

DV Series Chip type

Features

- ◆ Chip type ,Low impedance
- ◆ Chip type with Endurance of 2000~5000 hours at +105°C
- ◆ Designed for surface mounting on high density PC board
- ◆ Applicable to automatic mounting machine using carrier tape
- ◆ Complied to the RoHS directive

ZV **Low Impedance** → DV



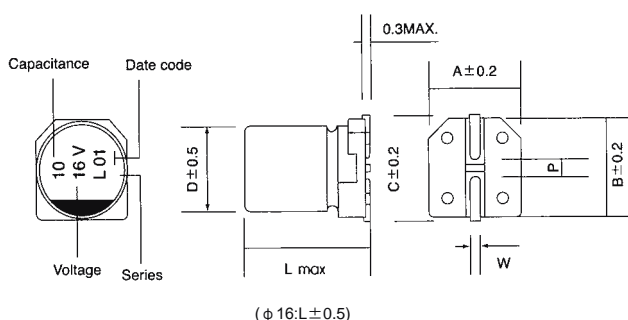
Specifications

Item	Performance Characteristics																					
Operating Temperature Range	-55~ +105°C																					
Rated Voltage Range	6.3~50 VDC																					
Capacitance Range	1 to 6800 μ F																					
Capacitance Tolerance	±20%(120Hz,+20°C)																					
Leakage Current (+20°C,max.)	$I \leq 0.01 CV$ or $3 (\mu A)$ After 2 minutes whichever is greater measured with rated working voltage applied.																					
Dissipation Factor ($\tan \delta$, at 20°C , 120Hz)	<table border="1"> <tr> <td>Working voltage(VDC)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>D.F. (%) max.</td> <td>24</td> <td>19</td> <td>16</td> <td>14</td> <td>14</td> <td>12</td> </tr> </table>	Working voltage(VDC)	6.3	10	16	25	35	50	D.F. (%) max.	24	19	16	14	14	12							
	Working voltage(VDC)	6.3	10	16	25	35	50															
D.F. (%) max.	24	19	16	14	14	12																
For capacitance value > 1000 μ F, add 2 per another 1000 μ F.																						
Low Temperature Characteristics (at 120Hz)	Impedance ratio max																					
	<table border="1"> <tr> <td>Working voltage(VDC)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Z-25°C / Z+20°C</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-55°C / Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </table>	Working voltage(VDC)	6.3	10	16	25	35	50	Z-25°C / Z+20°C	2	2	2	2	2	2	Z-55°C / Z+20°C	8	6	4	4	3	3
	Working voltage(VDC)	6.3	10	16	25	35	50															
Z-25°C / Z+20°C	2	2	2	2	2	2																
Z-55°C / Z+20°C	8	6	4	4	3	3																
Endurance	Test conditions Duration time :2000 Hrs (φ 12.5~16:5000H) Ambient temperature :+105°C Applied voltage :Rated DC working voltage After test requirement at +20°C : Capacitance change :Within ±30% of initial value Dissipation factor :Less than 300% of specified value Leakage current :Less than specified value																					
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105°C Applied voltage :None After test requirement at +20°C : Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.																					
Resistance to soldering heat	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them at 250°C for 30 seconds.																					
	<table border="1"> <tr> <td>Leakage current</td> <td>Less than specified value</td> </tr> <tr> <td>Capacitance change</td> <td>Within ±10% of initial value</td> </tr> <tr> <td>$\tan \delta$</td> <td>Less than specified value</td> </tr> </table>	Leakage current	Less than specified value	Capacitance change	Within ±10% of initial value	$\tan \delta$	Less than specified value															
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Multiplier for Ripple Current vs. Frequency

CAP(μ F)\Frequency(Hz)	60(50)	120	400	1K	10K	50K-100K
CAP ≤ 10	0.47	0.59	0.76	0.85	0.97	1.0
10 < CAP	0.52	0.65	0.80	0.89	0.97	1.0

Diagram of Dimensions:(unit:mm)



φ D	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
12.5	14	13.5	13.5	15.0	1.0~1.4	5.5
16	17	17.1	17.1	18.0	1.0~1.4	6.3

Case Size

φ DxL(mm)

WV(V) Cap(μF)	6.3			10			16			25			35			50		
	Size	Ripple	imp.	Size	Ripple	imp.	Size	Ripple	imp.	Size	Ripple	imp.	Size	Ripple	imp.	Size	Ripple	imp.
1.0																4X5.5	55	4.5
2.2																4X5.5	55	4.5
3.3													4X5.5	80	2.8	4X5.5	55	4.5
4.7													4X5.5	85	2.5	4X5.5	55	4.5
6.8										4X5.5	70	2.8	4X5.5	88	2.2	5X5.5	75	3.8
10							4X5.5	80	2.2	4X5.5	85	2.1	4X5.5	90	2.0	5X5.5	95	2.8
15							4X5.5	85	2.0	5X5.5	125	1.9	5X5.5	125	1.4	6.3X5.5	130	2.2
22	4X5.5	75	2.2	4X5.5	80	2.2	4X5.5	90	1.98	5X5.5	145	1.2	5X5.5	155	1.1	6.3X5.5	150	1.3
27	4X5.5	79	1.98	5X5.5	125	1.9	5X5.5	140	1.2	6.3X5.5	160	1.15	6.3X5.5	170	1.05	6.3X5.5	170	1.05
33	4X5.5	82	1.9	4X5.5	90	1.85	5X5.5	170	0.74	6.3X5.5	200	0.62	6.3X5.5	210	0.6	6.3X7.7	180	1.2
47	4X5.5	86	1.88	5X5.5	150	1.2	6.3X5.5	185	0.6	5X5.5	160	1.05	6.3X5.5	230	0.54	6.3X7.7	190	0.71
56	5X5.5	130	1.3	5X5.5	150	1.2	6.3X5.5	185	0.6	6.3X5.5	220	0.58	8X6.5	260	0.51	8X6.5	200	0.7
68	4X5.5	86	1.88	5X5.5	165	1.1	5X5.5	195	1.05	6.3X5.5	220	0.56	6.3X5.5	240	0.53	6.3X7.7	230	0.7
77	5X5.5	150	1.1	6.3X5.5	180	0.59	6.3X5.5	210	0.58	6.3X7.7	230	0.54	8X6.5	250	0.49	8X6.5	240	0.69
100	5X5.5	150	1.10	6.3X5.5	210	0.57	6.3X5.5	220	0.56	6.3X5.5	230	0.54	6.3X7.7	250	0.49	8X10.5	300	0.52
150	5X5.5	160	0.9	6.3X5.5	220	0.55	6.3X5.5	230	0.54	6.3X5.5	240	0.48	6.3X7.7	265	0.4	8X10.5	320	0.5
220	6.3X5.5	220	0.55	6.3X5.5	220	0.55	8X6.5	240	0.50	8X6.5	260	0.45	6.3X7.7	265	0.4	8X10.5	320	0.5
330	5X5.5	170	0.8	6.3X5.5	240	0.53	6.3X5.5	255	0.52	6.3X7.7	290	0.38	6.3X7.7	300	0.38	8X10.5	350	0.46
470	6.3X5.5	235	0.51	6.3X5.5	250	0.49	6.3X7.7	265	0.45	8X6.5	300	0.36	8X10.5	420	0.28	8X10.5	420	0.28
680	8X6.5	250	0.48	8X6.5	260	0.47	8X6.5	270	0.44	8X10.5	480	0.25	8X10.5	510	0.24	10X10.5	600	0.25
1000	6.3X5.5	240	0.48	6.3X7.7	270	0.44	6.3X7.7	275	0.43	8X10.5	530	0.22	8X10.5	570	0.21	10X10.5	650	0.23
1500	6.3X7.7	260	0.45	8X6.5	285	0.40	8X6.5	285	0.41	8X10.5	530	0.22	8X10.5	570	0.21	10X10.5	650	0.23
2200	6.3X7.7	275	0.36	8X10.5	500	0.25	8X10.5	550	0.25	8X10.5	570	0.2	10X10.5	650	0.15	12.5X14	800	0.21
3300	8X6.5	290	0.34	8X10.5	500	0.25	8X10.5	550	0.25	8X10.5	570	0.2	10X10.5	650	0.15	12.5X14	800	0.21
4700	8X10.5	450	0.28	8X10.5	550	0.25	8X10.5	590	0.22	10X10.5	650	0.15	12.5X14	1100	0.08			
6800	8X10.5	500	0.25	10X10.5	680	0.2	10X10.5	720	0.16				12.5X14	1100	0.08			
10000	8X10.5	530	0.20	10X10.5	740	0.15				12.5X14	1100	0.08				16X17	1000	0.078
15000	10X10.5	570	0.17															
22000	10X10.5	600	0.16															
33000	10X10.5	650	0.13				12.5X14	1100	0.08				16X17	1250	0.052			
47000				12.5X14	1100	0.08				16X17	1250	0.052						
68000	12.5X14	1100	0.08				16X17	1250	0.052									
100000				16X17	1250	0.052												
150000	16X17	1250	0.052															

Ripple current (mArms) at 105°C 100KHz

Max Impedance at 20°C 100KHz