.004</sub> )	0.85 <sup>+0.20</sup> <sub>-0.10</sub> (0.033 <sup>+0.008</sup> <sub>-0.004</sub> )	0.55 min.	0.15 (0.006)	8.6mg
R	0805	2012-15	2.00 <sup>+0.25</sup> <sub>-0.15</sub> (0.079 <sup>+0.010</sup> <sub>-0.006</sub> )	1.35 <sup>+0.20</sup> <sub>-0.10</sub> (0.053 <sup>+0.008</sup> <sub>-0.004</sub> )	1.35 <sup>+0.20</sup> <sub>-0.10</sub> (0.053 <sup>+0.008</sup> <sub>-0.004</sub> )	0.70 min.	0.15 (0.006)	29.9mg

## HOW TO ORDER

<b>TMC</b>	<b>R</b>	<b>106</b>	<b>M</b>	<b>010</b>	<b>E</b>	<b>HS</b>
<b>Type</b> TACmicrochip®	<b>Case Code</b> See table above	<b>Capacitance Code</b> pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	<b>Tolerance</b> K = ±10% M = ±20%	<b>Rated DC Voltage</b> 003 = 3Vdc 004 = 4Vdc 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc	<b>Packaging</b> E = Non Modular qty. supplied on 7" reel	<b>Termination and Special Requirements</b> Alternative characters may be used for special requirements.

### Packaging Suffix

Reel Size	Standard Tin Termination Plastic Tape
Case	A/B/H/K/L/R
7"	EHS
4 1/4"	VHS

## TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C							
Capacitance Range:	0.47μF to 68μF							
Capacitance Tolerance:	±10%; ±20%							
Leakage Current DCL:	0.005CV or 0.2μA whichever is the greater							
Rated Voltage (V <sub>R</sub> )	≤ +85°C:	3	4	6.3	10	16	20	25
Category Voltage (V <sub>C</sub> )	≤ +125°C:	2	2.7	4	7	10	13	17
Surge Voltage (V <sub>S</sub> )	≤ +85°C:	3.9	5.2	8	13	20	26	32
Surge Voltage (V <sub>S</sub> )	≤ +125°C:	2.6	3.2	5	8	12	16	20
Temperature Range:	-55°C to +125°C							
Reliability:	HRC5000, Weibull B grade, 0.1% per 1,000 hours							
Termination Finish:	Nickel and Tin Plating (standard), Nickel and Gold Plating option available upon request							



### ESTABLISHED RELIABILITY RANGE (EIA Sizes) (LETTER DENOTES CASE SIZE)

Capacitance		Voltage Rating DC (V <sub>R</sub> ) at 85°C								
Cap. (µF)	Code	2.0V	3.0V	4.0V	6.3V	10V	16V	20V	25V	50V
0.10 0.15 0.22	104 154 224							K*		
0.33 0.47 0.68	334 474 684					K/L L	L L			
1.0 1.5 2.2	105 155 225				K	K*/L L L	L L		R*	A*
3.3 4.7 6.8	335 475 685				L R	L/R L/R R	R* R*	R R <sup>(M)</sup>	A*	
10 15 22	106 156 226		R	R R R	R R* R	H*/R A*	R	A*		
33 47 68	336 476 686		R	R <sup>(M)</sup> R* A	R* A A*	B* B				

Released codes <sup>(M tolerance only)</sup>

\*Codes under development – subject to change.

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher ratings in the same case size, to the same reliability standards.

### RATINGS & PART NUMBER REFERENCE

AVX Part No.	EIA	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz
TMCR156*003EHS	0805	R	15	3.0	0.2	8	6
TMCR336*003EHS	0805	R	33	3.0	0.5	10	6
TMCR106*004EHS	0805	R	10	4.0	0.2	8	6
TMCR156*004EHS	0805	R	15	4.0	0.3	8	6
TMCR226*004EHS	0805	R	22	4.0	0.4	15	6
TMCR336M004EHS	0805	R	33	4.0	0.7	10	6
TMCR476*004EHS	0805	R	47	4.0	0.9	15	6
TMCA686*004EHS	1206	A	68	4.0	1.4	15	1
TMCK105*006EHS	0402	K	1.0	6.3	0.2	6	15
TMCL475*006EHS	0603	L	4.7	6.3	0.2	8	10
TMCR685*006EHS	0805	R	6.8	6.3	0.2	8	6
TMCR106*006EHS	0805	R	10	6.3	0.3	8	6
TMCR156*006EHS	0805	R	15	6.3	0.5	8	6
TMCR226*006EHS	0805	R	22	6.3	0.7	15	6
TMCR336*006EHS	0805	R	33	6.3	1	20	6
TMCA476*006EHS	1206	A	47	6.3	1.5	15	1
TMCA686*006EHS	1206	A	68	6.3	2.2	15	1
TMCK474*010EHS	0402	K	0.47	10	0.2	6	15
TMCL474*010EHS	0603	L	0.47	10	0.2	6	10
TMCL684*010EHS	0603	L	0.68	10	0.2	6	10
TMCK105*010EHS	0402	K	1.0	10	0.2	6	15
TMCL105*010EHS	0603	L	1.0	10	0.2	6	10
TMCL155*010EHS	0603	L	1.5	10	0.2	6	10
TMCL225*010EHS	0603	L	2.2	10	0.2	6	10

\*Insert K for ±10% and M for ±20% Capacitance Tolerance

# Refers to termination finished and packaging reel size

MSL level: See page 118 (6. Moisture Sensitivity Level) or packaging and reel label.

AVX Part No.	EIA	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz
TMCL335*010EHS	0603	L	3.3	10	0.2	8	10
TMCR335*010EHS	0805	R	3.3	10	0.2	8	6
TMCL475*010EHS	0603	L	4.7	10	0.2	10	10
TMCR475*010EHS	0805	R	4.7	10	0.2	8	6
TMCR685*010EHS	0805	R	6.8	10	0.3	8	6
TMCH106*010EHS	0805	H	10	10	0.5	8	6
TMCR106*010EHS	0805	R	10	10	0.5	8	6
TMCA226*010EHS	1206	A	22	10	1.1	20	1
TMCB336*010EHS	1210	B	33	10	1.7	15	1
TMCB476*010EHS	1210	B	47	10	2.4	15	1
TMCL474*016EHS	0603	L	0.47	16	0.2	6	10
TMCL684*016EHS	0603	L	0.68	16	0.2	6	10
TMCL105*016EHS	0603	L	1.0	16	0.2	6	10
TMCL225*016EHS	0603	L	2.2	16	0.2	10	10
TMCR335*016#HS	0805	R	3.3	16	0.2	8	6
TMCR685*016#HS	0805	R	6.8	16	0.5	10	16
TMCR106*016EHS	0805	R	10	16	0.8	10	6
TMCK104*020EHS	0402	K	0.1	20	0.2	6	40
TMCR335*020EHS	0805	R	3.3	20	0.2	8	6
TMCR475M020EHS	0805	R	4.7	20	0.5	8	6
TMCA106*020#HS	1206	A	10	20	1.0	6	1
TMCR105*025EHS	0804	R	1.0	25	0.2	10	6
TMCA475*025EHS	1206	A	4.7	25	0.6	8	1
TMCA105*050#HS	1206	A	1.0	50	0.2	6	1

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

**NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.**