



### FEATURES:

- Low profile
- Excellent frequency characteristics and impedance
- Voltage range: 2.5V to 35V
- Capacitance range: 1uF to 220uF

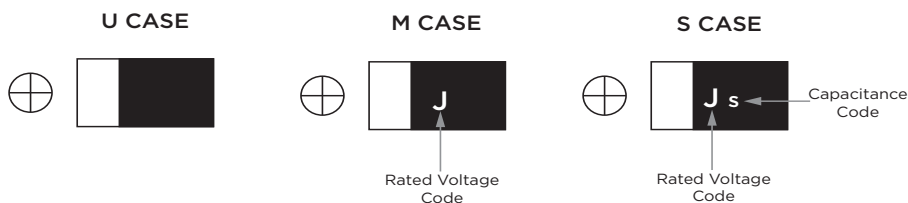


### PART NUMBER STRUCTURE

TA	6R3	MSU	106	M	M	R
Tantalum Capacitor	Rated Voltage 2R5 = 2.5V 4R0 = 4.0V 6R3 = 6.3V 010 = 10V 016 = 16V 020 = 20V 025 = 25V 035 = 35V	Series MSU	Capacitance (pico - Farads) 1st two digits are significant. Third is the number of zeros to follow. 105 = 1.0µF 226 = 22µF 107 = 100µF	Tolerance M = ±20%	Case Code U M S	Packaging R = Tape and Reel

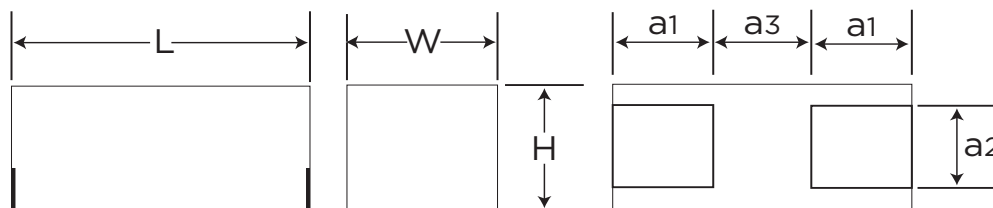
Example P/N: TA6R3MSU106MMR

### MARKING CODE



VOLTAGE CODE	RATED VOLTAGE
e	2.5V
G	4V
J	6.3V
A	10V
C	16V
D	20V
E	25V
V	35V

### DIMENSIONS



Unit: mm (inch)

CASE CODE	SIZE	L	W	H	a1	a2	a3
U	0402	1.1 ± 0.05 (0.043 ± 0.002)	0.60 ± 0.05 (0.024 ± 0.002)	0.55 ± 0.05 (0.022 ± 0.002)	0.30 ± 0.05 (0.012 ± 0.002)	0.35 ± 0.05 (0.014 ± 0.002)	0.50 ± 0.05 (0.020 ± 0.002)
M	0603	1.6 ± 0.2 (0.063 ± 0.008)	0.85 ± 0.2 (0.033 ± 0.008)	0.80 ± 0.1 (0.031 ± 0.004)	0.5 ± 0.1 (0.020 ± 0.004)	0.65 ± 0.1 (0.026 ± 0.004)	0.60 ± 0.10 (0.024 ± 0.004)
S	0805	2.0 ± 0.2 (0.079 ± 0.008)	1.25 ± 0.2 (0.049 ± 0.008)	0.80 ± 0.1 (0.031 ± 0.004)	0.5 ± 0.1 (0.020 ± 0.004)	0.90 ± 0.1 (0.035 ± 0.004)	1.00 ± 0.1 (0.039 ± 0.004)

### VOLTAGE RATINGS & CASE CODES

RATED VOLTAGE	2.5V	4V	6.3V	10V	16V	20V	25V	35V	CAPACITANCE CODE
CAPACITANCE (UF)									
1.0					M	M	M	S	
2.2				U/M	M				
4.7		U	U/M	U/M	M				
10		U	U/M	M	S				a
22		U/M	M	M/S					j
33		M	M	M/S					n
47	M	M	M/S	S					s
68		M/S							w
100		M/S	M/S						A
220		S							j

### ELECTRICAL SPECIFICATIONS & PART NUMBERS

RATED VOLTAGE (V)	CAPACITANCE (uF)	CASE CODE	SIZE	MAX. DCL @ +25°C (uA)	MAX. DF @ +25°C 120 Hz (%)	MAX. ESR 100 kHz (Ω)	TOLERANCE (%)	CAPACITANCE CHANGE (%)	VENKEL PART NUMBER
2.5	47	M	0603	1.2	30	4	±20%	±30	TA2R5MSU476MMR
4	4.7	U	0402	0.5	20	20	±20%	±30	TA4R0MSU475MUR
4	10	U	0402	0.8	25	20	±20%	±30	TA4R0MSU106MUR
4	22	U	0402	25	40	20	±20%	±30	TA4R0MSU226MUR
4	22	M	0603	0.9	15	7.5	±20%	±30	TA4R0MSU226MMR
4	33	M	0603	1.3	30	4	±20%	±30	TA4R0MSU336MMR
4	47	M	0603	1.9	40	8	±20%	±30	TA4R0MSU476MMR
4	68	M	0603	27.2	50	10	±20%	±30	TA4R0MSU686MMR
4	68	S	0805	2.7	30	4	±20%	±30	TA4R0MSU686MSR
4	100	S	0805	80	60	4	±20%	±30	TA4R0MSU107MSR
4	100	M	0603	4	35	10	±20%	±30	TA4R0MSU107MMR
4	220	S	0805	132	80	5	±20%	±30	TA4R0MSU227MSR
6.3	4.7	M	0603	0.5	20	7.5	±20%	±30	TA6R3MSU475MMR
6.3	4.7	U	0402	0.6	20	20	±20%	±30	TA6R3MSU475MUR
6.3	10	M	0603	0.6	8	6	±20%	±30	TA6R3MSU106MMR
6.3	10	U	0402	6.3	30	30	±20%	±30	TA6R3MSU106MUR
6.3	22	M	0603	1.4	20	6	±20%	±30	TA6R3MSU226MMR
6.3	33	M	0603	4.2	35	8	±20%	±30	TA6R3MSU336MMR
6.3	47	M	0603	29.6	45	10	±20%	±30	TA6R3MSU476MMR
6.3	47	S	0805	3	25	6	±20%	±30	TA6R3MSU476MSR
6.3	100	M	0603	126	80	10	±20%	±30	TA6R3MSU107MMR
6.3	100	S	0805	63	50	8	±20%	±30	TA6R3MSU107MSR
10	2.2	M	0603	0.5	6	7.5	±20%	±30	TA010MSU225MMR
10	2.2	U	0402	0.5	15	15	±20%	±30	TA010MSU225MUR
10	4.7	M	0603	0.5	6	6	±20%	±30	TA010MSU475MMR
10	4.7	U	0402	4.7	25	25	±20%	±30	TA010MSU475MUR
10	10	M	0603	1	20	7.5	±20%	±30	TA010MSU106MMR
10	22	M	0603	11	30	8	±20%	±30	TA010MSU226MMR
10	22	S	0805	2.2	20	4	±20%	±30	TA010MSU226MSR
10	33	M	0603	33	45	8	±20%	±30	TA010MSU336MMR
10	33	S	0805	3.3	30	6	±20%	±30	TA010MSU336MSR
10	47	S	0805	9.4	35	5	±20%	±30	TA010MSU476MSR

Leakage Current: After 5 minute's application of rated voltage, leakage current at 20°C.

### ELECTRICAL SPECIFICATIONS & PART NUMBERS

RATED VOLTAGE (V)	CAPACITANCE (uF)	CASE CODE	SIZE	MAX. DCL @ +25°C (uA)	MAX. DF @ +25°C 120 Hz (%)	MAX. ESR 100 kHz (Ω)	TOLERANCE (%)	CAPACITANCE CHANGE (%)	VENKEL PART NUMBER
16	1	M	0603	0.5	6	10	±20%	±30	TA016MSU105MMR
16	2.2	M	0603	0.5	6	10	±20%	±30	TA016MSU225MMR
16	4.7	M	0603	0.8	12	12	±20%	±30	TA016MSU475MMR
16	10	S	0805	1.6	18	4	±20%	±30	TA016MSU106MSR
20	1	M	0603	0.5	6	10	±20%	±30	TA020MSU105MMR
25	1	M	0603	0.5	8	10	±20%	±30	TA025MSU105MMR
35	1	S	0805	0.7	20	8	±20%	±30	TA035MSU105MSR

**Leakage Current:** After 5 minute's application of rated voltage, leakage current at 20°C.

### ENVIRONMENT TEST CRITERIA

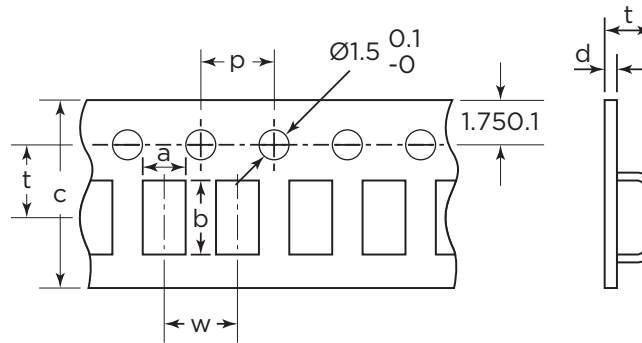
OPERATING TEMPERATURE RANGE	-55°C TO +125°C
TEST	CONDITION
Damp Heat (Steady State)	At 40°C, 90 to 95% R.H., 500 hours (No voltage applied) <b>Capacitance Change:</b> Refer to page 2 & 3 (*) <b>Dissipation Factor:</b> 150% or less of initial specified value <b>Leakage Current:</b> 200% or less of initial specified value
Temperature Cycles	-55°C / +125°C, 30 minutes each, 5 cycles <b>Capacitance Change:</b> Refer to page 2 & 3 (*) <b>Dissipation Factor:</b> 150% or less of initial specified value <b>Leakage Current:</b> 200% or less of initial specified value
Resistance to Soldering Heat	10 seconds reflow at 260°C, 5 seconds immersion at 260°C. <b>Capacitance Change:</b> Refer to page 2 & 3 (*) <b>Dissipation Factor:</b> Initial specified value or less <b>Leakage Current:</b> Initial specified value or less
Surge	After application of surge in series with a 1kΩ resistor at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 85°C, capacitors shall meet the characteristic requirements in the table above. <b>Capacitance Change:</b> Refer to page 2 & 3 (*) <b>Dissipation Factor:</b> 150% or less of initial specified value <b>Leakage Current:</b> 200% or less of initial specified value
Endurance	After 1000 hours' application of rated voltage in series with a 3Ω resistor at 85°C, capacitors shall meet the characteristic requirements in the table above. <b>Capacitance Change:</b> Refer to page 2 & 3 (*) <b>Dissipation Factor:</b> 150% or less of initial specified value <b>Leakage Current:</b> 200% or less of initial specified value
Shear Test	After applying the pressure load of 5N for 10±1 seconds horizontally to the center of capacitor side body which has no electrode and has been soldered beforehand on a substrate, there shall be found neither exfoliation nor its sign at the terminal electrode.
Terminal Strength	Keeping a capacitor surface-mounted on a substrate upside down and supporting the substrate at both of the opposite bottom points 45mm apart from the center of capacitor, the pressure strength is applied with a specified jig at the center of substrate so that the substrate may bend by 1mm as illustrated. Then, there shall be found no remarkable abnormality on the capacitor terminals.

### TECHNICAL SPECIFICATIONS

Operating Temperature Range:	-55°C to +125°C
Rated Temperature:	+85°C
Capacitance Tolerance:	±20% @ 120Hz
Dissipation Factor:	Refer to part number data
ESR 100kHz:	Refer to part number data
Leakage Current:	Refer to part number data Provided that: After 5 minutes application of rated voltage, leakage current at 85°C 10 times or less than 20°C specified value. After 5 minute application of rated voltage, leakage current at 125°C 12.5 times or less than 20°C specified value.
Moisture Sensitivity Level (MSL)	3

## TAPE & REEL SPECIFICATIONS

### CARRIER TAPE

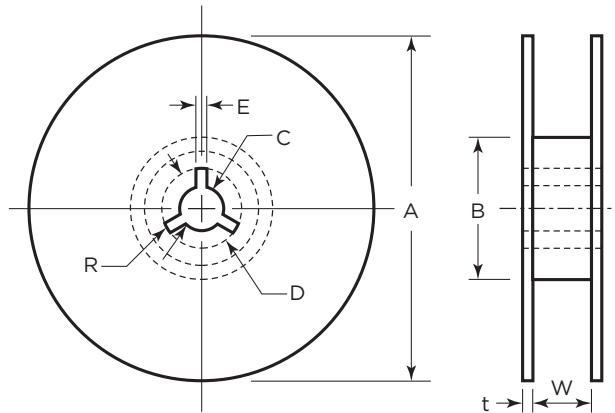


### TAPE DIMENSIONS

Unit: mm

CASE SIZE	a	b	c	t	p	w	d
U	0.73±0.08	1.20±0.05	8.0±0.3	0.7 MAX	4.0±0.1	2.0±0.1	-
M	0.97±0.05	1.85±0.05	8.0±0.3	1.3 MAX	4.0±0.1	4.0±0.1	0.2±0.05
S	1.35±0.1	2.15±0.1	8.0±0.3	1.4 MAX	4.0±0.1	4.0±0.1	0.2 ±0.1

### REEL



### REEL DIMENSIONS

Unit: mm

CASE SIZE	A	B	C	D	E	W	T	R
U, M, S	180 +0 -3	50 MIN	13.0±0.2	21.0±0.8	2.0±0.5	9.0±0.3	1.2±0.5	1.0

### QUANTITY PER REEL

CASE SIZE	REEL SIZE
	7"
U	10,000 pcs
M	4,000 pcs
S	4,000 pcs