



SOLID-ELECTROLYTE TANTALUM CAPACITORS

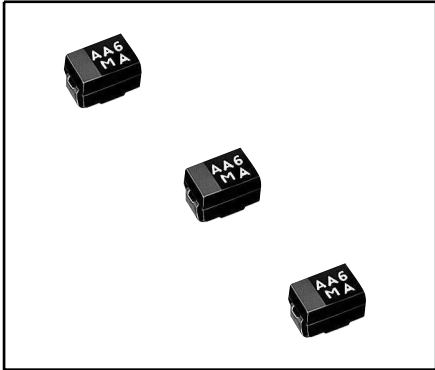
(TANCHIP® SERIES)

TYPE 278M

Epoxy resin molding chip
Ultra miniature

CAUTIONS

- This capacitor is polarized, do not apply reverse voltage.
- The sum of peak value of AC and DC voltage should not exceed the rated voltage.
- This catalog is designed for providing general information. Please inquire of our Sales Department to confirm specifications prior to use.



Type 278 is ultra miniature chip tantalum capacitor with case size 2012 (2.0X1.25X1.2mm) and responds to market needs of miniaturization from electronics equipments.

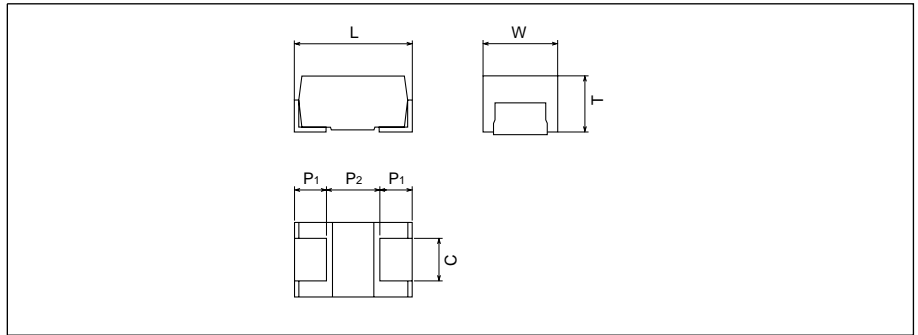
Type 278 is satisfied with same requirement for surface mounting and high soldering heat resistance as Type 267.

CHARACTERISTICS

ITEM	CHARACTERISTICS
Failure rate level	1%/1000h
Operating temperature range	-55~+85°C to +125°C with voltage derating
Rated voltage	2.5-4-6.3-10-16-20VDC
Capacitance range	0.1~22μF
Capacitance tolerance	±10%, ±20%

DIMENSIONS

mm

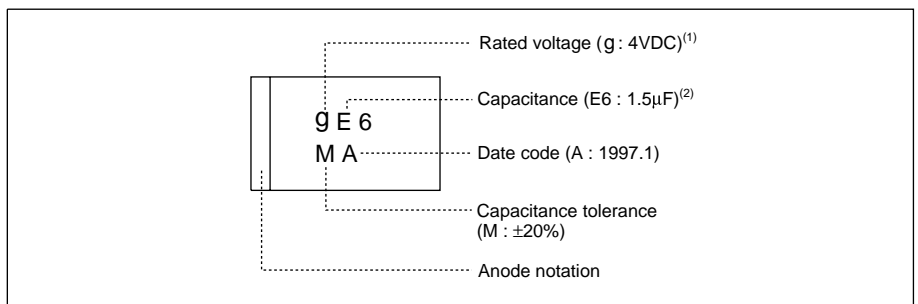


FEATURES

1. Wide range is covered.
2. Suitable for surface mounting.
3. Precise dimensions allow high density packaging. Symmetrical construction of positive and negative terminals provides "Self Alignment".
4. Soldering: 260°C for 10 second by re-flow or flow soldering.
5. 278 is ultra miniaturized surface mount tantalum capacitor -with 2.00mm(length) X 1.25mm(width) X 1.2mm max.(thickness)-to meet in some ultra miniaturized applications such as handy phone, mobile phone, pager, PCMCIA card, in-the-canal hearing aids, etc.

Case code	EIA code	L±0.2	W±0.2	T max.	P1±0.2	P2 min.	C±0.1
S	2012	2.0	1.25	1.2	0.5	0.8	0.9

MARKING



(1) Rated voltage code

Rated voltage	2.5	4	6.3	10	16	20
code	e	g	j	A	C	D

(2) Capacitance code

Capacitance	0.1	0.47	0.68	1.0	1.5	2.2	3.3	4.7
code	A5	S5	W5	A6	E6	J6	N6	S6

NOTIFICATIONS FOR USE

Please inquire of our Sales Department for your suitable soldering or cleaning conditions.





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(TANCHIP® SERIES)

TYPE **278M**
Epoxy resin molding chip
Ultra miniature

STANDARD RATINGS

Cap.	R.V.	2.5	4	6.3	10	16	20
0.1							S
0.15							S
0.22							S
0.33							S
0.47						S	S
0.68					S	S	S
1.0				S	S	S	
1.5			S	S	S		
2.2	S		S	S	S		
3.3	S		S	S	S		
4.7	S		S	S	S		
6.8	S		S	S			
10	S		S	S			
15	S		S				
22	S						

RATINGS AND CATALOG NUMBERS

	Catalog number	cap. (μF)	case code	Max DC Lct. (μA)			Max Dissipation factor			
				20°C	85°C	125°C	-55°C	20°C	85°C	125°C
Rated voltage 2.5VDC/Surge voltage 3.3VDC	278M 2501 225 □ ¹ □ ²	2.2	S	0.5	5	6.3	0.08	0.06	0.06	0.06
	278M 2501 335 □ ¹ □ ²	3.3	S	0.5	5	6.3	0.08	0.06	0.06	0.06
	278M 2501 475 □ ¹ □ ²	4.7	S	0.5	5	6.3	0.12	0.08	0.08	0.10
	278M 2501 106 □ ¹ □ ²	10	S	0.5	5	6.3	0.12	0.08	0.08	0.10
	278M 2501 156 □ ¹ □ ²	15	S	0.5	5	6.3	0.20	0.10	0.10	0.12
	278M 2501 226 □ ¹ □ ²	22	S	0.6	6	6.9	0.20	0.10	0.10	0.12
Rated voltage 4VDC/Surge voltage 5VDC	278M 4001 155 □ ¹ □ ²	1.5	S	0.5	5	6.3	0.08	0.06	0.06	0.06
	278M 4001 225 □ ¹ □ ²	2.2	S	0.5	5	6.3	0.08	0.06	0.06	0.06
	278M 4001 335 □ ¹ □ ²	3.3	S	0.5	5	6.3	0.12	0.08	0.08	0.10
	278M 4001 685 □ ¹ □ ²	6.8	S	0.5	5	6.3	0.12	0.08	0.08	0.10
	278M 4001 106 □ ¹ □ ²	10	S	0.5	5	6.3	0.15	0.08	0.08	0.10
	278M 4001 156 □ ¹ □ ²	15	S	0.6	6	7.5	0.20	0.10	0.10	0.12
Rated voltage 6.3VDC/Surge voltage 8VDC	278M 6301 105 □ ¹ □ ²	1.0	S	0.5	5	6.3	0.05	0.04	0.04	0.05
	278M 6301 155 □ ¹ □ ²	1.5	S	0.5	5	6.3	0.08	0.06	0.06	0.06
	278M 6301 225 □ ¹ □ ²	2.2	S	0.5	5	6.3	0.12	0.08	0.08	0.10
	278M 6301 475 □ ¹ □ ²	4.7	S	0.5	5	6.3	0.12	0.08	0.08	0.10
	278M 6301 685 □ ¹ □ ²	6.8	S	0.5	5	6.3	0.15	0.08	0.08	0.10
Rated voltage 10VDC/Surge voltage 13VDC	278M 1002 684 □ ¹ □ ²	0.68	S	0.5	5	6.3	0.05	0.04	0.04	0.05
	278M 1002 105 □ ¹ □ ²	1.0	S	0.5	5	6.3	0.05	0.04	0.04	0.05
	278M 1002 155 □ ¹ □ ²	1.5	S	0.5	5	6.3	0.12	0.08	0.08	0.10
	278M 1002 225 □ ¹ □ ²	2.2	S	0.5	5	6.3	0.12	0.08	0.08	0.10
	278M 1002 335 □ ¹ □ ²	3.3	S	0.5	5	6.3	0.15	0.08	0.08	0.10
	278M 1002 475 □ ¹ □ ²	4.7	S	0.5	5	6.3	0.15	0.08	0.08	0.10
Rated voltage 16VDC/Surge voltage 20VDC	278M 1602 474 □ ¹ □ ²	0.47	S	0.5	5	6.3	0.05	0.04	0.04	0.05
	278M 1602 684 □ ¹ □ ²	0.68	S	0.5	5	6.3	0.08	0.06	0.06	0.06
	278M 1602 105 □ ¹ □ ²	1.0	S	0.5	5	6.3	0.12	0.08	0.08	0.10
Rated voltage 20VDC/Surge voltage 26VDC	278M 2002 104 □ ¹ □ ²	0.1	S	0.5	5	6.3	0.08	0.04	0.04	0.05
	278M 2002 154 □ ¹ □ ²	0.15	S	0.5	5	6.3	0.08	0.04	0.04	0.05
	278M 2002 224 □ ¹ □ ²	0.22	S	0.5	5	6.3	0.08	0.04	0.04	0.05
	278M 2002 334 □ ¹ □ ²	0.33	S	0.5	5	6.3	0.08	0.04	0.04	0.05
	278M 2002 474 □ ¹ □ ²	0.47	S	0.5	5	6.3	0.08	0.06	0.06	0.06
	278M 2002 684 □ ¹ □ ²	0.68	S	0.5	5	6.3	0.12	0.08	0.08	0.10

□¹ capacitance tolerance code "K" (±10%) or "M" (±20%)

□² taping code "R" ("N") or "L" ("P")

Pull direction "R" ("N") is standard.

