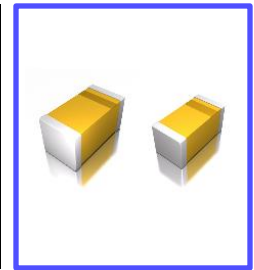


FEATURES	
<ul style="list-style-type: none"> - 0402 (EIA 1005-07) footprint – Nemco case size P - 0603 (EIA 1608-10) footprint – Nemco case size R - Lead-free / RoHS compliant - Capacitance range: 0.47µF to 22µF - Voltage range: 2 to 16 WVDC - Meets or exceeds EIA 535 BAAC and IECQ standards (QC300801/US001, IS-28) - Surge tested for maximum robustness 	<ul style="list-style-type: none"> - Operating Temperature range -55°C to +125°C, 2/3 x Vr (linear derating) above +85°C - Laser marking polarity stripe - Encapsulant material satisfies the UL 94 V0 flammability classification - MSL (moisture sensitivity level) per IPC/Jedec J-STD-020B is level 1

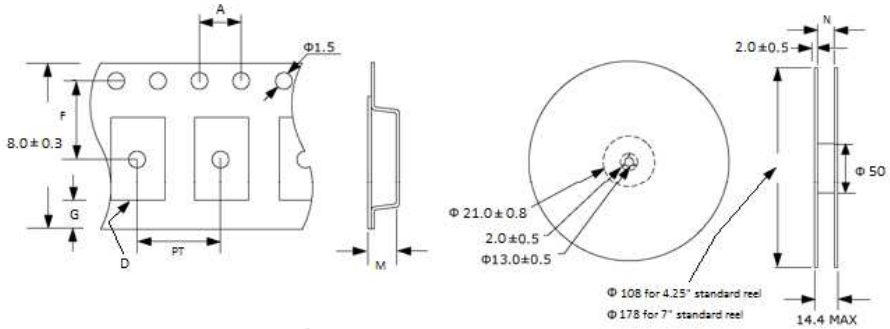
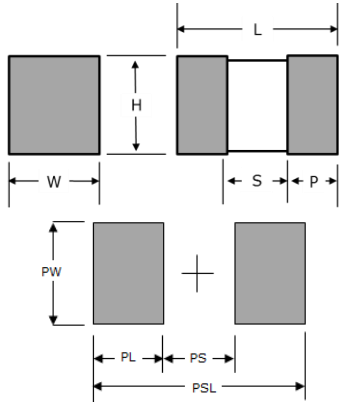


PART NUMBERING GUIDE	
<p>SERIES TYPE → MCT</p> <p>CAPACITANCE in microfarads (µF) Ex. 0.68µF would be .68</p> <p>VOLTAGE</p> <p>2 3 4 5 6(6.3) 10 16</p>	<p>← 7500 ← <i>Max ESR in milliohms</i></p> <p>TOLERANCE M = (±20%) K = (±10%)</p> <p>CASE SIZE P (1005-07) R (1608-10)</p> <p>Standard packaging is Tape & Reel, 4" diameter reel. For 7" diameter, contact factory for ordering information</p>

ELECTRICAL SPECIFICATION	
Technical Data:	All technical data relate to an ambient temperature of +25°C
Capacitance Range	0.47µF to 22µF
Capacitance Tolerance	±10% (K); ±20% (M)
Rated Voltage DC (V _R) ≤±85°C	2 3 4 5 6(6.3) 10 16
Category Voltage DC (V _C) ≤±125°C	1.3 2.0 2.7 3.3 4 7 10
Surge Voltage (V _S) ≤±85°C	2.7 3.9 5.2 6.5 8 13 20
Surge Voltage (V _S) ≤±125°C	1.7 2.6 3.2 4.0 5 8 12
Temperature Range	-55°C to +125°C with 2/3 Vr (linear derating) required for operation above +85°C
Reliability	Level M (1% per 1000 hours at rated voltage (V _R), rated temperature (85°C) and 0.1Ω/volt circuit impedance.
Qualifications	Fixed Tantalum Specifications: EIA 525BAAC and IECQ standards (QC300801/US001, IS-28) Solder-ability: Sn Plated Terminations – meets requirements of IEC 68 2.20 test Ta and MIL-STD=202, Method 208 MSL (moisture sensitivity level): Level 1 of IPC/Jedec J-STD-020B

CASE SIZE CROSS REFERENCE: CAPACITANCE AND VOLTAGE RATING (Rated Voltage DC@ 85°C)								
Cap (µF)	2V	3V	4V	5V	6V	10V	16V	
0.47					P,R	P,R	R	
0.68					P,R	P,R	R	
1.0				P,R	P,R	P,R	R	
1.5			R	R	R	R		
2.2		P,R	R	P,R	R	R	R	
3.3	P,R	P,R	R	R	R	R		
4.7	P,R	P,R	R	R	R	R		
6.8	P,R	R	R	R	R	R		
10.0	P,R	R	R	R	R	R		
15.0			R	R				
22.0		R	R					

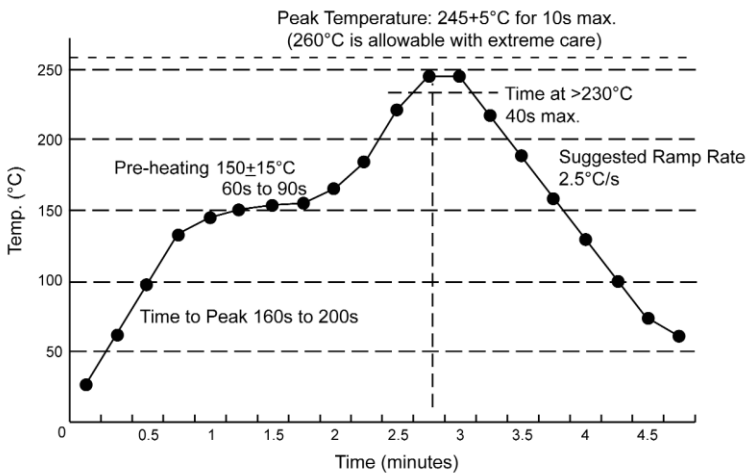
OUTLINE DRAWING AND PAD PRINT **TAPE AND REEL DIMENSION**



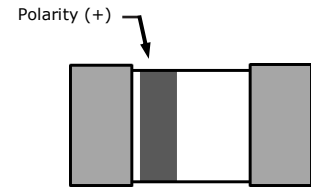
NOTE: Dimensions in millimeters (mm)

NEMCO Size	EIA Size	L ±0.2	W	H	S Min.	P Min.	PSL	PL	PS	PW	G Min.	PT (Pitch)	A	M +0.1 -0.0	D +0.2 -0.0	N ±1	F ±0.05
P	1005-17	1.00	0.50 ±0.20	0.50 ±0.20	0.40	0.10	2.2	0.9	0.4	0.7	0.75	2	2	0.67	0.50	9.5	3.5
R	1608-10	1.60	0.85 ±0.15	0.85 ±0.15	0.65	0.15	2.8	1.1	0.6	1.0	0.75	4	4	1.05	0.80	9.5	3.5

REFLOW PROFILE **MARKING**



Case Sizes: P, R



Due to the small size, only polarity identification appears on the component

Tantalum capacitors are lead-free system compatible system components, meeting the requirements of J-STD-020 standard. Maximum peak temperature 260°C for 10 seconds maximum, 3 reflow cycles.

There are several important general soldering considerations for tantalum capacitors.

- Soldering temperature and time should be the minimum for a good connection.
- Recommended soldering profiles are designed to insure that the temperature of the internal construction of the capacitors does not exceed +220°C.
- Positioning capacitors near components radiating heat such as power transistors should be avoided.
- Allow for an increase to ESR ratings of 1.25 x catalog limit post PCB assembly.

RATINGS AND PART NUMBER REFERENCE 0402 FOOTPRINT (EIA 1005-07) - CASE SIZE P

2V DC @ 85°C (1.3V DC @ 125°C)					
Capacitance (μF)	Case Size	Nemco Part No.	DCL (μA) max	tan δ max. (%)	ESR @ 100kHz max. (mΩ)
3.3	P	MCT3.3 / 2PM15000	0.5	8	15000
4.7	P	MCT4.7 / 2PM15000	0.5	12	15000
6.8	P	MCT6.8 / 2PM15000	0.5	6	15000
10.0	P	MCT10 / 2PM15000	0.5	15	15000
3V DC @ 85°C (2V DC @ 125°C)					
2.2	P	MCT2.2 / 3PM15000	0.5	6	15000
3.3	P	MCT3.3 / 3PM15000	0.5	8	15000
4.7	P	MCT4.7 / 3PM8000	0.5	12	8000
4.7	P	MCT4.7 / 3PM15000	0.5	12	15000
6.3V DC @ 85°C (4V DC @ 125°C)					
1.0	P	MCT1.0 / 6PM15000	0.5	6	15000
2.2	P	MCT2.2 / 6PM8000	0.5	8	8000
2.2	P	MCT2.2 / 6PM15000	0.5	8	15000
10V DC @ 85°C (7V DC @ 125°C)					
0.47	P	MCT.47 / 10PM15000	0.5	6	15000
0.47	P	MCT.47 / 10PM25000	0.5	6	25000
0.68	P	MCT.68 / 10PM15000	0.5	8	15000
1.00	P	MCT1 / 10PM15000	0.5	6	15000

0602 FOOTPRINT (EIA 1608-10) - CASE SIZE R

2 V DC @ 85°C (1.3V DC @ 125°C)					
Capacitance (μF)	Case Size	Nemco Part No.	DCL (μA) max	tan δ max. (%)	ESR @ 100kHz max. (mΩ)
3.3	R	MCT3.3 / 2RM7500	0.5	6	7500
4.7	R	MCT4.7 / 2RM7500	0.5	6	7500
6.8	R	MCT6.8 / 2RM7500	0.5	6	7500
10.0	R	MCT10 / 2RM7500	0.5	10	7500
3V DC @ 85°C (2V DC @ 125°C)					
2.2	R	MCT2.2 / 3RM7500	0.5	6	7500
3.3	R	MCT3.3 / 3RM7500	0.5	6	7500
4.7	R	MCT4.7 / 3RM7500	0.5	6	7500
6.8	R	MCT6.8 / 3RM7500	0.5	6	7500
10.0	R	MCT10 / 3RM7500	0.5	10	7500
22.0	R	MCT22 / 3RM7500	0.7	20	7500
4V DC @ 85°C (2.7V DC @ 125°C)					
1.5	R	MCT1.5 / 4RM7500	0.5	6	7500
2.2	R	MCT2.2 / 4RM7500	0.5	6	7500
3.3	R	MCT3.3 / 4RM7500	0.5	6	7500
4.7	R	MCT4.7 / 4RM7500	0.5	6	7500
6.8	R	MCT6.8 / 4RM7500	0.5	8	7500
10.0	R	MCT10 / 4RM7500	0.5	10	7500
15.0	R	MCT15 / 4RM7500	0.6	20	7500
22.0	R	MCT22 / 4RM5000	0.9	6	5000
22.0	R	MCT22 / 4RM7500	0.9	20	7500
6.3V DC @ 85°C (4V DC @ 125°C)					
1.0	R	MCT1 / 6RM7500	0.5	6	7500
1.5	R	MCT1.5 / 6RM7500	0.5	6	7500
2.2	R	MCT2.2 / 6RM5000	0.5	6	5000
2.2	R	MCT2.2 / 6RM7500	0.5	6	7500
3.3	R	MCT3.3 / 6RM7500	0.5	6	7500
4.7	R	MCT4.7 / 6RM7500	0.5	8	7500
6.8	R	MCT6.8 / 6RM7500	0.6	10	7500
10.0	R	MCT10 / 6RM6000	0.9	10	6000
10.0	R	MCT10 / 6RM4000	0.9	10	4000
15.0	R	MCT15 / 6RM7500	0.5	20	7500
10V DC @ 85°C (7V DC @ 125°C)					
0.47	R	MCT.47 / 10RM7500	0.5	6	7500
0.68	R	MCT.68 / 10RM7500	0.5	6	7500
1.0	R	MCT1 / 10RM5000	0.5	6	5000
1.0	R	MCT1 / 10RM7500	0.5	6	7500
1.5	R	MCT1.5 / 10RM7500	0.5	6	7500
2.2	R	MCT2.2 / 10RM5000	0.5	6	5000
2.2	R	MCT2.2 / 10RM7500	0.6	6	7500
3.3	R	MCT3.3 / 10RM5000	0.5	8	5000
3.3	R	MCT3.3 / 10RM7500	0.5	8	7500
4.7	R	MCT4.7 / 10RM5000	0.5	10	5000
4.7	R	MCT4.7 / 10RM6000	0.5	10	6000
6.8	R	MCT6.8 / 10RM7500	0.7	20	7500
10.0	R	MCT10 / 10RM7500	1.0	20	7500
10.0	R	MCT10 / 10RM4000	1.0	20	4000
16V DC @ 85°C (10V DC @ 125°C)					
0.47	R	MCT.47 / 16RM7500	0.5	6	7500
0.68	R	MCT.68 / 16RM7500	0.5	6	7500
1.0	R	MCT1 / 16RM7500	0.5	6	7500
2.2	R	MCT2.2 / 16RM5000	0.5	10	5000
2.2	R	MCT2.2 / 16RM7500	0.6	10	7500

PACKAGING REFERENCE

CASE SIZE	CASE SIZE	STANDARD PACKAGING	AVAILABLE
NEMCO	EIA IECQ	4" Reel Quantity	7" Reel Quantity
P	1005-07	1000	10000
R	1608-10	500	3500

_ Available in M(±20%) tolerance only.
NEMCO reserves the right to supply a higher voltage rating, tighter tolerance and/or lower ESR in the same case size, to the same reliability standards.