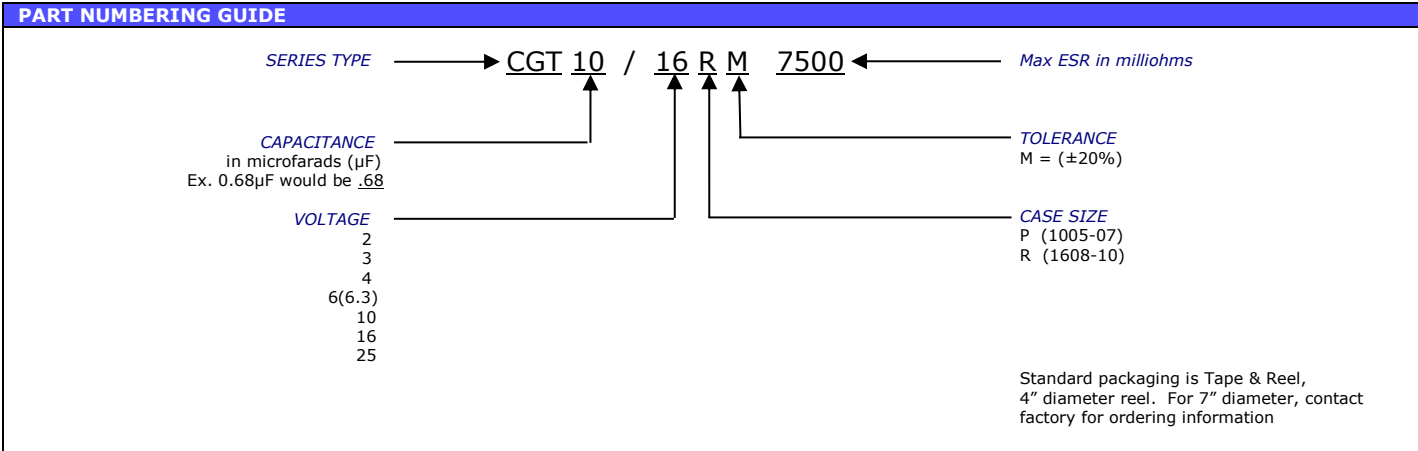
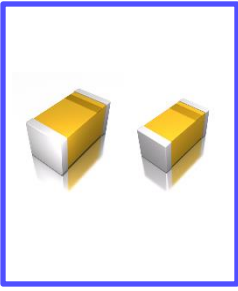


FEATURES	
<ul style="list-style-type: none"> - 0402 (EIA 1005-07) footprint – Nemco case size P - 0603 (EIA 1608-10) footprint – Nemco case size R - Lead-free / RoHS compliant - Capacitance range: 0.47µF to 47µF - Voltage range: 2 to 25 WVDC - Meets or exceeds EIA 535 BAAC and IECQ standards (QC300801/US001, IS-28) - Operating Temperature range -55°C to +125°C linear derating above +40°C to 0.5 x Vr at +85°C and 0.2 x Vr at +125°C 	<ul style="list-style-type: none"> - 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 3 - Reliability .2% per 1000 hours at 85°C, 0.5 x Vr with 0.1 Ω/V series impedance with 60% confidence level

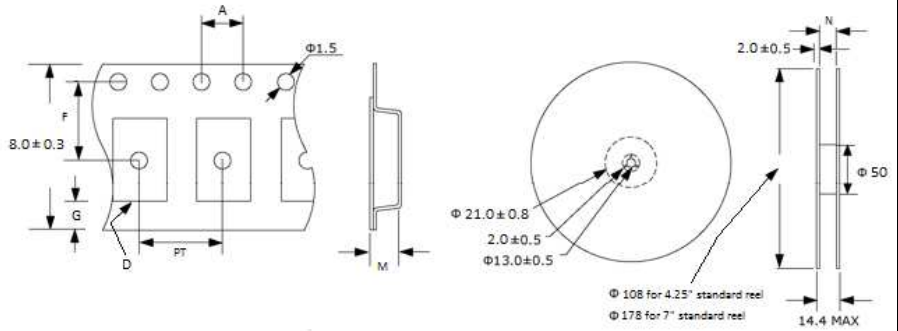
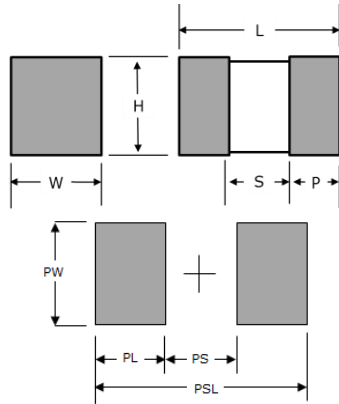


ELECTRICAL SPECIFICATION	
Technical Data:	All technical data relate to an ambient temperature of +25°C
Capacitance Range	0.47µF to 22µF
Capacitance Tolerance	±20% (M)
Rated Voltage DC (V _R) -55°C ≤ +40°C	2 3 4 6(6.3) 10 16 20 25
Temperature Derated Voltage +85°C	1 1.5 2 3.2 5.0 8.0 10.0 12.5
Temperature Derated Voltage +125°C	0.4 0.6 0.8 1.3 2.0 3.2 4.0 5.0
Capacitance	Measured at 120Hz, 0.5 RMS with DC bias of 1.5V. DCL is measured at rated voltage after 5 minutes
Temperature Range	-55°C to +125°C linear derating above +40°C to 0.5 x Vr at +85°C and 0.2 x Vr at +125°C
Reliability	.2% per 1000 hours at 85°C, 0.5 x Vr with 0.1 Ω/V series impedance with 60% confidence level
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 3 of IPC/Jedec J-STD-020B

CASE SIZE CROSS REFERENCE: CAPACITANCE AND VOLTAGE RATING (Rated Voltage DC@ 85°C)								
Cap (µF)	2V	3V	4V	6V	10V	16V	20V	25V
0.47					P,R	P,R		
0.68					P,R	R		
1.0				P,R	P,R	R		R
1.5			R	R	R			
2.2		P,R	R	P,R	P,R	R	R	
3.3	P,R	P,R	R	R	R	R		
4.7	P,R	P,R	P,R	P,R	R			
6.8	P,R	P,R	P,R	R	R			
10.0	P,R	P,R	P,R	P,R	R			
15.0	P		R	R	R			
22.0		R	R	R				
33.0			R	R				
47.0	R	R	R					

OUTLINE DRAWING AND PAD PRINT

TAPE AND REEL DIMENSION

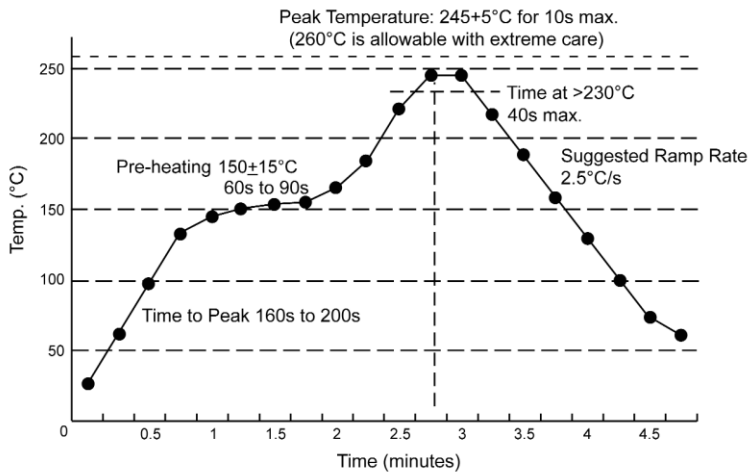


NOTE: Dimensions in millimeters (mm)

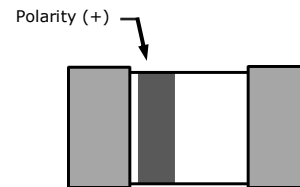
NEMCO Size	EIA Size	L ±0.2	W	H	S Min.	P Min.	PSL	PL	PS	PW	G Min.	PT (Pitch)	A	M +0.1 -0.0	D +0.2 -0.0	N ±1	F ±0.05
P	1005-17	1.00	0.50 ±0.20	0.50 ±0.20	0.40	0.10	2.2	0.9	0.4	0.7	0.75	2	2	0.67	0.50	9.5	3.5
R	1608-10	1.60	0.85 ±0.15	0.85 ±0.15	0.65	0.15	2.8	1.1	0.6	1.0	0.75	4	4	1.05	0.80	9.5	3.5

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

2V DC @ 40°C (1V DC @ 85°C, 0.4V @125°C)				
Capacitance (µF)	Case Size	Nemco Part No.	DCL (µA) max	ESR @ 100kHz max. (mΩ)
3.3	P	CGT3.3 / 2PM15000	0.5	15000
4.7	P	CGT4.7 / 2PM15000	0.5	15000
6.8	P	CGT6.8 / 2PM15000	0.5	15000
10.0	P	CGT10 / 2PM15000	0.5	15000
15.0	P	CGT15 / 2PM15000	0.5	15000
3V DC @ 40°C (1.5V DC @ 85°C, 0.6V @125°C)				
2.2	P	CGT2.2 / 3PM15000	0.5	15000
3.3	P	CGT3.3 / 3PM15000	0.5	15000
4.7	P	CGT4.7 / 3PM15000	0.5	15000
6.8	P	CGT6.8 / 3PM15000	0.5	15000
10.0	P	CGT10 / 3PM15000	0.5	15000
4V DC @ 40°C (2V DC @ 85°C, 0.8V @125°C)				
4.7	P	CGT4.7 / 4PM15000	0.5	15000
6.8	P	CGT6.8 / 4PM8000	0.5	8000
10.0	P	CGT10 / 4PM15000	0.5	15000
6.3V DC @ 40°C (3.2V DC @ 85°C, 1.3V @125°C)				
1.0	P	CGT1 / 6PM15000	0.5	15000
2.2	P	CGT2.2 / 6PM15000	0.5	15000
4.7	P	CGT4.7 / 6PM15000	0.5	15000
10.0	P	CGT10 / 6PM15000	0.5	15000
10V DC @ 40°C (5V DC @ 85°C, 2V @125°C)				
0.47	P	CGT.47 / 10PM7500	0.5	7500
0.68	P	CGT.68 / 10PM7500	0.5	7500
1.0	P	CGT1 / 10PM7500	0.5	7500
2.2	P	CGT2.2 / 10PM7500	0.5	7500
16V DC @ 40°C (8V DC @ 85°C, 3.2V @125°C)				
0.47	P	CGT.47 / 16PM7500	0.5	7500

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

2V DC @ 40°C (1V DC @ 85°C, 0.4V @125°C)				
Capacitance (µF)	Case Size	Nemco Part No.	DCL (µA) max	ESR @ 100kHz max. (mΩ)
3.3	R	CGT3.3 / 2RM7500	0.5	7500
4.7	R	CGT4.7 / 2RM7500	0.5	7500
6.8	R	CGT6.8 / 2RM7500	0.5	7500
10.0	R	CGT10 / 2RM7500	0.5	7500
47.0	R	CGT47 / 2RM7500	0.9	7500
3V DC @ 40°C (1.5V DC @ 85°C, 0.6V @125°C)				
2.2	R	CGT2.2 / 3RM7500	0.5	7500
3.3	R	CGT3.3 / 3RM7500	0.5	7500
4.7	R	CGT4.7 / 3RM7500	0.5	7500
6.8	R	CGT6.8 / 3RM7500	0.5	7500
10.0	R	CGT10 / 3RM7500	0.5	7500
22.0	R	CGT22 / 3RM7500	0.7	7500
47.0	R	CGT47 / 3RM7500	1.4	7500
4V DC @ 40°C (2V DC @ 85°C, 0.8V @125°C)				
1.5	R	CGT1.5 / 4RM7500	0.5	7500
2.2	R	CGT2.2 / 4RM7500	0.5	7500
3.3	R	CGT3.3 / 4RM7500	0.5	7500
4.7	R	CGT4.7 / 4RM7500	0.5	7500
6.8	R	CGT6.8 / 4RM7500	0.5	7500
10.0	R	CGT10 / 4RM7500	0.5	7500
15.0	R	CGT15 / 4RM7500	0.6	7500
22.0	R	CGT22 / 4RM7500	0.9	7500
33.0	R	CGT33 / 4RM7500	1.3	7500
47.0	R	CGT33 / 4RM7500	1.9	7500
6.3V DC @ 40°C (3.2V DC @ 85°C, 1.3V @125°C)				
1.0	R	CGT1 / 6RM7500	0.5	7500
1.5	R	CGT1.5 / 6RM7500	0.5	7500
2.2	R	CGT2.2 / 6RM7500	0.5	7500
3.3	R	CGT3.3 / 6RM7500	0.5	7500
4.7	R	CGT4.7 / 6RM7500	0.5	7500
6.8	R	CGT6.8 / 6RM7500	0.5	7500
10.0	R	CGT10 / 6RM7500	0.6	7500
15.0	R	CGT15 / 6RM7500	0.9	7500
22.0	R	CGT22 / 6RM7500	1.4	7500
33.0	R	CGT15 / 6RM7500	2.1	7500
10V DC @ 40°C (5V DC @ 85°C, 2V @125°C)				
0.47	R	CGT.47 / 10RM7500	0.5	7500
0.68	R	CGT.68 / 10RM7500	0.5	7500
1.0	R	CGT1 / 10RM7500	0.5	7500
1.5	R	CGT1.5 / 10RM7500	0.5	7500
2.2	R	CGT2.2 / 10RM7500	0.5	7500
3.3	R	CGT3.3 / 10RM7500	0.5	7500
4.7	R	CGT4.7 / 10RM7500	0.5	7500
6.8	R	CGT6.8 / 10RM7500	0.7	7500
10.0	R	CGT10 / 10RM7500	1.0	7500
15.0	R	CGT15 / 10RM7500	1.5	7500
16V DC @ 40°C (8V DC @ 85°C, 3.2V @125°C)				
0.47	R	CGT.47 / 16RM7500	0.5	7500
0.68	R	CGT.68 / 16RM7500	0.5	7500
1.0	R	CGT1 / 16RM7500	0.5	7500
2.2	R	CGT2.2 / 16RM5000	0.5	7500
3.3	R	CGT3.3 / 16RM7500	0.5	7500
20V DC @ 40°C (10V DC @ 85°C, 4V @125°C)				
2.2	R	CGT2.2 / 20RM7500	0.5	7500
25V DC @ 40°C (12.5V DC @ 85°C, 5V @125°C)				
1.0	R	CGT1 / 25RM7500	0.5	7500

_ 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.

PACKAGING REFERENCE

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