

## CA45 Chip Tantalum Capacitors (SMD Tantalum Capacitors)

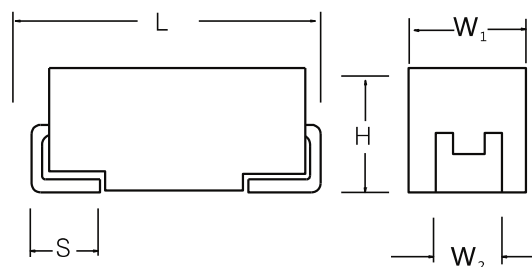
### ◆ Brief Introduction

General purpose SMT chip tantalum series  
 General low power DC/DC and LDO  
 Operating Standard: QJ/PWV109-2003  
 Military Part Qualified Factory  
 RoHS and REACH Compliance



### ◆ Specifications

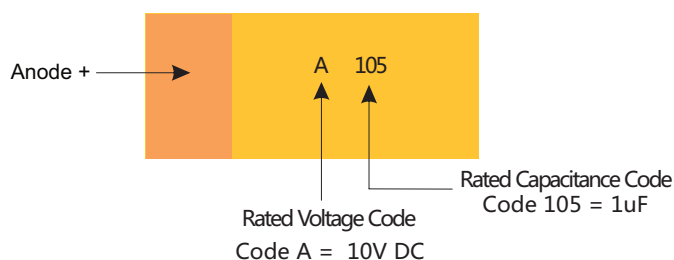
Operating Temperature Range:  $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$ ;  $>85^{\circ}\text{C}$ (with rated voltage derating);  
 DC Leakage at  $25^{\circ}\text{C}$ :  $I_{\text{L}} \leq 0.01C_{\text{R}} U_{\text{R}}$  or  $0.5\mu\text{A}$  (Choose the greater one)  
 Capacitance Range:  $0.68\mu\text{F} \sim 1000\mu\text{F}$   
 Voltage Range: 2.5V, 4V, 6.3V, 10V, 16V, 20V, 25V, 35V, 50V  
 Capacitance Tolerance: K:  $\pm 10\%$ ; M:  $\pm 20\%$  ( $\pm 20\%$  tolerance is standard)  
 SPQ: A,B case: 2000pcs/reel; C,D case: 500pcs/reel; E case: 400pcs/reel  
 How to order, please refer to Part Number System



◆ Table 1 Dimensions (Unit: mm)

Case size	EIA Code	EIA Metric	L	W <sub>1</sub>	H	S	W <sub>2</sub>
A	1206	3216-16	$3.20 \pm 0.20$	$1.60 \pm 0.20$	$1.60 \pm 0.20$	$0.80 \pm 0.20$	$1.20 \pm 0.20$
B	1210	3528-19	$3.50 \pm 0.20$	$2.80 \pm 0.20$	$1.90 \pm 0.20$	$0.80 \pm 0.20$	$2.20 \pm 0.20$
C	2312	6032-25	$6.00 \pm 0.20$	$3.20 \pm 0.20$	$2.50 \pm 0.20$	$1.30 \pm 0.20$	$2.20 \pm 0.20$
D	2917	7343-28	$7.30 \pm 0.20$	$4.30 \pm 0.20$	$2.80 \pm 0.20$	$1.30 \pm 0.20$	$2.40 \pm 0.20$
E	2917	7343-43	$7.30 \pm 0.40$	$4.30 \pm 0.40$	$4.10 \pm 0.40$	$1.30 \pm 0.20$	$2.40 \pm 0.20$
V	2924	7361-36	$7.30 \pm 0.40$	$6.10 \pm 0.40$	$3.60 \pm 0.40$	$1.35 \pm 0.20$	$3.00 \pm 0.20$

### ◆ Marking on Chip Tantalum Capacitor Body



Voltage Code Table for Chip Tantalum Capacitors

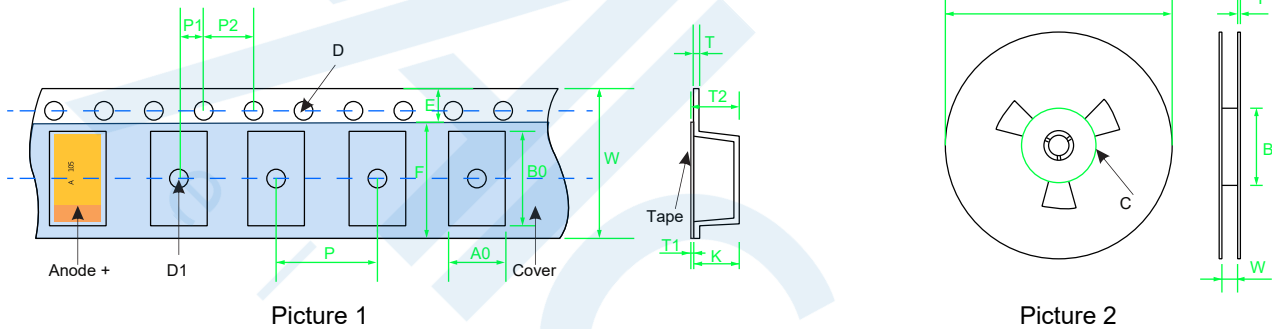
Voltage Code	G	J	A	C	D	E	V	H	T
Rated Voltage	4V	6.3V	10V	16V	20V	25V	35V	40V	50V

## CA45 Chip Tantalum Capacitors (SMD Tantalum Capacitors)

◆Table 2 Temperature Characteristics

Max					
tgδ(%)				DCL μA	
-55°C	25°C	85°C	125°C	85°C	125°C
6	4	6		8 I <sub>o</sub>	10 I <sub>o</sub>
8	6	8			
10	8	10			
12	10	12			
14	12	14			
18	16	18			

◆Table 3 Packaging information



Dimensions of tape (picture 1)

CASE	A <sub>0</sub> ±0.10	B <sub>0</sub> ±0.10	K±0.10	W±0.30	E±0.10	F±0.05	P±0.10	P <sub>1</sub> ±0.05	P <sub>2</sub> ±0.10	D+0.20	D <sub>1</sub> +0.25
A	1.88	3.53	1.95	8.0±0.10	1.75	3.5	4	2	4	1.5±0.10	1.0±0.10
B	3.20	3.80	1.90	8	1.75	3.5	4	2	4	1.5	1
C	3.45	6.4	2.92	12	1.75	5.5	8	2	4	1.5	1.5
D	4.48	7.62	3.22	12	1.75	5.5	8	2	4	1.5	1.5
E	4.5	7.5	4.5	12	1.75	5.5	8	2	4	1.5	1.5
V	6.4	7.6	4.4	12	1.75	5.5	8	2	4	1.5	1.5

The tolerance is +/-0.2mm when the holes are more than 10PCS

Dimensions of reel (picture 2)

Size of reel	Width of tape	A	B	C	W	T
180mm (7")	8mm	178±2.00	50 min	13.0±0.50	8.4+1.5/-0	1.50±0.50
180mm (7")	12mm	178±2.00	50 min	13.0±0.50	12.4+1.5/-0	1.50±0.50
180mm (7")	16mm	178±2.00	50 min	13.0±0.50	16.4+1.5/-1	1.50±0.50

Packaging quantity

CASE	A	B	C	D	E	V
Quantity (PCS/reel)	2000	2000	500	500	400	400

### ◆ How to order

CA45	C	106	M	035	R	-
Type	Case Size	Capacitance code	Tolerance	Rated DC Voltage	Package	Additional characters may be added for special requirements
CA45	See size table	pF Code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow) 106 = 10uF 107 = 100uF	K: +/-10% M: +/-20%	Code 035: 35VDC 006 = 6.3VDC 010 = 10VDC 025 = 25VDC 035 = 35VDC 050 = 50VDC	R: Tape & Reel	

## CA45 Chip Tantalum Capacitors (SMD Tantalum Capacitors)

◆Table 4 Electrical Characteristics

Part Number	Case Code	Nominal Capacitance	Rated Voltage	Rated Temperature	Category Voltage	Category Temperature	Max DCL at +25°C	Max DF at +25°C 100Hz	Max ESR +25°CΩ	Ripple Current (A) 100KHz Max		
										+25°C	+85°C	+125°C
		μF	V	°C	V	°C	μA	%	Ω			
CA45A336#002R	A	33	2.5	85	1.7	125	0.8	8	1.7	0.196	0.117	0.078
CA45A476#002R	A	47	2.5	85	1.7	125	1.2	6	3	0.147	0.088	0.059
CA45A686#002R	A	68	2.5	85	1.7	125	1.7	8	1.5	0.208	0.125	0.083
CA45A107#002R	A	100	2.5	85	1.7	125	2.5	30	1.4	0.215	0.129	0.086
CA45B107#002R	B	100	2.5	85	1.7	125	2.5	8	1.4	0.231	0.139	0.093
CA45B157#002R	B	150	2.5	85	1.7	125	3.8	10	1.6	0.217	0.130	0.087
CA45B227#002R	B	220	2.5	85	1.7	125	5.5	16	1.6	0.217	0.130	0.087
CA45D227#002R	D	220	2.5	85	1.7	125	5.5	8	0.3	0.592	0.355	0.237
CA45D337#002R	D	330	2.5	85	1.7	125	8.3	8	0.3	0.592	0.355	0.237
CA45C477#002R	C	470	2.5	85	1.7	125	11.8	12	0.2	0.671	0.402	0.268
CA45D477#002R	D	470	2.5	85	1.7	125	11.8	8	0.2	0.725	0.435	0.290
CA45C687#002R	C	680	2.5	85	1.7	125	17.0	18	0.2	0.671	0.402	0.268
CA45D687#002R	D	680	2.5	85	1.7	125	17.0	16	0.2	0.725	0.435	0.290
CA45E687#002R	E	680	2.5	85	1.7	125	17.0	10	0.2	0.791	0.474	0.316
CA45D108#002R	D	1000	2.5	85	1.7	125	25.0	20	0.2	0.725	0.435	0.290
CA45E108#002R	E	1000	2.5	85	1.7	125	25.0	14	0.4	0.559	0.335	0.224
CA45A225#004R	A	2.2	4	85	2.7	125	0.5	6	8	0.090	0.054	0.036
CA45A335#004R	A	3.3	4	85	2.7	125	0.5	6	8	0.090	0.054	0.036
CA45A475#004R	A	4.7	4	85	2.7	125	0.5	6	8	0.090	0.054	0.036
CA45B475#004R	B	4.7	4	85	2.7	125	0.5	6	6	0.112	0.067	0.045
CA45A685#004R	A	6.8	4	85	2.7	125	0.5	6	6	0.104	0.062	0.042
CA45B685#004R	B	6.8	4	85	2.7	125	0.5	6	5.5	0.117	0.070	0.047
CA45A106#004R	A	10	4	85	2.7	125	0.5	6	6	0.104	0.062	0.042
CA45B106#004R	B	10	4	85	2.7	125	0.5	6	3.5	0.146	0.088	0.059
CA45A156#004R	A	15	4	85	2.7	125	0.6	6	4	0.127	0.076	0.051
CA45B156#004R	B	15	4	85	2.7	125	0.6	6	3.5	0.146	0.088	0.059
CA45C156#004R	C	15	4	85	2.7	125	0.6	6	3.5	0.160	0.096	0.064
CA45A226#004R	A	22	4	85	2.7	125	0.9	6	2.5	0.161	0.097	0.064
CA45B226#004R	B	22	4	85	2.7	125	0.9	6	3.2	0.153	0.092	0.061
CA45C226#004R	C	22	4	85	2.7	125	0.9	6	1.8	0.224	0.134	0.089
CA45A336#004R	A	33	4	85	2.7	125	1.3	8	3	0.147	0.088	0.059
CA45B336#004R	B	33	4	85	2.7	125	1.3	6	3.2	0.153	0.092	0.061
CA45C336#004R	C	33	4	85	2.7	125	1.3	6	1.8	0.224	0.134	0.089
CA45A476#004R	A	47	4	85	2.7	125	1.9	12	2.5	0.161	0.097	0.064
CA45B476#004R	B	47	4	85	2.7	125	1.9	6	2.6	0.170	0.102	0.068
CA45C476#004R	C	47	4	85	2.7	125	1.9	6	1.8	0.224	0.134	0.089
CA45A686#004R	A	68	4	85	2.7	125	2.7	24	2.5	0.161	0.097	0.064
CA45B686#004R	B	68	4	85	2.7	125	2.7	6	1.8	0.204	0.122	0.082
CA45C686#004R	C	68	4	85	2.7	125	2.7	6	1.5	0.245	0.147	0.098
CA45A107#004R	A	100	4	85	2.7	125	4.0	30	2	0.180	0.108	0.072
CA45B107#004R	B	100	4	85	2.7	125	4.0	14	0.9	0.289	0.173	0.115
CA45C107#004R	C	100	4	85	2.7	125	4.0	8	1.2	0.274	0.164	0.110
CA45B157#004R	B	150	4	85	2.7	125	6.0	18	1.5	0.224	0.134	0.089
CA45C157#004R	C	150	4	85	2.7	125	6.0	8	1.1	0.286	0.172	0.114
CA45D157#004R	D	150	4	85	2.7	125	6.0	8	0.8	0.362	0.217	0.145
CA45B227#004R	B	220	4	85	2.7	125	8.8	18	1.1	0.261	0.157	0.104
CA45C227#004R	C	220	4	85	2.7	125	8.8	12	1.2	0.274	0.164	0.110
CA45D227#004R	D	220	4	85	2.7	125	8.8	8	0.8	0.362	0.217	0.145
CA45C337#004R	C	330	4	85	2.7	125	13.2	10	0.7	0.359	0.215	0.143
CA45D337#004R	D	330	4	85	2.7	125	13.2	8	0.9	0.342	0.205	0.137
CA45E337#004R	E	330	4	85	2.7	125	13.2	12	0.8	0.395	0.237	0.158
CA45C477#004R	C	470	4	85	2.7	125	18.8	14	0.3	0.548	0.329	0.219
CA45D477#004R	D	470	4	85	2.7	125	18.8	10	0.9	0.342	0.205	0.137
CA45E477#004R	E	470	4	85	2.7	125	18.8	10	0.5	0.500	0.300	0.200
CA45D687#004R	D	680	4	85	2.7	125	27.2	12	0.5	0.458	0.275	0.183
CA45E687#004R	E	680	4	85	2.7	125	27.2	14	0.9	0.373	0.224	0.149
CA45D108#004R	D	1000	4	85	2.7	125	40.0	60	0.5	0.458	0.275	0.183
CA45E108#004R	E	1000	4	85	2.7	125	40.0	15	0.4	0.559	0.335	0.224
CA45V108#004R	V	1000	4	85	2.7	125	40.0	12	0.2	0.866	0.520	0.346
CA45A155#006R	A	1.5	6.3	85	4	125	0.5	6	8	0.090	0.054	0.036

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◆Table 4 Electrical Characteristics

Part Number	Case Code	Nominal Capacitance	Rated Voltage	Rated Temperature	Category Voltage	Category Temperature	Max DCL at +25°C	Max DF at +25°C 100Hz	Max ESR +25°CΩ	Ripple Current (A) 100KHz Max		
										+25°C	+85°C	+125°C
		μF	V	°C	V	°C	μA	%	Ω			
CA45A225#006R	A	2.2	6.3	85	4	125	0.5	6	8	0.090	0.054	0.036
CA45A335#006R	A	3.3	6.3	85	4	125	0.5	6	8	0.090	0.054	0.036
CA45B335#006R	B	3.3	6.3	85	4	125	0.5	6	7	0.104	0.062	0.041
CA45A475#006R	A	4.7	6.3	85	4	125	0.5	6	6	0.104	0.062	0.042
CA45B475#006R	B	4.7	6.3	85	4	125	0.5	6	5.5	0.117	0.070	0.047
CA45A685#006R	A	6.8	6.3	85	4	125	0.5	6	6	0.104	0.062	0.042
CA45B685#006R	B	6.8	6.3	85	4	125	0.5	6	3.5	0.146	0.088	0.059
CA45A106#006R	A	10	6.3	85	4	125	0.6	6	4	0.127	0.076	0.051
CA45B106#006R	B	10	6.3	85	4	125	0.6	6	3.5	0.146	0.088	0.059
CA45C106#006R	C	10	6.3	85	4	125	0.6	6	3	0.173	0.104	0.069
CA45A156#006R	A	15	6.3	85	4	125	0.9	6	3.5	0.136	0.082	0.055
CA45B156#006R	B	15	6.3	85	4	125	0.9	6	3	0.158	0.095	0.063
CA45C156#006R	C	15	6.3	85	4	125	0.9	6	1.8	0.224	0.134	0.089
CA45A226#006R	A	22	6.3	85	4	125	1.4	6	3	0.147	0.088	0.059
CA45B226#006R	B	22	6.3	85	4	125	1.4	6	3.5	0.146	0.088	0.059
CA45C226#006R	C	22	6.3	85	4	125	1.4	6	1.8	0.224	0.134	0.089
CA45A336#006R	A	33	6.3	85	4	125	2.1	8	2.2	0.172	0.103	0.069
CA45B336#006R	B	33	6.3	85	4	125	2.1	6	3	0.158	0.095	0.063
CA45C336#006R	C	33	6.3	85	4	125	2.1	6	1.8	0.224	0.134	0.089
CA45A476#006R	A	47	6.3	85	4	125	3.0	12	2.5	0.161	0.097	0.064
CA45B476#006R	B	47	6.3	85	4	125	3.0	6	2	0.194	0.116	0.077
CA45C476#006R	C	47	6.3	85	4	125	3.0	6	1.6	0.237	0.142	0.095
CA45A686#006R	A	68	6.3	85	4	125	4.3	20	3.6	0.134	0.081	0.054
CA45B686#006R	B	68	6.3	85	4	125	4.3	8	0.9	0.289	0.173	0.115
CA45C686#006R	C	68	6.3	85	4	125	4.3	6	1.5	0.245	0.147	0.098
CA45A107#006R	A	100	6.3	85	4	125	6.3	35	2	0.180	0.108	0.072
CA45B107#006R	B	100	6.3	85	4	125	6.3	14	1.7	0.210	0.126	0.084
CA45C107#006R	C	100	6.3	85	4	125	6.3	8	0.9	0.316	0.190	0.126
CA45B157#006R	B	150	6.3	85	4	125	9.5	18	1.2	0.250	0.150	0.100
CA45C157#006R	C	150	6.3	85	4	125	9.5	8	1.1	0.286	0.172	0.114
CA45D157#006R	D	150	6.3	85	4	125	9.5	8	0.7	0.387	0.232	0.155
CA45B227#006R	B	220	6.3	85	4	125	13.9	30	1.2	0.250	0.150	0.100
CA45C227#006R	C	220	6.3	85	4	125	13.9	14	1.2	0.274	0.164	0.110
CA45D227#006R	D	220	6.3	85	4	125	13.9	8	0.5	0.458	0.275	0.183
CA45C337#006R	C	330	6.3	85	4	125	20.8	14	0.5	0.424	0.255	0.170
CA45D337#006R	D	330	6.3	85	4	125	20.8	8	0.1	0.512	0.307	0.205
CA45E337#006R	E	330	6.3	85	4	125	20.8	8	0.4	0.559	0.335	0.224
CA45D477#006R	D	470	6.3	85	4	125	29.6	16	0.4	0.512	0.307	0.205
CA45E477#006R	E	470	6.3	85	4	125	29.6	10	0.4	0.559	0.335	0.224
CA45V477#006R	V	470	6.3	85	4	125	29.6	10	0.4	0.612	0.367	0.245
CA45E687#006R	E	680	6.3	85	4	125	42.8	10	0.5	0.500	0.300	0.200
CA45V687#006R	V	680	6.3	85	4	125	42.8	10	0.5	0.548	0.329	0.219
CA45E108#006R	E	1000	6.3	85	4	125	63.0	20	0.2	0.791	0.474	0.316
CA45V108#006R	V	1000	6.3	85	4	125	63.0	15	0.2	0.866	0.520	0.346
CA45A105#010R	A	1	10	85	6.3	125	0.5	4	10	0.081	0.048	0.032
CA45B105#010R	B	1	10	85	6.3	125	0.5	4	6.5	0.107	0.064	0.043
CA45A155#010R	A	1.5	10	85	6.3	125	0.5	6	8	0.090	0.054	0.036
CA45A225#010R	A	2.2	10	85	6.3	125	0.5	6	8	0.090	0.054	0.036
CA45B225#010R	B	2.2	10	85	6.3	125	0.5	6	3.5	0.146	0.088	0.059
CA45A335#010R	A	3.3	10	85	6.3	125	0.5	6	5.5	0.109	0.065	0.043
CA45B335#010R	B	3.3	10	85	6.3	125	0.5	6	5	0.122	0.073	0.049
CA45A475#010R	A	4.7	10	85	6.3	125	0.5	6	5	0.114	0.068	0.046
CA45B475#010R	B	4.7	10	85	6.3	125	0.5	6	3.5	0.146	0.088	0.059
CA45A685#010R	A	6.8	10	85	6.3	125	0.7	6	3.5	0.136	0.082	0.055
CA45B685#010R	B	6.8	10	85	6.3	125	0.7	6	3.5	0.146	0.088	0.059
CA45C685#010R	C	6.8	10	85	6.3	125	0.7	6	3.5	0.160	0.096	0.064
CA45A106#010R	A	10	10	85	6.3	125	1.0	6	3	0.147	0.088	0.059
CA45B106#010R	B	10	10	85	6.3	125	1.0	6	3.5	0.146	0.088	0.059
CA45C106#010R	C	10	10	85	6.3	125	1.0	6	1.8	0.224	0.134	0.089
CA45A156#010R	A	15	10	85	6.3	125	1.5	6	3.2	0.143	0.086	0.057

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◆Table 4 Electrical Characteristics

Part Number	Case Code	Nominal Capacitance	Rated Voltage	Rated Temperature	Category Voltage	Category Temperature	Max DCL at +25°C	Max DF at +25°C 100Hz	Max ESR +25°CΩ	Ripple Current (A) 100KHz Max		
										+25°C	+85°C	+125°C
		μF	V	°C	V	°C	μA	%	Ω			
CA45B156#010R	B	15	10	85	6.3	125	1.5	6	2.8	0.164	0.098	0.065
CA45C156#010R	C	15	10	85	6.3	125	1.5	6	1.8	0.224	0.134	0.089
CA45A226#010R	A	22	10	85	6.3	125	2.2	10	3	0.147	0.088	0.059
CA45B226#010R	B	22	10	85	6.3	125	2.2	6	2.4	0.177	0.106	0.071
CA45C226#010R	C	22	10	85	6.3	125	2.2	6	1.8	0.224	0.134	0.089
CA45A336#010R	A	33	10	85	6.3	125	3.3	15	2.5	0.161	0.097	0.064
CA45B336#010R	B	33	10	85	6.3	125	3.3	6	1.8	0.204	0.122	0.082
CA45C336#010R	C	33	10	85	6.3	125	3.3	6	1.5	0.245	0.147	0.098
CA45A476#010R	A	47	10	85	6.3	125	4.7	40	2	0.180	0.108	0.072
CA45B476#010R	B	47	10	85	6.3	125	4.7	8	1	0.274	0.164	0.110
CA45C476#010R	C	47	10	85	6.3	125	4.7	6	1.2	0.274	0.164	0.110
CA45B686#010R	B	68	10	85	6.3	125	6.8	10	1.4	0.231	0.139	0.093
CA45C686#010R	C	68	10	85	6.3	125	6.8	6	1.3	0.263	0.158	0.105
CA45D686#010R	D	68	10	85	6.3	125	6.8	6	0.8	0.362	0.217	0.145
CA45B107#010R	B	100	10	85	6.3	125	10.0	24	1.4	0.231	0.139	0.093
CA45C107#010R	C	100	10	85	6.3	125	10.0	8	1.2	0.274	0.164	0.110
CA45D107#010R	D	100	10	85	6.3	125	10.0	8	0.9	0.342	0.205	0.137
CA45C157#010R	C	150	10	85	6.3	125	15.0	10	0.9	0.316	0.190	0.126
CA45D157#010R	D	150	10	85	6.3	125	15.0	8	0.9	0.342	0.205	0.137
CA45E157#010R	E	150	10	85	6.3	125	15.0	8	0.9	0.373	0.224	0.149
CA45C227#010R	C	220	10	85	6.3	125	22.0	16	0.5	0.424	0.255	0.170
CA45D227#010R	D	220	10	85	6.3	125	22.0	8	0.5	0.458	0.275	0.183
CA45E227#010R	E	220	10	85	6.3	125	22.0	8	0.5	0.500	0.300	0.200
CA45D337#010R	D	330	10	85	6.3	125	33.0	14	0.9	0.342	0.205	0.137
CA45E337#010R	E	330	10	85	6.3	125	33.0	8	0.9	0.373	0.224	0.149
CA45V337#010R	V	330	10	85	6.3	125	33.0	10	0.9	0.408	0.245	0.163
CA45E477#010R	E	470	10	85	6.3	125	47.0	10	0.5	0.500	0.300	0.200
CA45V477#010R	V	470	10	85	6.3	125	47.0	10	0.5	0.548	0.329	0.219
CA45E687#010R	E	680	10	85	6.3	125	68.0	14	0.5	0.500	0.300	0.200
CA45A105#016R	A	1	16	85	10	125	0.5	4	7.5	0.093	0.056	0.037
CA45B105#016R	B	1	16	85	10	125	0.5	4	6.5	0.107	0.064	0.043
CA45A155#016R	A	1.5	16	85	10	125	0.5	6	8	0.090	0.054	0.036
CA45B155#016R	B	1.5	16	85	10	125	0.5	6	8	0.097	0.058	0.039
CA45A225#016R	A	2.2	16	85	10	125	0.5	6	5	0.114	0.068	0.046
CA45B225#016R	B	2.2	16	85	10	125	0.5	6	5.5	0.117	0.070	0.047
CA45A335#016R	A	3.3	16	85	10	125	0.5	6	4.5	0.120	0.072	0.048
CA45B335#016R	B	3.3	16	85	10	125	0.5	6	3.5	0.146	0.088	0.059
CA45A475#016R	A	4.7	16	85	10	125	0.8	6	4	0.127	0.076	0.051
CA45B475#016R	B	4.7	16	85	10	125	0.8	6	3.5	0.146	0.088	0.059
CA45C475#016R	C	4.7	16	85	10	125	0.8	6	2.4	0.194	0.116	0.077
CA45A685#016R	A	6.8	16	85	10	125	1.1	6	3.5	0.136	0.082	0.055
CA45B685#016R	B	6.8	16	85	10	125	1.1	6	2.5	0.173	0.104	0.069
CA45C685#016R	C	6.8	16	85	10	125	1.1	6	1.9	0.218	0.131	0.087
CA45A106#016R	A	10	16	85	10	125	1.6	6	3	0.147	0.088	0.059
CA45B106#016R	B	10	16	85	10	125	1.6	6	2.5	0.173	0.104	0.069
CA45C106#016R	C	10	16	85	10	125	1.6	6	1.8	0.224	0.134	0.089
CA45A156#016R	A	15	16	85	10	125	2.4	6	2	0.180	0.108	0.072
CA45B156#016R	B	15	16	85	10	125	2.4	6	2.5	0.173	0.104	0.069
CA45C156#016R	C	15	16	85	10	125	2.4	6	1.8	0.224	0.134	0.089
CA45A226#016R	A	22	16	85	10	125	3.5	15	3	0.147	0.088	0.059
CA45B226#016R	B	22	16	85	10	125	3.5	6	2.2	0.185	0.111	0.074
CA45C226#016R	C	22	16	85	10	125	3.5	6	1.1	0.286	0.172	0.114
CA45B336#016R	B	33	16	85	10	125	5.3	8	1.9	0.199	0.119	0.079
CA45C336#016R	C	33	16	85	10	125	5.3	6	1.5	0.245	0.147	0.098
CA45D336#016R	D	33	16	85	10	125	5.3	6	0.8	0.362	0.217	0.145
CA45B476#016R	B	47	16	85	10	125	7.5	10	2	0.263	0.158	0.105
CA45C476#016R	C	47	16	85	10	125	7.5	6	0.9	0.316	0.190	0.126
CA45D476#016R	D	47	16	85	10	125	7.5	6	0.9	0.342	0.205	0.137
CA45E476#016R	E	47	16	85	10	125	7.5	6	0.9	0.373	0.224	0.149
CA45C686#016R	C	68	16	85	10	125	10.9	6	1.2	0.274	0.164	0.110

## CA45 Chip Tantalum Capacitors (SMD Tantalum Capacitors)

◆Table 4 Electrical Characteristics

Part Number	Case Code	Nominal Capacitance	Rated Voltage	Rated Temperature	Category Voltage	Category Temperature	Max DCL at +25°C	Max DF at +25°C 100Hz	Max ESR +25°CΩ	Ripple Current (A) 100KHz Max		
										+25°C	+85°C	+125°C
		μF	V	°C	V	°C	μA	%	Ω			
CA45D686#016R	D	68	16	85	10	125	10.9	6	0.9	0.342	0.205	0.137
CA45E686#016R	E	68	16	85	10	125	10.9	6	0.9	0.373	0.224	0.149
CA45C107#016R	C	100	16	85	10	125	16.0	12	1	0.300	0.180	0.120
CA45D107#016R	D	100	16	85	10	125	16.0	8	0.7	0.387	0.232	0.155
CA45E107#016R	E	100	16	85	10	125	16.0	6	0.9	0.373	0.224	0.149
CA45D157#016R	D	150	16	85	10	125	24.0	8	0.9	0.342	0.205	0.137
CA45E157#016R	E	150	16	85	10	125	24.0	8	0.5	0.500	0.300	0.200
CA45V157#016R	V	150	16	85	10	125	24.0	8	0.5	0.548	0.329	0.219
CA45D227#016R	D	220	16	85	10	125	35.2	25	0.81	0.360	0.216	0.144
CA45E227#016R	E	220	16	85	10	125	35.2	10	0.5	0.500	0.300	0.200
CA45V227#016R	V	220	16	85	10	125	35.2	8	0.9	0.408	0.245	0.163
CA45E337#016R	E	330	16	85	10	125	52.8	12	0.8	0.395	0.237	0.158
CA45V337#016R	V	330	16	85	10	125	52.8	12	0.8	0.433	0.260	0.173
CA45E477#016R	E	470	16	85	10	125	75.2	16	0.8	0.395	0.237	0.158
CA45A684#020R	A	0.68	20	85	15	125	0.5	4	12	0.074	0.044	0.029
CA45A105#020R	A	1	20	85	15	125	0.5	4	9	0.085	0.051	0.034
CA45B105#020R	B	1	20	85	15	125	0.5	4	9	0.091	0.055	0.037
CA45A155#020R	A	1.5	20	85	15	125	0.5	6	6.5	0.100	0.060	0.040
CA45B155#020R	B	1.5	20	85	15	125	0.5	6	6	0.112	0.067	0.045
CA45A225#020R	A	2.2	20	85	15	125	0.5	6	5.3	0.111	0.066	0.044
CA45B225#020R	B	2.2	20	85	15	125	0.5	6	3.5	0.146	0.088	0.059
CA45A335#020R	A	3.3	20	85	15	125	0.7	4	4.5	0.120	0.072	0.048
CA45B335#020R	B	3.3	20	85	15	125	0.7	6	3	0.158	0.095	0.063
CA45C335#020R	C	3.3	20	85	15	125	0.7	6	3.5	0.160	0.096	0.064
CA45A475#020R	A	4.7	20	85	15	125	0.9	6	4	0.127	0.076	0.051
CA45B475#020R	B	4.7	20	85	15	125	0.9	6	2.8	0.164	0.098	0.065
CA45C475#020R	C	4.7	20	85	15	125	0.9	6	2.4	0.194	0.116	0.077
CA45A685#020R	A	6.8	20	85	15	125	1.4	6	2.4	0.165	0.099	0.066
CA45B685#020R	B	6.8	20	85	15	125	1.4	6	2.4	0.177	0.106	0.071
CA45C685#020R	C	6.8	20	85	15	125	1.4	6	1.9	0.218	0.131	0.087
CA45A106#020R	A	10	20	85	15	125	2.0	8	3.5	0.136	0.082	0.055
CA45B106#020R	B	10	20	85	15	125	2.0	6	2	0.194	0.116	0.077
CA45C106#020R	C	10	20	85	15	125	2.0	6	1.2	0.274	0.164	0.110
CA45B156#020R	B	15	20	85	15	125	3.0	6	2	0.194	0.116	0.077
CA45C156#020R	C	15	20	85	15	125	3.0	6	1.7	0.230	0.138	0.092
CA45D156#020R	D	15	20	85	15	125	3.0	6	1	0.324	0.194	0.130
CA45B226#020R	B	22	20	85	15	125	4.4	8	1.8	0.204	0.122	0.082
CA45C226#020R	C	22	20	85	15	125	4.4	6	1.1	0.286	0.172	0.114
CA45D226#020R	D	22	20	85	15	125	4.4	6	0.8	0.362	0.217	0.145
CA45C336#020R	C	33	20	85	15	125	6.6	6	1.5	0.245	0.147	0.098
CA45D336#020R	D	33	20	85	15	125	6.6	6	0.9	0.342	0.205	0.137
CA45C476#020R	C	47	20	85	15	125	9.4	8	0.5	0.424	0.255	0.170
CA45D476#020R	D	47	20	85	15	125	9.4	6	0.9	0.342	0.205	0.137
CA45E476#020R	E	47	20	85	15	125	9.4	6	0.9	0.373	0.224	0.149
CA45C686#020R	C	68	20	85	15	125	13.6	8	0.5	0.424	0.255	0.170
CA45D686#020R	D	68	20	85	15	125	13.6	6	0.4	0.512	0.307	0.205
CA45E686#020R	E	68	20	85	15	125	13.6	6	0.9	0.373	0.224	0.149
CA45D107#020R	D	100	20	85	15	125	20.0	6	0.5	0.458	0.275	0.183
CA45E107#020R	E	100	20	85	15	125	20.0	6	0.4	0.559	0.335	0.224
CA45V107#020R	V	100	20	85	15	125	20.0	8	0.9	0.408	0.245	0.163
CA45D157#020R	D	150	20	85	15	125	30.0	10	0.9	0.342	0.205	0.137
CA45E157#020R	E	150	20	85	15	125	30.0	8	0.3	0.645	0.387	0.258
CA45V157#020R	V	150	20	85	15	125	30.0	8	0.3	0.707	0.424	0.283
CA45E227#020R	E	220	20	85	15	125	44.0	12	0.9	0.373	0.224	0.149
CA45V227#020R	V	220	20	85	15	125	44.0	12	0.9	0.408	0.245	0.163
CA45E337#020R	E	330	20	85	15	125	66.0	12	0.8	0.395	0.237	0.158
CA45V337#020R	V	330	20	85	15	125	66.0	12	0.8	0.433	0.260	0.173
CA45A684#025R	A	0.68	25	85	17	125	0.5	4	10	0.081	0.048	0.032
CA45B684#025R	B	0.68	25	85	17	125	0.5	4	7.5	0.100	0.060	0.040
CA45A105#025R	A	1	25	85	17	125	0.5	4	7.5	0.093	0.056	0.037

## CA45 Chip Tantalum Capacitors (SMD Tantalum Capacitors)

◆Table 4 Electrical Characteristics

Part Number	Case Code	Nominal Capacitance	Rated Voltage	Rated Temperature	Category Voltage	Category Temperature	Max DCL at +25°C	Max DF at +25°C 100Hz	Max ESR +25°CΩ	Ripple Current (A) 100KHz Max		
										+25°C	+85°C	+125°C
		μF	V	°C	V	°C	μA	%	Ω			
CA45B105#025R	B	1	25	85	17	125	0.5	4	5	0.122	0.073	0.049
CA45A155#025R	A	1.5	25	85	17	125	0.5	4	6.7	0.098	0.059	0.039
CA45B155#025R	B	1.5	25	85	17	125	0.5	6	5	0.122	0.073	0.049
CA45A225#025R	A	2.2	25	85	17	125	0.6	6	7	0.096	0.058	0.039
CA45B225#025R	B	2.2	25	85	17	125	0.6	6	4.5	0.129	0.077	0.052
CA45C225#025R	C	2.2	25	85	17	125	0.6	6	3.5	0.160	0.096	0.064
CA45A335#025R	A	3.3	25	85	17	125	0.8	6	3.7	0.133	0.080	0.053
CA45B335#025R	B	3.3	25	85	17	125	0.8	6	3.5	0.146	0.088	0.059
CA45C335#025R	C	3.3	25	85	17	125	0.8	6	2.5	0.190	0.114	0.076
CA45A475#025R	A	4.7	25	85	17	125	1.2	6	3.1	0.145	0.087	0.058
CA45B475#025R	B	4.7	25	85	17	125	1.2	6	1.5	0.224	0.134	0.089
CA45C475#025R	C	4.7	25	85	17	125	1.2	6	2.4	0.194	0.116	0.077
CA45B685#025R	B	6.8	25	85	17	125	1.7	6	2.8	0.164	0.098	0.065
CA45C685#025R	C	6.8	25	85	17	125	1.7	6	1.9	0.218	0.131	0.087
CA45D685#025R	D	6.8	25	85	17	125	1.7	6	1.4	0.274	0.164	0.110
CA45B106#025R	B	10	25	85	17	125	2.5	6	2.5	0.173	0.104	0.069
CA45C106#025R	C	10	25	85	17	125	2.5	6	1.5	0.245	0.147	0.098
CA45D106#025R	D	10	25	85	17	125	2.5	6	1	0.324	0.194	0.130
CA45C156#025R	C	15	25	85	17	125	3.8	6	1.5	0.245	0.147	0.098
CA45D156#025R	D	15	25	85	17	125	3.8	6	0.9	0.342	0.205	0.137
CA45C226#025R	C	22	25	85	17	125	5.5	6	1.4	0.254	0.152	0.101
CA45D226#025R	D	22	25	85	17	125	5.5	6	0.9	0.342	0.205	0.137
CA45D336#025R	D	33	25	85	17	125	8.3	6	0.9	0.342	0.205	0.137
CA45E336#025R	E	33	25	85	17	125	8.3	6	0.9	0.373	0.224	0.149
CA45D476#025R	D	47	25	85	17	125	11.8	6	0.9	0.342	0.205	0.137
CA45E476#025R	E	47	25	85	17	125	11.8	6	0.9	0.373	0.224	0.149
CA45D686#025R	D	68	25	85	17	125	17.0	6	0.9	0.342	0.205	0.137
CA45E686#025R	E	68	25	85	17	125	17.0	6	0.9	0.373	0.224	0.149
CA45V686#025R	V	68	25	85	17	125	17.0	6	0.9	0.408	0.245	0.163
CA45E107#025R	E	100	25	85	17	125	25.0	10	0.3	0.645	0.387	0.258
CA45V107#025R	V	100	25	85	17	125	25.0	8	0.4	0.612	0.367	0.245
CA45E157#025R	E	150	25	85	17	125	37.5	10	0.8	0.395	0.237	0.158
CA45V157#025R	V	150	25	85	17	125	37.5	10	0.4	0.612	0.367	0.245
CA45A684#035R	A	0.68	35	85	23	125	0.5	4	8	0.090	0.054	0.036
CA45B684#035R	B	0.68	35	85	23	125	0.5	4	6.5	0.107	0.064	0.043
CA45A105#035R	A	1	35	85	23	125	0.5	4	6.0	0.108	0.097	0.043
CA45B105#035R	B	1	35	85	23	125	0.5	4	4	0.137	0.082	0.055
CA45A155#035R	A	1.5	35	85	23	125	0.5	6	7	0.096	0.058	0.039
CA45B155#035R	B	1.5	35	85	23	125	0.5	6	5	0.122	0.073	0.049
CA45C155#035R	C	1.5	35	85	23	125	0.5	6	4.5	0.141	0.085	0.057
CA45A225#035R	A	2.2	35	85	23	125	0.8	6	4.5	0.120	0.072	0.048
CA45B225#035R	B	2.2	35	85	23	125	0.8	6	4	0.137	0.082	0.055
CA45C225#035R	C	2.2	35	85	23	125	0.8	6	3.2	0.168	0.101	0.067
CA45B335#035R	B	3.3	35	85	23	125	1.2	6	3.5	0.146	0.088	0.059
CA45C335#035R	C	3.3	35	85	23	125	1.2	6	2.5	0.190	0.114	0.076
CA45B475#035R	B	4.7	35	85	23	125	1.6	6	3.1	0.156	0.093	0.062
CA45C475#035R	C	4.7	35	85	23	125	1.6	6	2.2	0.202	0.121	0.081
CA45D475#035R	D	4.7	35	85	23	125	1.6	6	1.5	0.265	0.159	0.106
CA45B685#035R	B	6.8	35	85	23	125	2.4	6	1.8	0.204	0.122	0.082
CA45C685#035R	C	6.8	35	85	23	125	2.4	6	1.8	0.224	0.134	0.089
CA45D685#035R	D	6.8	35	85	23	125	2.4	6	1.3	0.284	0.171	0.114
CA45C106#035R	C	10	35	85	23	125	3.5	6	1.6	0.237	0.142	0.095
CA45D106#035R	D	10	35	85	23	125	3.5	6	1	0.324	0.194	0.130
CA45E106#035R	E	10	35	85	23	125	3.5	6	0.9	0.373	0.224	0.149
CA45C156#035R	C	15	35	85	23	125	5.3	6	1.4	0.254	0.152	0.101
CA45D156#035R	D	15	35	85	23	125	5.3	6	0.8	0.362	0.217	0.145
CA45E156#035R	E	15	35	85	23	125	5.3	6	0.9	0.373	0.224	0.149
CA45C226#035R	C	22	35	85	23	125	7.7	6	1.4	0.254	0.152	0.101
CA45D226#035R	D	22	35	85	23	125	7.7	6	0.7	0.387	0.232	0.155
CA45E226#035R	E	22	35	85	23	125	7.7	6	0.5	0.500	0.300	0.200

## CA45 Chip Tantalum Capacitors (SMD Tantalum Capacitors)

◆Table 4 Electrical Characteristics

Part Number	Case Code	Nominal Capacitance	Rated Voltage	Rated Temperature	Category Voltage	Category Temperature	Max DCL at +25°C	Max DF at +25°C 100Hz	Max ESR +25°CΩ	Ripple Current (A) 100KHz Max		
										+25°C	+85°C	+125°C
		μF	V	°C	V	°C	μA	%	Ω			
CA45D336#035R	D	33	35	85	23	125	11.6	6	0.9	0.342	0.205	0.137
CA45E336#035R	E	33	35	85	23	125	11.6	6	0.9	0.373	0.224	0.149
CA45V336#035R	V	33	35	85	23	125	11.6	6	0.5	0.548	0.329	0.219
CA45D476#035R	D	47	35	85	23	125	16.5	10	1.2	0.296	0.177	0.118
CA45E476#035R	E	47	35	85	23	125	16.5	10	0.9	0.373	0.224	0.149
CA45V476#035R	V	47	35	85	23	125	16.5	8	0.4	0.612	0.367	0.245
CA45E686#035R	E	68	35	85	23	125	23.8	8	1	0.354	0.212	0.141
CA45V686#035R	V	68	35	85	23	125	23.8	6	0.5	0.548	0.329	0.219
CA45A684#050R	A	0.68	50	85	33	125	0.5	4	7.9	0.091	0.054	0.036
CA45B684#050R	B	0.68	50	85	33	125	0.5	4	8	0.097	0.058	0.039
CA45C684#050R	C	0.68	50	85	33	125	0.5	4	7	0.113	0.068	0.045
CA45A105#050R	A	1	50	85	33	125	0.5	4	6.6	0.099	0.060	0.040
CA45B105#050R	B	1	50	85	33	125	0.5	6	6	0.112	0.067	0.045
CA45C105#050R	C	1	50	85	33	125	0.5	4	5	0.134	0.080	0.054
CA45B155#050R	B	1.5	50	85	33	125	0.8	8	5.4	0.118	0.071	0.047
CA45C155#050R	C	1.5	50	85	33	125	0.8	6	4.5	0.141	0.085	0.057
CA45D155#050R	D	1.5	50	85	33	125	0.8	6	3.5	0.173	0.104	0.069
CA45B225#050R	B	2.2	50	85	33	125	1.1	8	4.5	0.129	0.077	0.052
CA45C225#050R	C	2.2	50	85	33	125	1.1	6	2.5	0.190	0.114	0.076
CA45D225#050R	D	2.2	50	85	33	125	1.1	6	2.5	0.205	0.123	0.082
CA45C335#050R	C	3.3	50	85	33	125	1.7	6	2	0.212	0.127	0.085
CA45D335#050R	D	3.3	50	85	33	125	1.7	6	2	0.229	0.137	0.092
CA45C475#050R	C	4.7	50	85	33	125	2.4	4	1.4	0.254	0.152	0.101
CA45D475#050R	D	4.7	50	85	33	125	2.4	6	1.2	0.296	0.177	0.118
CA45C685#050R	C	6.8	50	85	33	125	3.4	6	1	0.300	0.180	0.120
CA45D685#050R	D	6.8	50	85	33	125	3.4	6	1	0.324	0.194	0.130
CA45E685#050R	E	6.8	50	85	33	125	3.4	6	1.5	0.289	0.173	0.115
CA45D106#050R	D	10	50	85	33	125	5.0	6	0.8	0.362	0.217	0.145
CA45E106#050R	E	10	50	85	33	125	5.0	6	1	0.354	0.212	0.141
CA45V106#050R	V	10	50	85	33	125	5.0	6	0.65	0.480	0.288	0.192
CA45D156#050R	D	15	50	85	33	125	7.5	6	0.6	0.418	0.251	0.167
CA45E156#050R	E	15	50	85	33	125	7.5	6	0.6	0.456	0.274	0.183
CA45V156#050R	V	15	50	85	33	125	7.5	6	0.6	0.500	0.300	0.200
CA45E226#050R	E	22	50	85	33	125	11.0	8	0.9	0.373	0.224	0.149
CA45V226#050R	V	22	50	85	33	125	11.0	8	0.6	0.500	0.300	0.200

### Important Note

1. Please do not use multimeter to test tantalum capacitors.
2. Capacitance and DF measured at :100Hz ,  $U_{-} = 2.2^{°}_{-10} V$  ,  $U_{~} = 1.0^{°}_{-0.5} V$  , Frequency = 100Hz. Test only applied to series equivalent circuit.
3. Please refer to derating voltage or category voltage if temperature > 85°C
4. The DCL parameter should be read after 5 minutes when it connected to the circuit.
5. For special requirement please consult to our sales.