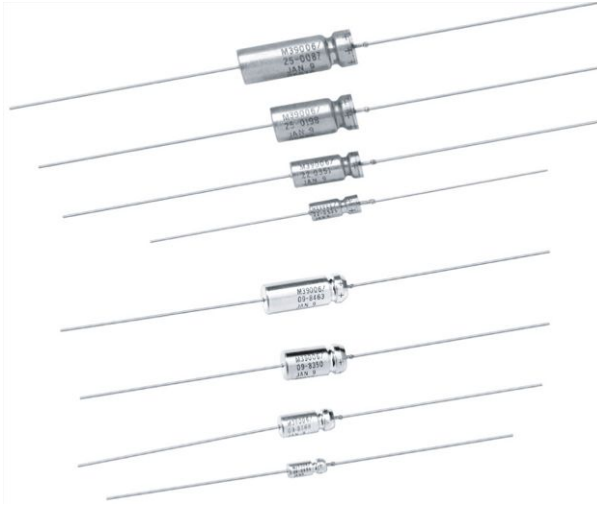




## Wet Tantalum Capacitors, Space Level, Established Reliability, DSCC Drawings 06013, 06014, 06015, 06016



### FEATURES

- Screened for space level applications
- Tantalum case, hermetically sealed, axial leaded
- Screened M39006/22/25/30/31 capacitors
  - “R” or 0.001 %/1000 failure rate
  - “H” or high shock and vibration rated
  - Enhanced 100 % or group A testing
  - Enhanced production lot testing - group b prior to shipment
- Stability
- Thermal shock
- 1000 h life at + 85 °C

CROSS REFERENCE		
DSCC DRAWING	MIL SPECIFICATION	STYLE
DSCC 06013	M39006/22	CLR79
DSCC 06014	M39006/25	CLR81
DSCC 06015	M39006/30	CLR90
DSCC 06016	M39006/31	CLR91

### Established Reliability “Space Level” Wet Tantalum Capacitors

In accordance with the DSCC drawings, all parts are up-screened from “R” failure rate, “H” characteristic, MIL-PRF-39006/22/25/30/31 capacitors. Parts are marked with the appropriate DSCC drawing number and PIN (dash number). For information on the exact performance of these capacitors, please refer to the latest issue of the DSCC drawing and appropriate military specification.

## ORDERING INFORMATION

**0601X**  
DSCC DRAWING NUMBER

Indicates the basic specification; in this case MIL-PRF-39006

**XXXXH**  
PIN OR DASH NUMBER

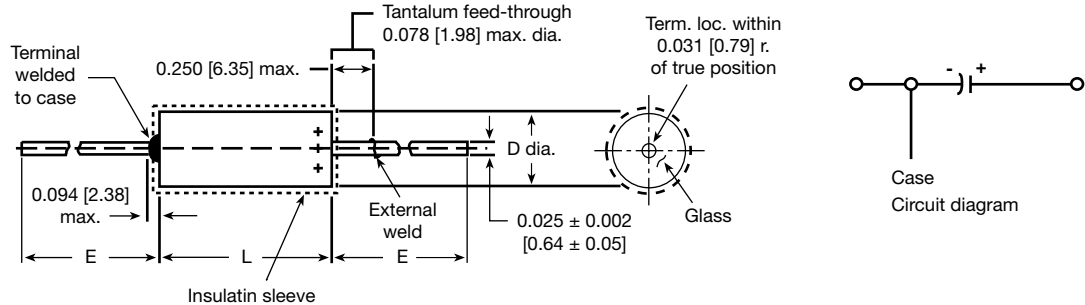
(see Standard Ratings tables)

### Note

- Material in this section has been abstracted from DSCC 06013, DSCC 06014, DSCC 06015, DSCC 06016.

## DIMENSIONS in inches [millimeters]

DSCC 06013 (CLR79 style)  
DSCC 06014 (CLR81 style)  
DSCC 06015 (CLR90 style)  
DSCC 06016 (CLR91 style)



CASE CODE	BARE CASE		WITH INSULATING SLEEVE		E LEAD LENGTH	WEIGHT (oz./g) (Max.)
	D	L	D (Max.)	L (Max.)		
T1	0.188 ± 0.016 [4.78 ± 0.41]	0.453 + 0.031/- 0.016 [11.51 + 0.79/- 0.41]	0.219 [5.56]	0.515 [13.08]	1.500 ± 0.250 [38.10 ± 6.35]	0.09 [2.6]
T2	0.281 ± 0.016 [7.14 ± 0.41]	0.641 + 0.031/- 0.016 [16.28 + 0.79/- 0.41]	0.312 [7.92]	0.704 [17.88]	2.250 ± 0.250 [57.15 ± 6.35]	0.22 [6.2]
T3	0.375 ± 0.016 [9.53 ± 0.41]	0.766 + 0.031/- 0.016 [19.46 + 0.79/- 0.41]	0.406 [10.31]	0.828 [21.03]	2.250 ± 0.250 [57.15 ± 6.35]	0.41 [11.6]
T4	0.375 ± 0.016 [9.53 ± 0.41]	1.062 + 0.031/- 0.016 [26.97 + 0.79/- 0.41]	0.406 [10.31]	1.126 [28.60]	2.250 ± 0.250 [57.15 ± 6.35]	0.62 [17.7]



STANDARD RATINGS: DSCC 06013											
CAPACITANCE ( $\mu$ F)	CASE CODE	CAP. TOL. ( $\pm$ %)	PIN FOR DSCC 06013 (1)	MAX. DCL ( $\mu$ A) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C ( $\Omega$ )	MAX. CAPACITANCE CHANGE (%) AT			MAX. RIPPLE CURRENT AT + 85 °C 40 kHz (mA) (2)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C	
<b>6 V<sub>DC</sub> AT + 85 °C; 4 V<sub>DC</sub> AT + 125 °C</b>											
30	T1	20	0441H	1.0	2.0	9	100	- 40	+ 10.5	+ 12	820
30	T1	10	0442H	1.0	2.0	9	100	- 40	+ 10.5	+ 12	820
30	T1	5	0443H	1.0	2.0	9	100	- 40	+ 10.5	+ 12	820
68	T1	20	0444H	1.0	2.0	15	60	- 40	+ 14	+ 16	960
68	T1	10	0445H	1.0	2.0	15	60	- 40	+ 14	+ 16	960
68	T1	5	0446H	1.0	2.0	15	60	- 40	+ 14	+ 16	960
140	T2	20	0447H	1.0	3.0	21	40	- 40	+ 14	+ 16	1200
140	T2	10	0448H	1.0	3.0	21	40	- 40	+ 14	+ 16	1200
140	T2	5	0449H	1.0	3.0	21	40	- 40	+ 14	+ 16	1200
270	T2	20	0450H	1.0	6.5	45	25	- 44	+ 17.5	+ 20	1375
270	T2	10	0451H	1.0	6.5	45	25	- 44	+ 17.5	+ 20	1375
270	T2	5	0452H	1.0	6.5	45	25	- 44	+ 17.5	+ 20	1375
330	T3	20	0453H	2.0	7.9	36	20	- 44	+ 14	+ 16	1800
330	T3	10	0454H	2.0	7.9	36	20	- 44	+ 14	+ 16	1800
330	T3	5	0455H	2.0	7.9	36	20	- 44	+ 14	+ 16	1800
560	T3	20	0456H	2.0	13.0	55	25	- 64	+ 17.5	+ 20	1900
560	T3	10	0457H	2.0	13.0	55	25	- 64	+ 17.5	+ 20	1900
560	T3	5	0458H	2.0	13.0	55	25	- 64	+ 17.5	+ 20	1900
1200	T4	20	0459H	3.0	14.0	90	20	- 80	+ 25	+ 25	2265
1200	T4	10	0460H	3.0	14.0	90	20	- 80	+ 25	+ 25	2265
<b>8 V<sub>DC</sub> AT + 85 °C; 5 V<sub>DC</sub> AT + 125 °C</b>											
25	T1	20	0461H	1.0	2.0	7.5	100	- 40	+ 10.5	+ 12	820
25	T1	10	0462H	1.0	2.0	7.5	100	- 40	+ 10.5	+ 12	820
25	T1	5	0463H	1.0	2.0	7.5	100	- 40	+ 10.5	+ 12	820
56	T1	20	0464H	1.0	2.0	14	59	- 40	+ 14	+ 16	900
56	T1	10	0465H	1.0	2.0	14	59	- 40	+ 14	+ 16	900
56	T1	5	0466H	1.0	2.0	14	59	- 40	+ 14	+ 16	900
120	T2	20	0467H	1.0	2.0	20	50	- 44	+ 17.5	+ 20	1220
120	T2	10	0468H	1.0	2.0	20	50	- 44	+ 17.5	+ 20	1220
120	T2	5	0469H	1.0	2.0	20	50	- 44	+ 17.5	+ 20	1220
220	T2	20	0470H	1.0	7.0	37	30	- 44	+ 17.5	+ 20	1370
220	T2	10	0471H	1.0	7.0	37	30	- 44	+ 17.5	+ 20	1370
220	T2	5	0472H	1.0	7.0	37	30	- 44	+ 17.5	+ 20	1370
290	T3	20	0473H	2.0	6.0	34	25	- 64	+ 17.5	+ 20	1770
290	T3	10	0474H	2.0	6.0	34	25	- 64	+ 17.5	+ 20	1770
290	T3	5	0475H	2.0	6.0	34	25	- 64	+ 17.5	+ 20	1770
430	T3	20	0476H	2.0	14.0	46	25	- 64	+ 17.5	+ 20	1825
430	T3	10	0477H	2.0	14.0	46	25	- 64	+ 17.5	+ 20	1825
430	T3	5	0478H	2.0	14.0	46	25	- 64	+ 17.5	+ 20	1825
850	T4	20	0479H	4.0	16.0	60	22	- 80	+ 25	+ 25	2330
850	T4	10	0480H	4.0	16.0	60	22	- 80	+ 25	+ 25	2330
<b>10 V<sub>DC</sub> AT + 85 °C; 7 V<sub>DC</sub> AT + 125 °C</b>											
20	T1	20	0481H	1.0	2.0	6	175	- 32	+ 10.5	+ 12	820
20	T1	10	0482H	1.0	2.0	6	175	- 32	+ 10.5	+ 12	820
20	T1	5	0483H	1.0	2.0	6	175	- 32	+ 10.5	+ 12	820
47	T1	20	0484H	1.0	2.0	13	100	- 36	+ 14	+ 16	855
47	T1	10	0485H	1.0	2.0	13	100	- 36	+ 14	+ 16	855
47	T1	5	0486H	1.0	2.0	13	100	- 36	+ 14	+ 16	855
100	T2	20	0487H	1.0	4.0	15	60	- 36	+ 14	+ 16	1200
100	T2	10	0488H	1.0	4.0	15	60	- 36	+ 14	+ 16	1200
100	T2	5	0489H	1.0	4.0	15	60	- 36	+ 14	+ 16	1200
180	T2	20	0490H	1.0	7.0	30	40	- 36	+ 14	+ 16	1365

**Notes**

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) For ripple current limits at various temperatures, voltages and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06013											
CAPACITANCE ( $\mu$ F)	CASE CODE	CAP. TOL. ( $\pm$ %)	PIN FOR DSCC 06013 (1)	MAX. DCL ( $\mu$ A) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C ( $\Omega$ )	MAX. CAPACITANCE CHANGE (%) AT			MAX. RIPPLE CURRENT AT + 85 °C 40 kHz (mA) (2)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C	
<b>10 V<sub>DC</sub> AT + 85 °C; 7 V<sub>DC</sub> AT + 125 °C</b>											
180	T2	10	0491H	1.0	7.0	30	40	- 36	+ 14	+ 16	1365
180	T2	5	0492H	1.0	7.0	30	40	- 36	+ 14	+ 16	1365
250	T3	20	0493H	2.0	10.0	30	30	- 40	+ 14	+ 16	1720
250	T3	10	0494H	2.0	10.0	30	30	- 40	+ 14	+ 16	1720
250	T3	5	0495H	2.0	10.0	30	30	- 40	+ 14	+ 16	1720
390	T3	20	0496H	2.0	16.0	44	25	- 64	+ 17.5	+ 20	1800
390	T3	10	0497H	2.0	16.0	44	25	- 64	+ 17.5	+ 20	1800
390	T3	5	0498H	2.0	16.0	44	25	- 64	+ 17.5	+ 20	1800
750	T4	20	0499H	4.0	16.0	50	23	- 80	+ 25	+ 25	2360
750	T4	10	0500H	4.0	16.0	50	23	- 80	+ 25	+ 25	2360
<b>15 V<sub>DC</sub> AT + 85 °C; 10 V<sub>DC</sub> AT + 125 °C</b>											
15	T1	20	0501H	1.0	2.0	5	155	- 24	+ 10.5	+ 12	780
15	T1	10	0502H	1.0	2.0	5	155	- 24	+ 10.5	+ 12	780
15	T1	5	0503H	1.0	2.0	5	155	- 24	+ 10.5	+ 12	780
33	T1	20	0504H	1.0	2.0	10	90	- 28	+ 14	+ 16	820
33	T1	10	0505H	1.0	2.0	10	90	- 28	+ 14	+ 16	820
33	T1	5	0506H	1.0	2.0	10	90	- 28	+ 14	+ 16	820
70	T2	20	0507H	1.0	4.0	13	75	- 28	+ 14	+ 16	1150
70	T2	10	0508H	1.0	4.0	13	75	- 28	+ 14	+ 16	1150
70	T2	5	0509H	1.0	4.0	13	75	- 28	+ 14	+ 16	1150
120	T2	20	0510H	1.0	7.0	18	50	- 28	+ 17.5	+ 20	1450
120	T2	10	0511H	1.0	7.0	18	50	- 28	+ 17.5	+ 20	1450
120	T2	5	0512H	1.0	7.0	18	50	- 28	+ 17.5	+ 20	1450
170	T3	20	0513H	2.0	10.0	25	35	- 32	+ 14	+ 16	1480
170	T3	10	0514H	2.0	10.0	25	35	- 32	+ 14	+ 16	1480
170	T3	5	0515H	2.0	10.0	25	35	- 32	+ 14	+ 16	1480
270	T3	20	0516H	2.0	16.0	32	30	- 56	+ 17.5	+ 20	1740
270	T3	10	0517H	2.0	16.0	32	30	- 56	+ 17.5	+ 20	1740
270	T3	5	0518H	2.0	16.0	32	30	- 56	+ 17.5	+ 20	1740
540	T4	20	0519H	6.0	24.0	40	23	- 80	+ 25	+ 25	2330
540	T4	10	0520H	6.0	24.0	40	23	- 80	+ 25	+ 25	2330
<b>25 V<sub>DC</sub> AT + 85 °C; 15 V<sub>DC</sub> AT + 125 °C</b>											
10	T1	20	0521H	1.0	2.0	4	220	- 16	+ 8	+ 9	715
10	T1	10	0522H	1.0	2.0	4	220	- 16	+ 8	+ 9	715
10	T1	5	0523H	1.0	2.0	4	220	- 16	+ 8	+ 9	715
22	T1	20	0524H	1.0	2.0	6.6	140	- 20	+ 10.5	+ 12	825
22	T1	10	0525H	1.0	2.0	6.6	140	- 20	+ 10.5	+ 12	825
22	T1	5	0526H	1.0	2.0	6.6	140	- 20	+ 10.5	+ 12	825
50	T2	20	0527H	1.0	2.0	11.0	70	- 28	+ 13	+ 15	1130
50	T2	10	0528H	1.0	2.0	11.0	70	- 28	+ 13	+ 15	1130
50	T2	5	0529H	1.0	2.0	11.0	70	- 28	+ 13	+ 15	1130
100	T2	20	0530H	1.0	10.0	15	50	- 28	+ 13	+ 15	1435
100	T2	10	0531H	1.0	10.0	15	50	- 28	+ 13	+ 15	1435
100	T2	5	0532H	1.0	10.0	15	50	- 28	+ 13	+ 15	1435
120	T3	20	0533H	2.0	6.0	21	38	- 32	+ 13	+ 15	1450
120	T3	10	0534H	2.0	6.0	21	38	- 32	+ 13	+ 15	1450
120	T3	5	0535H	2.0	6.0	21	38	- 32	+ 13	+ 15	1450
180	T3	20	0536H	2.0	18.0	26	32	- 48	+ 13	+ 15	1525
180	T3	10	0537H	2.0	18.0	26	32	- 48	+ 13	+ 15	1525
180	T3	5	0538H	2.0	18.0	26	32	- 48	+ 13	+ 15	1525
350	T4	20	0539H	7.0	28.0	35	24	- 70	+ 25	+ 25	1970
350	T4	10	0540H	7.0	28.0	35	24	- 70	+ 25	+ 25	1970

**Notes**

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) For ripple current limits at various temperatures, voltages and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06013												
CAPACITANCE ( $\mu$ F)	CASE CODE	CAP. TOL. ( $\pm$ %)	PIN FOR DSCC 06013 (1)	MAX. DCL ( $\mu$ A) AT			MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C ( $\Omega$ )	MAX. CAPACITANCE CHANGE (%) AT			MAX. RIPPLE CURRENT AT + 85 °C 40 kHz (mA) (2)
				+ 25 °C	+ 85 °C + 125 °C				- 55 °C	+ 85 °C	+ 125 °C	
<b>30 V<sub>DC</sub> AT + 85 °C; 20 V<sub>DC</sub> AT + 125 °C</b>												
8.0	T1	20	0541H	1.0	2.0	4	275	- 16	+ 8	+ 12	640	
8.0	T1	10	0542H	1.0	2.0	4	275	- 16	+ 8	+ 12	640	
8.0	T1	5	0543H	1.0	2.0	4	275	- 16	+ 8	+ 12	640	
15	T1	20	0544H	1.0	2.0	5	175	- 20	+ 10.5	+ 12	780	
15	T1	10	0545H	1.0	2.0	5	175	- 20	+ 10.5	+ 12	780	
15	T1	5	0546H	1.0	2.0	5	175	- 20	+ 10.5	+ 12	780	
40	T2	20	0547H	1.0	5.0	10	65	- 24	+ 10.5	+ 12	1120	
40	T2	10	0548H	1.0	5.0	10	65	- 24	+ 10.5	+ 12	1120	
40	T2	5	0549H	1.0	5.0	10	65	- 24	+ 10.5	+ 12	1120	
68	T2	20	0550H	1.0	8.0	13	60	- 24	+ 13	+ 15	1285	
68	T2	10	0551H	1.0	8.0	13	60	- 24	+ 13	+ 15	1285	
68	T2	5	0552H	1.0	8.0	13	60	- 24	+ 13	+ 15	1285	
100	T3	20	0553H	2.0	12.0	17	40	- 28	+ 10.5	+ 12	1450	
100	T3	10	0554H	2.0	12.0	17	40	- 28	+ 10.5	+ 12	1450	
100	T3	5	0555H	2.0	12.0	17	40	- 28	+ 10.5	+ 12	1450	
150	T3	20	0556H	2.0	18.0	23	35	- 48	+ 13	+ 15	1525	
150	T3	10	0557H	2.0	18.0	23	35	- 48	+ 13	+ 15	1525	
150	T3	5	0558H	2.0	18.0	23	35	- 48	+ 13	+ 15	1525	
300	T4	20	0559H	8.0	32.0	31	25	- 60	+ 25	+ 25	1950	
300	T4	10	0560H	8.0	32.0	31	25	- 60	+ 25	+ 25	1950	
<b>50 V<sub>DC</sub> AT + 85 °C; 30 V<sub>DC</sub> AT + 125 °C</b>												
5.0	T1	20	0561H	1.0	2.0	3	400	- 16	+ 5	+ 6	580	
5.0	T1	10	0562H	1.0	2.0	3	400	- 16	+ 5	+ 6	580	
5.0	T1	5	0563H	1.0	2.0	3	400	- 16	+ 5	+ 6	580	
10	T1	20	0564H	1.0	2.0	4	250	- 24	+ 8	+ 9	715	
10	T1	10	0565H	1.0	2.0	4	250	- 24	+ 8	+ 9	715	
10	T1	5	0566H	1.0	2.0	4	250	- 24	+ 8	+ 9	715	
25	T2	20	0567H	1.0	5.0	8	95	- 20	+ 10.5	+ 12	1005	
25	T2	10	0568H	1.0	5.0	8	95	- 20	+ 10.5	+ 12	1005	
25	T2	5	0569H	1.0	5.0	8	95	- 20	+ 10.5	+ 12	1005	
47	T2	20	0570H	1.0	9.0	11	70	- 28	+ 13	+ 15	1155	
47	T2	10	0571H	1.0	9.0	11	70	- 28	+ 13	+ 15	1155	
47	T2	5	0572H	1.0	9.0	11	70	- 28	+ 13	+ 15	1155	
60	T3	20	0573H	2.0	12.0	12	45	- 16	+ 10.5	+ 12	1335	
60	T3	10	0574H	2.0	12.0	12	45	- 16	+ 10.5	+ 12	1335	
60	T3	5	0575H	2.0	12.0	12	45	- 16	+ 10.5	+ 12	1335	
82	T3	20	0576H	2.0	16.0	15	45	- 32	+ 13	+ 15	1400	
82	T3	10	0577H	2.0	16.0	15	45	- 32	+ 13	+ 15	1400	
82	T3	5	0578H	2.0	16.0	15	45	- 32	+ 13	+ 15	1400	
160	T4	20	0579H	8.0	32.0	17	27	- 50	+ 25	+ 25	1900	
160	T4	10	0580H	8.0	32.0	17	27	- 50	+ 25	+ 25	1900	
<b>60 V<sub>DC</sub> AT + 85 °C; 40 V<sub>DC</sub> AT + 125 °C</b>												
4.0	T1	20	0581H	1.0	2.0	2.8	550	- 16	+ 5	+ 6	525	
4.0	T1	10	0582H	1.0	2.0	2.8	550	- 16	+ 5	+ 6	525	
4.0	T1	5	0583H	1.0	2.0	2.8	550	- 16	+ 5	+ 6	525	
8.2	T1	20	0584H	1.0	2.0	4	275	- 24	+ 8	+ 9	625	
8.2	T1	10	0585H	1.0	2.0	4	275	- 24	+ 8	+ 9	625	
8.2	T1	5	0586H	1.0	2.0	4	275	- 24	+ 8	+ 9	625	
20	T2	20	0587H	1.0	5.0	7	105	- 16	+ 10.5	+ 12	930	
20	T2	10	0588H	1.0	5.0	7	105	- 16	+ 10.5	+ 12	930	
20	T2	5	0589H	1.0	5.0	7	105	- 16	+ 10.5	+ 12	930	
39	T2	20	0590H	1.0	9.0	10	90	- 28	+ 10.5	+ 12	1110	

**Notes**

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) For ripple current limits at various temperatures, voltages and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06013											
CAPACITANCE ( $\mu$ F)	CASE CODE	CAP. TOL. ( $\pm$ %)	PIN FOR DSCC 06013 (1)	MAX. DCL ( $\mu$ A) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C ( $\Omega$ )	MAX. CAPACITANCE CHANGE (%) AT			MAX. RIPPLE CURRENT AT + 85 °C 40 kHz (2)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C	
<b>60 V<sub>DC</sub> AT + 85 °C; 40 V<sub>DC</sub> AT + 125 °C</b>											
39	T2	10	0591H	1.0	9.0	10	90	- 28	+ 10.5	+ 12	1110
39	T2	5	0592H	1.0	9.0	10	90	- 28	+ 10.5	+ 12	1110
50	T3	20	0593H	2.0	12.0	10	50	- 16	+ 10.5	+ 12	1330
50	T3	10	0594H	2.0	12.0	10	50	- 16	+ 10.5	+ 12	1330
50	T3	5	0595H	2.0	12.0	10	50	- 16	+ 10.5	+ 12	1330
68	T3	20	0596H	2.0	16.0	13	50	- 32	+ 10.5	+ 12	1365
68	T3	10	0597H	2.0	16.0	13	50	- 32	+ 10.5	+ 12	1365
68	T3	5	0598H	2.0	16.0	13	50	- 32	+ 10.5	+ 12	1365
140	T4	20	0599H	8.0	32.0	16	28	- 40	+ 20	+ 20	1850
140	T4	10	0600H	8.0	32.0	16	28	- 40	+ 20	+ 20	1850
<b>75 V<sub>DC</sub> AT + 85 °C; 50 V<sub>DC</sub> AT + 125 °C</b>											
3.5	T1	20	0601H	1.0	2.0	2.5	650	- 16	+ 5	+ 6	525
3.5	T1	10	0602H	1.0	2.0	2.5	650	- 16	+ 5	+ 6	525
3.5	T1	5	0603H	1.0	2.0	2.5	650	- 16	+ 5	+ 6	525
6.8	T1	20	0604H	1.0	2.0	3.5	300	- 20	+ 8	+ 9	610
6.8	T1	10	0605H	1.0	2.0	3.5	300	- 20	+ 8	+ 9	610
6.8	T1	5	0606H	1.0	2.0	3.5	300	- 20	+ 8	+ 9	610
15	T2	20	0607H	1.0	5.0	6	150	- 16	+ 8	+ 9	890
15	T2	10	0608H	1.0	5.0	6	150	- 16	+ 8	+ 9	890
15	T2	5	0609H	1.0	5.0	6	150	- 16	+ 8	+ 9	890
33	T2	20	0610H	1.0	10.0	10	90	- 24	+ 10.5	+ 15	1000
33	T2	10	0611H	1.0	10.0	10	90	- 24	+ 10.5	+ 15	1000
33	T2	5	0612H	1.0	10.0	10	90	- 24	+ 10.5	+ 15	1000
40	T3	20	0613H	2.0	12.0	9	60	- 16	+ 10.5	+ 12	1250
40	T3	10	0614H	2.0	12.0	9	60	- 16	+ 10.5	+ 12	1250
40	T3	5	0615H	2.0	12.0	9	60	- 16	+ 10.5	+ 12	1250
56	T3	20	0616H	2.0	17.0	11	60	- 28	+ 10.5	+ 15	1335
56	T3	10	0617H	2.0	17.0	11	60	- 28	+ 10.5	+ 15	1335
56	T3	5	0618H	2.0	17.0	11	60	- 28	+ 10.5	+ 15	1335
110	T4	20	0619H	9.0	36.0	12	29	- 35	+ 20	+ 20	1850
110	T4	10	0620H	9.0	36.0	12	29	- 35	+ 20	+ 20	1850
<b>100 V<sub>DC</sub> AT + 85 °C; 65 V<sub>DC</sub> AT + 125 °C</b>											
2.5	T1	20	0621H	1.0	2.0	2	950	- 16	+ 7	+ 8	505
2.5	T1	10	0622H	1.0	2.0	2	950	- 16	+ 7	+ 8	505
2.5	T1	5	0623H	1.0	2.0	2	950	- 16	+ 7	+ 8	505
4.7	T1	20	0624H	1.0	2.0	3	500	- 16	+ 7	+ 8	565
4.7	T1	10	0625H	1.0	2.0	3	500	- 16	+ 7	+ 8	565
4.7	T1	5	0626H	1.0	2.0	3	500	- 16	+ 7	+ 8	565
11	T2	20	0627H	1.0	4.0	5	200	- 16	+ 8	+ 8	835
11	T2	10	0628H	1.0	4.0	5	200	- 16	+ 8	+ 8	835
11	T2	5	0629H	1.0	4.0	5	200	- 16	+ 8	+ 8	835
22	T2	20	0630H	1.0	9.0	7.5	100	- 16	+ 8	+ 8	965
22	T2	10	0631H	1.0	9.0	7.5	100	- 16	+ 8	+ 8	965
22	T2	5	0632H	1.0	9.0	7.5	100	- 16	+ 8	+ 8	965
30	T3	20	0633H	2.0	12.0	7	80	- 16	+ 8	+ 8	1240
30	T3	10	0634H	2.0	12.0	7	80	- 16	+ 8	+ 8	1240
30	T3	5	0635H	2.0	12.0	7	80	- 16	+ 8	+ 8	1240
43	T3	20	0636H	2.0	17.0	8.5	70	- 20	+ 8	+ 8	1335
43	T3	10	0637H	2.0	17.0	8.5	70	- 20	+ 8	+ 8	1335
43	T3	5	0638H	2.0	17.0	8.5	70	- 20	+ 8	+ 8	1335
86	T4	20	0639H	9.0	36.0	10	30	- 25	+ 15	+ 15	1800
86	T4	10	0640H	9.0	36.0	10	30	- 25	+ 15	+ 15	1800

**Notes**

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) For ripple current limits at various temperatures, voltages and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06013											
CAPACITANCE ( $\mu$ F)	CASE CODE	CAP. TOL. ( $\pm$ %)	PIN FOR DSCC 06013 (1)	MAX. DCL ( $\mu$ A) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C ( $\Omega$ )	MAX. CAPACITANCE CHANGE (%) AT			MAX. RIPPLE CURRENT AT + 85 °C 40 kHz (mA) (2)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C	
125 V <sub>DC</sub> AT + 85 °C; 85 V <sub>DC</sub> AT + 125 °C											
1.7	T1	20	0641H	1.0	2.0	2	1250	- 16	+ 7	+ 8	415
1.7	T1	10	0642H	1.0	2.0	2	1250	- 16	+ 7	+ 8	415
1.7	T1	5	0643H	1.0	2.0	2	1250	- 16	+ 7	+ 8	415
3.6	T1	20	0644H	1.0	2.0	2.7	600	- 16	+ 7	+ 8	520
3.6	T1	10	0645H	1.0	2.0	2.7	600	- 16	+ 7	+ 8	520
3.6	T1	5	0646H	1.0	2.0	2.7	600	- 16	+ 7	+ 8	520
9.0	T2	20	0647H	1.0	5.0	5	240	- 16	+ 7	+ 8	755
9.0	T2	10	0648H	1.0	5.0	5	240	- 16	+ 7	+ 8	755
9.0	T2	5	0649H	1.0	5.0	5	240	- 16	+ 7	+ 8	755
14	T2	20	0650H	1.0	7.0	6	167	- 16	+ 7	+ 8	860
14	T2	10	0651H	1.0	7.0	6	167	- 16	+ 7	+ 8	860
14	T2	5	0652H	1.0	7.0	6	167	- 16	+ 7	+ 8	860
18	T3	20	0653H	2.0	9.0	5	129	- 16	+ 7	+ 8	1130
18	T3	10	0654H	2.0	9.0	5	129	- 16	+ 7	+ 8	1130
18	T3	5	0655H	2.0	9.0	5	129	- 16	+ 7	+ 8	1130
25	T3	20	0656H	2.0	13.0	6	93	- 16	+ 7	+ 8	1200
25	T3	10	0657H	2.0	13.0	6	93	- 16	+ 7	+ 8	1200
25	T3	5	0658H	2.0	13.0	6	93	- 16	+ 7	+ 8	1200
56	T4	20	0659H	10.0	40.0	6.5	32	- 25	+ 15	+ 15	1800
56	T4	10	0660H	10.0	40.0	6.5	32	- 25	+ 15	+ 15	1800

Notes

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) For ripple current limits at various temperatures, voltages and frequencies, see Ripple Current table.

STANDARD RATINGS: DSCC 06014											
CAPACITANCE ( $\mu$ F)	CASE CODE	CAP. TOL. ( $\pm$ %)	PIN FOR DSCC 06014 (1)	MAX. DCL ( $\mu$ A) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C ( $\Omega$ )	MAX. CAPACITANCE CHANGE (%) AT			MAX. RIPPLE CURRENT AT + 85 °C 40 kHz (mA) (2)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C	
6 V <sub>DC</sub> AT + 85 °C; 4 V <sub>DC</sub> AT + 125 °C											
220	T1	20	0177H	2.0	9.0	50	36	- 64	+ 13	+ 16	1000
220	T1	10	0178H	2.0	9.0	50	36	- 64	+ 13	+ 16	1000
820	T2	20	0179H	3.0	14.0	155	18	- 88	+ 16	+ 20	1500
820	T2	10	0180H	3.0	14.0	155	18	- 88	+ 16	+ 20	1500
1500	T3	20	0181H	5.0	20.0	172	18	- 90	+ 20	+ 25	1900
1500	T3	10	0182H	5.0	20.0	172	18	- 90	+ 20	+ 25	1900
2200	T4	20	0183H	6.0	24.0	170	13	- 90	+ 25	+ 30	2300
2200	T4	10	0184H	6.0	24.0	170	13	- 90	+ 25	+ 30	2300
8 V <sub>DC</sub> AT + 85 °C; 5 V <sub>DC</sub> AT + 125 °C											
180	T1	20	0185H	2.0	9.0	41	45	- 60	+ 13	+ 16	1000
180	T1	10	0186H	2.0	9.0	41	45	- 60	+ 13	+ 16	1000
680	T2	20	0187H	3.0	14.0	130	22	- 83	+ 16	+ 20	1500
680	T2	10	0188H	3.0	14.0	130	22	- 83	+ 16	+ 20	1500
1500	T3	20	0189H	5.0	20.0	170	18	- 90	+ 20	+ 25	1900
1500	T3	10	0190H	5.0	20.0	170	18	- 90	+ 20	+ 25	1900
1800	T4	20	0191H	7.0	25.0	138	14	- 90	+ 25	+ 30	2300
1800	T4	10	0192H	7.0	25.0	138	14	- 90	+ 25	+ 30	2300

Notes

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) For ripple current limits at various temperatures, voltages and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06014											
CAPACITANCE ( $\mu$ F)	CASE CODE	CAP. TOL. ( $\pm$ %)	PIN FOR DSCC 06014 (1)	MAX. DCL ( $\mu$ A) AT				MAX. CAPACITANCE CHANGE (%) AT			MAX. RIPPLE CURRENT AT + 85 °C 40 kHz (2)
						MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C ( $\Omega$ )				
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C	
<b>10 V<sub>DC</sub> AT + 85 °C; 7 V<sub>DC</sub> AT + 125 °C</b>											
150	T1	20	0193H	2.0	9.0	34	54	- 55	+ 13	+ 16	900
150	T1	10	0194H	2.0	9.0	34	54	- 55	+ 13	+ 16	900
560	T2	20	0195H	3.0	16.0	106	27	- 77	+ 16	+ 20	1450
560	T2	10	0196H	3.0	16.0	106	27	- 77	+ 16	+ 20	1450
1200	T3	20	0197H	5.0	20.0	137	18	- 88	+ 20	+ 25	1850
1200	T3	10	0198H	5.0	20.0	137	18	- 88	+ 20	+ 25	1850
1500	T4	20	0199H	7.0	25.0	114	15	- 88	+ 25	+ 30	2300
1500	T4	10	0200H	7.0	25.0	114	15	- 88	+ 25	+ 30	2300
<b>15 V<sub>DC</sub> AT + 85 °C; 10 V<sub>DC</sub> AT + 125 °C</b>											
100	T1	20	0201H	2.0	9.0	30	72	- 44	+ 13	+ 16	900
100	T1	10	0202H	2.0	9.0	30	72	- 44	+ 13	+ 16	900
390	T2	20	0203H	3.0	16.0	74	31	- 66	+ 16	+ 20	1450
390	T2	10	0204H	3.0	16.0	74	31	- 66	+ 16	+ 20	1450
820	T3	20	0205H	6.0	24.0	111	22	- 77	+ 20	+ 25	1800
820	T3	10	0206H	6.0	24.0	111	22	- 77	+ 20	+ 25	1800
1000	T4	20	0207H	8.0	32.0	92	17	- 77	+ 25	+ 30	2300
1000	T4	10	0208H	8.0	32.0	92	17	- 77	+ 25	+ 30	2300
<b>25 V<sub>DC</sub> AT + 85 °C; 15 V<sub>DC</sub> AT + 125 °C</b>											
68	T1	20	0209H	2.0	9.0	22	90	- 40	+ 12	+ 15	850
68	T1	10	0210H	2.0	9.0	22	90	- 40	+ 12	+ 15	850
270	T2	20	0211H	3.0	16.0	55	33	- 62	+ 13	+ 16	1400
270	T2	10	0212H	3.0	16.0	55	33	- 62	+ 13	+ 16	1400
560	T3	20	0213H	7.0	28.0	76	24	- 72	+ 20	+ 25	1750
560	T3	10	0214H	7.0	28.0	76	24	- 72	+ 20	+ 25	1750
680	T4	20	0215H	8.0	32.0	63	19	- 72	+ 25	+ 30	2100
680	T4	10	0216H	8.0	32.0	63	19	- 72	+ 25	+ 30	2100
<b>30 V<sub>DC</sub> AT + 85 °C; 20 V<sub>DC</sub> AT + 125 °C</b>											
56	T1	20	0217H	2.0	9.0	22	100	- 38	+ 12	+ 15	800
56	T1	10	0218H	2.0	9.0	22	100	- 38	+ 12	+ 15	800
220	T2	20	0219H	3.0	16.0	42	36	- 60	+ 13	+ 16	1200
220	T2	10	0220H	3.0	16.0	42	36	- 60	+ 13	+ 16	1200
470	T3	20	0221H	8.0	32.0	64	25	- 65	+ 20	+ 25	1500
470	T3	10	0222H	8.0	32.0	64	25	- 65	+ 20	+ 25	1500
560	T4	20	0223H	9.0	36.0	55	20	- 65	+ 25	+ 30	2000
560	T4	10	0224H	9.0	36.0	55	20	- 65	+ 25	+ 30	2000
<b>50 V<sub>DC</sub> AT + 85 °C; 30 V<sub>DC</sub> AT + 125 °C</b>											
33	T1	20	0225H	2.0	9.0	12.3	135	- 29	+ 10	+ 12	700
33	T1	10	0226H	2.0	9.0	12.3	135	- 29	+ 10	+ 12	700
120	T2	20	0227H	4.0	24.0	22.5	49	- 42	+ 12	+ 15	1200
120	T2	10	0228H	4.0	24.0	22.5	49	- 42	+ 12	+ 15	1200
270	T3	20	0229H	8.0	32.0	37	29	- 46	+ 20	+ 25	1450
270	T3	10	0230H	8.0	32.0	37	29	- 46	+ 20	+ 25	1450
330	T4	20	0231H	9.0	36.0	38	22	- 46	+ 25	+ 30	1900
330	T4	10	0232H	9.0	36.0	38	22	- 46	+ 25	+ 30	1900
<b>60 V<sub>DC</sub> AT + 85 °C; 40 V<sub>DC</sub> AT + 125 °C</b>											
27	T1	20	0233H	3.0	12.0	10.2	144	- 24	+ 10	+ 12	700
27	T1	10	0234H	3.0	12.0	10.2	144	- 24	+ 10	+ 12	700
100	T2	20	0235H	4.0	20.0	19	54	- 36	+ 12	+ 15	1100
100	T2	10	0236H	4.0	20.0	19	54	- 36	+ 12	+ 15	1100
220	T3	20	0237H	8.0	32.0	30	29	- 40	+ 16	+ 20	1400
220	T3	10	0238H	8.0	32.0	30	29	- 40	+ 16	+ 20	1400
270	T4	20	0239H	9.0	36.0	27	23	- 45	+ 20	+ 25	1850
270	T4	10	0240H	9.0	36.0	27	23	- 45	+ 20	+ 25	1850

**Notes**

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) For ripple current limits at various temperatures, voltages and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06014											
CAPACITANCE ( $\mu$ F)	CASE CODE	CAP. TOL. ( $\pm$ %)	PIN FOR DSCC 06014 (1)	MAX. DCL ( $\mu$ A) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C ( $\Omega$ )	MAX. CAPACITANCE CHANGE (%) AT			MAX. RIPPLE CURRENT AT + 85 °C 40 kHz (mA) (2)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C	
<b>75 V<sub>DC</sub> AT + 85 °C; 50 V<sub>DC</sub> AT + 125 °C</b>											
22	T1	20	0241H	3.0	12.0	8.5	157	- 19	+ 10	+ 12	600
22	T1	10	0242H	3.0	12.0	8.5	157	- 19	+ 10	+ 12	600
82	T2	20	0243H	4.0	24.0	15.2	63	- 30	+ 12	+ 15	1000
82	T2	10	0244H	4.0	24.0	15.2	63	- 30	+ 12	+ 15	1000
180	T3	20	0245H	9.0	36.0	24.4	30	- 35	+ 16	+ 20	1300
180	T3	10	0246H	9.0	36.0	24.4	30	- 35	+ 16	+ 20	1300
220	T4	20	0247H	10.0	40.0	37.0	24	- 40	+ 20	+ 25	1800
220	T4	10	0248H	10.0	40.0	37.0	24	- 40	+ 20	+ 25	1800
<b>100 V<sub>DC</sub> AT + 85 °C; 65 V<sub>DC</sub> AT + 125 °C</b>											
10	T1	20	0249H	3.0	12.0	4.5	200	- 17	+ 10	+ 12	800
10	T1	10	0250H	3.0	12.0	4.5	200	- 17	+ 10	+ 12	800
39	T2	20	0251H	5.0	24.0	10.4	80	- 20	+ 12	+ 15	1300
39	T2	10	0252H	5.0	24.0	10.4	80	- 20	+ 12	+ 15	1300
68	T3	20	0253H	10.0	40.0	11.3	40	- 30	+ 14	+ 16	1600
68	T3	10	0254H	10.0	40.0	11.3	40	- 30	+ 14	+ 16	1600
120	T4	20	0255H	12.0	48.0	25	30	- 35	+ 15	+ 17	2000
120	T4	10	0256H	12.0	48.0	25	30	- 35	+ 15	+ 17	2000
<b>125 V<sub>DC</sub> AT + 85 °C; 85 V<sub>DC</sub> AT + 125 °C</b>											
6.8	T1	20	0257H	3.0	12.0	6.0	300	- 14	+ 10	+ 12	700
6.8	T1	10	0258H	3.0	12.0	6.0	300	- 14	+ 10	+ 12	700
27	T2	20	0259H	5.0	24.0	7.2	90	- 18	+ 12	+ 15	1200
27	T2	10	0260H	5.0	24.0	7.2	90	- 18	+ 12	+ 15	1200
47	T3	20	0261H	10.0	40.0	7.9	50	- 26	+ 14	+ 16	1500
47	T3	10	0262H	10.0	40.0	7.9	50	- 26	+ 14	+ 16	1500
82	T4	20	0263H	12.0	48.0	17.4	32	- 30	+ 15	+ 17	1900
82	T4	10	0264H	12.0	48.0	17.4	32	- 30	+ 15	+ 17	1900

**Notes**

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) For ripple current limits at various temperatures, voltages and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06015												
CAPACITANCE (μF)	CASE CODE	CAP. TOL. (± %)	PIN FOR DSCC 06015 (1)	MAX. DCL (μA) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C (Ω)	MAX. CAPACITANCE CHANGE (%) AT			MAX. ESR AT + 25 °C 120 Hz (Ω) (2)	MAX. RIPPLE CURRENT AT 85 °C 40 kHz 3 mA RMS (3)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C		
<b>6 V<sub>DC</sub> AT + 85 °C; 4 V<sub>DC</sub> AT + 125 °C</b>												
30	T1	20	0441H	1.0	2.0	4.5	100	- 40	+ 10.5	+ 12	1.99	820
30	T1	10	0442H	1.0	2.0	4.5	100	- 40	+ 10.5	+ 12	1.99	820
30	T1	5	0443H	1.0	2.0	4.5	100	- 40	+ 10.5	+ 12	1.99	820
68	T1	20	0444H	1.0	2.0	7.5	60	- 40	+ 14	+ 16	1.58	960
68	T1	10	0445H	1.0	2.0	7.5	60	- 40	+ 14	+ 16	1.58	960
68	T1	5	0446H	1.0	2.0	7.5	60	- 40	+ 14	+ 16	1.58	960
140	T2	20	0447H	1.0	3.0	10.5	40	- 40	+ 14	+ 16	0.99	1200
140	T2	10	0448H	1.0	3.0	10.5	40	- 40	+ 14	+ 16	0.99	1200
140	T2	5	0449H	1.0	3.0	10.5	40	- 40	+ 14	+ 16	0.99	1200
270	T2	20	0450H	1.0	6.5	22.5	25	- 44	+ 17.5	+ 20	1.11	1375
270	T2	10	0451H	1.0	6.5	22.5	25	- 44	+ 17.5	+ 20	1.11	1375
270	T2	5	0452H	1.0	6.5	22.5	25	- 44	+ 17.5	+ 20	1.11	1375
330	T3	20	0453H	2.0	7.9	18.0	20	- 44	+ 14	+ 16	0.73	1800
330	T3	10	0454H	2.0	7.9	18.0	20	- 44	+ 14	+ 16	0.73	1800
330	T3	5	0455H	2.0	7.9	18.0	20	- 44	+ 14	+ 16	0.73	1800
560	T3	20	0456H	2.0	13.0	27.5	25	- 64	+ 17.5	+ 20	0.65	1900
560	T3	10	0457H	2.0	13.0	27.5	25	- 64	+ 17.5	+ 20	0.65	1900
560	T3	5	0458H	2.0	13.0	27.5	25	- 64	+ 17.5	+ 20	0.65	1900
1200	T4	20	0459H	3.0	14.0	45.0	20	- 80	+ 25	+ 25	0.50	2265
1200	T4	10	0460H	3.0	14.0	45.0	20	- 80	+ 25	+ 25	0.50	2265
<b>8 V<sub>DC</sub> AT + 85 °C; 5 V<sub>DC</sub> AT + 125 °C</b>												
25	T1	20	0461H	1.0	2.0	3.75	100	- 40	+ 10.5	+ 12	1.99	820
25	T1	10	0462H	1.0	2.0	3.75	100	- 40	+ 10.5	+ 12	1.99	820
25	T1	5	0463H	1.0	2.0	3.75	100	- 40	+ 10.5	+ 12	1.99	820
56	T1	20	0464H	1.0	2.0	7.0	59	- 40	+ 14	+ 16	1.66	900
56	T1	10	0465H	1.0	2.0	7.0	59	- 40	+ 14	+ 16	1.66	900
56	T1	5	0466H	1.0	2.0	7.0	59	- 40	+ 14	+ 16	1.66	900
120	T2	20	0467H	1.0	2.0	10.0	50	- 44	+ 17.5	+ 20	1.11	1220
120	T2	10	0468H	1.0	2.0	10.0	50	- 44	+ 17.5	+ 20	1.11	1220
120	T2	5	0469H	1.0	2.0	10.0	50	- 44	+ 17.5	+ 20	1.11	1220
220	T2	20	0470H	1.0	7.0	18.5	30	- 44	+ 17.5	+ 20	1.12	1370
220	T2	10	0471H	1.0	7.0	18.5	30	- 44	+ 17.5	+ 20	1.12	1370
220	T2	5	0472H	1.0	7.0	18.5	30	- 44	+ 17.5	+ 20	1.12	1370
290	T3	20	0473H	2.0	6.0	17.0	25	- 64	+ 17.5	+ 20	0.78	1770
290	T3	10	0474H	2.0	6.0	17.0	25	- 64	+ 17.5	+ 20	0.78	1770
290	T3	5	0475H	2.0	6.0	17.0	25	- 64	+ 17.5	+ 20	0.78	1770
430	T3	20	0476H	2.0	14.0	23.0	25	- 64	+ 17.5	+ 20	0.71	1825
430	T3	10	0477H	2.0	14.0	23.0	25	- 64	+ 17.5	+ 20	0.71	1825
430	T3	5	0478H	2.0	14.0	23.0	25	- 64	+ 17.5	+ 20	0.71	1825
850	T4	20	0479H	4.0	16.0	30.0	22	- 80	+ 25	+ 25	0.47	2330
850	T4	10	0480H	4.0	16.0	30.0	22	- 80	+ 25	+ 25	0.47	2330

**Notes**

(1) Dash number will include the letter “H” to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).

(2) Maximum ESR is calculated by the following equation:

$$ESR (max.) = \frac{DF}{2\pi f C}, \text{ where}$$

DF = Maximum dissipation factor from Standard Ratings table

f = 120 Hz

C = Nominal capacitance

(3) For ripple current limits at various temperatures, voltages, and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06015												
CAPACITANCE (μF)	CASE CODE	CAP. TOL. (± %)	PIN FOR DSCC 06015 (1)	MAX. DCL (μA) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C (Ω)	MAX. CAPACITANCE CHANGE (%) AT			MAX. ESR AT + 25 °C 120 Hz (Ω) (2)	MAX. RIPPLE CURRENT AT 85 °C 40 kHz 3 mA RMS (3)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C		
<b>10 V<sub>DC</sub> AT + 85 °C; 7 V<sub>DC</sub> AT + 125 °C</b>												
20	T1	20	0481H	1.0	2.0	3.0	175	- 32	+ 10.5	+ 12	1.99	820
20	T1	10	0482H	1.0	2.0	3.0	175	- 32	+ 10.5	+ 12	1.99	820
20	T1	5	0483H	1.0	2.0	3.0	175	- 32	+ 10.5	+ 12	1.99	820
47	T1	20	0484H	1.0	2.0	6.5	100	- 36	+ 14	+ 16	1.84	855
47	T1	10	0485H	1.0	2.0	6.5	100	- 36	+ 14	+ 16	1.84	855
47	T1	5	0486H	1.0	2.0	6.5	100	- 36	+ 14	+ 16	1.84	855
100	T2	20	0487H	1.0	4.0	7.5	60	- 36	+ 14	+ 16	0.99	1200
100	T2	10	0488H	1.0	4.0	7.5	60	- 36	+ 14	+ 16	0.99	1200
100	T2	5	0489H	1.0	4.0	7.5	60	- 36	+ 14	+ 16	0.99	1200
180	T2	20	0490H	1.0	7.0	15.0	40	- 36	+ 14	+ 16	1.11	1365
180	T2	10	0491H	1.0	7.0	15.0	40	- 36	+ 14	+ 16	1.11	1365
180	T2	5	0492H	1.0	7.0	15.0	40	- 36	+ 14	+ 16	1.11	1365
250	T3	20	0493H	2.0	10.0	15.0	30	- 40	+ 14	+ 16	0.80	1720
250	T3	10	0494H	2.0	10.0	15.0	30	- 40	+ 14	+ 16	0.80	1720
250	T3	5	0495H	2.0	10.0	15.0	30	- 40	+ 14	+ 16	0.80	1720
390	T3	20	0496H	2.0	16.0	22.0	25	- 64	+ 17.5	+ 20	0.75	1800
390	T3	10	0497H	2.0	16.0	22.0	25	- 64	+ 17.5	+ 20	0.75	1800
390	T3	5	0498H	2.0	16.0	22.0	25	- 64	+ 17.5	+ 20	0.75	1800
750	T4	20	0499H	4.0	16.0	25.0	23	- 80	+ 25	+ 25	0.44	2360
750	T4	10	0500H	4.0	16.0	25.0	23	- 80	+ 25	+ 25	0.44	2360
<b>15 V<sub>DC</sub> AT + 85 °C; 10 V<sub>DC</sub> AT + 125 °C</b>												
15	T1	20	0501H	1.0	2.0	2.5	155	- 24	+ 10.5	+ 12	1.99	780
15	T1	10	0502H	1.0	2.0	2.5	155	- 24	+ 10.5	+ 12	1.99	780
15	T1	5	0503H	1.0	2.0	2.5	155	- 24	+ 10.5	+ 12	1.99	780
33	T1	20	0504H	1.0	2.0	5.0	90	- 28	+ 14	+ 16	1.66	820
33	T1	10	0505H	1.0	2.0	5.0	90	- 28	+ 14	+ 16	1.66	820
33	T1	5	0506H	1.0	2.0	5.0	90	- 28	+ 14	+ 16	1.66	820
70	T2	20	0507H	1.0	4.0	6.5	75	- 28	+ 14	+ 16	1.11	1150
70	T2	10	0508H	1.0	4.0	6.5	75	- 28	+ 14	+ 16	1.11	1150
70	T2	5	0509H	1.0	4.0	6.5	75	- 28	+ 14	+ 16	1.11	1150
120	T2	20	0510H	1.0	7.0	9.0	50	- 28	+ 17.5	+ 20	1.12	1450
120	T2	10	0511H	1.0	7.0	9.0	50	- 28	+ 17.5	+ 20	1.12	1450
120	T2	5	0512H	1.0	7.0	9.0	50	- 28	+ 17.5	+ 20	1.12	1450
170	T3	20	0513H	2.0	10.0	12.5	35	- 32	+ 14	+ 16	0.78	1480
170	T3	10	0514H	2.0	10.0	12.5	35	- 32	+ 14	+ 16	0.78	1480
170	T3	5	0515H	2.0	10.0	12.5	35	- 32	+ 14	+ 16	0.78	1480
270	T3	20	0516H	2.0	16.0	16.0	30	- 56	+ 17.5	+ 20	0.71	1740
270	T3	10	0517H	2.0	16.0	16.0	30	- 56	+ 17.5	+ 20	0.71	1740
270	T3	5	0518H	2.0	16.0	16.0	30	- 56	+ 17.5	+ 20	0.71	1740
540	T4	20	0519 H	6.0	24.0	20.0	23	- 80	+ 25	+ 25	0.47	2330
540	T4	10	0520H	6.0	24.0	20.0	23	- 80	+ 25	+ 25	0.47	2330

**Notes**

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) Maximum ESR is calculated by the following equation:  

$$ESR (max.) = \frac{DF}{2\pi f C}$$
 where  
 DF = Maximum dissipation factor from Standard Ratings table  
 f = 120 Hz  
 C = Nominal capacitance
- (3) For ripple current limits at various temperatures, voltages, and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06015													
CAPACITANCE (μF)	CASE CODE	CAP. TOL. (± %)	PIN FOR DSCC 06015 (1)	MAX. DCL (μA) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C (Ω)	MAX. CAPACITANCE CHANGE (%) AT			MAX. ESR AT + 25 °C 120 Hz (Ω) (2)	MAX. RIPPLE CURRENT AT 85 °C 40 kHz 3 mA RMS (3)	
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C			
<b>25 V<sub>DC</sub> AT + 85 °C; 15 V<sub>DC</sub> AT + 125 °C</b>													
10	T1	20	0521H	1.0	2.0	2.0	220	- 16	+ 8	+ 9	2.66	715	
10	T1	10	0522H	1.0	2.0	2.0	220	- 16	+ 8	+ 9	2.66	715	
10	T1	5	0523H	1.0	2.0	2.0	220	- 16	+ 8	+ 9	2.66	715	
22	T1	20	0524H	1.0	2.0	3.3	140	- 20	+ 10.5	+ 12	1.99	825	
22	T1	10	0525H	1.0	2.0	3.3	140	- 20	+ 10.5	+ 12	1.99	825	
22	T1	5	0526H	1.0	2.0	3.3	140	- 20	+ 10.5	+ 12	1.99	825	
50	T2	20	0527H	1.0	2.0	5.5	70	- 28	+ 13	+ 15	1.46	1130	
50	T2	10	0528H	1.0	2.0	5.5	70	- 28	+ 13	+ 15	1.46	1130	
50	T2	5	0529H	1.0	2.0	5.5	70	- 28	+ 13	+ 15	1.46	1130	
100	T2	20	0530H	1.0	10.0	7.5	50	- 28	+ 13	+ 15	0.99	1435	
100	T2	10	0531H	1.0	10.0	7.5	50	- 28	+ 13	+ 15	0.99	1435	
100	T2	5	0532H	1.0	10.0	7.5	50	- 28	+ 13	+ 15	0.99	1435	
120	T3	20	0533H	2.0	6.0	10.5	38	- 32	+ 13	+ 15	1.16	1450	
120	T3	10	0534H	2.0	6.0	10.5	38	- 32	+ 13	+ 15	1.16	1450	
120	T3	5	0535H	2.0	6.0	10.5	38	- 32	+ 13	+ 15	1.16	1450	
180	T3	20	0536H	2.0	18.0	13.0	32	- 48	+ 13	+ 15	0.96	1525	
180	T3	10	0537H	2.0	18.0	13.0	32	- 48	+ 13	+ 15	0.96	1525	
180	T3	5	0538H	2.0	18.0	13.0	32	- 48	+ 13	+ 15	0.96	1525	
350	T4	20	0539H	7.0	28.0	17.5	24	- 70	+ 25	+ 25	0.67	1970	
350	T4	10	0540H	7.0	28.0	17.5	24	- 70	+ 25	+ 25	0.67	1970	
<b>30 V<sub>DC</sub> AT + 85 °C; 20 V<sub>DC</sub> AT + 125 °C</b>													
8	T1	20	0541H	1.0	2.0	2.0	275	- 16	+ 8	+ 12	3.32	640	
8	T1	10	0542H	1.0	2.0	2.0	275	- 16	+ 8	+ 12	3.32	640	
8	T1	5	0543H	1.0	2.0	2.0	275	- 16	+ 8	+ 12	3.32	640	
15	T1	20	0544H	1.0	2.0	2.5	175	- 20	+ 10.5	+ 12	2.21	780	
15	T1	10	0545H	1.0	2.0	2.5	175	- 20	+ 10.5	+ 12	2.21	780	
15	T1	5	0546H	1.0	2.0	2.5	175	- 20	+ 10.5	+ 12	2.21	780	
40	T2	20	0547H	1.0	5.0	5.0	65	- 24	+ 10.5	+ 12	1.66	1120	
40	T2	10	0548H	1.0	5.0	5.0	65	- 24	+ 10.5	+ 12	0.66	1120	
40	T2	5	0549H	1.0	5.0	5.0	65	- 24	+ 10.5	+ 12	0.66	1120	
68	T2	20	0550H	1.0	8.0	6.5	60	- 24	+ 13	+ 15	1.27	1285	
68	T2	10	0551H	1.0	8.0	6.5	60	- 24	+ 13	+ 15	1.27	1285	
68	T2	5	0552H	1.0	8.0	6.5	60	- 24	+ 13	+ 15	1.27	1285	
100	T3	20	0553H	2.0	12.0	8.5	40	- 28	+ 10.5	+ 12	1.13	1450	
100	T3	10	0554H	2.0	12.0	8.5	40	- 28	+ 10.5	+ 12	1.13	1450	
100	T3	5	0555H	2.0	12.0	8.5	40	- 28	+ 10.5	+ 12	1.13	1450	
150	T3	20	0556H	2.0	18.0	11.5	35	- 48	+ 13	+ 15	1.02	1525	
150	T3	10	0557H	2.0	18.0	11.5	35	- 48	+ 13	+ 15	1.02	1525	
150	T3	5	0558H	2.0	18.0	11.5	35	- 48	+ 13	+ 15	1.02	1525	
300	T4	20	0559H	8.0	32.0	15.5	25	- 60	+ 25	+ 25	0.69	1950	
300	T4	10	0560H	8.0	32.0	15.5	25	- 60	+ 25	+ 25	0.69	1950	

**Notes**

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) Maximum ESR is calculated by the following equation:  

$$ESR (max.) = \frac{DF}{2\pi f C}$$
 where  
 DF = Maximum dissipation factor from Standard Ratings table  
 f = 120 Hz  
 C = Nominal capacitance
- (3) For ripple current limits at various temperatures, voltages, and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06015													
CAPACITANCE (μF)	CASE CODE	CAP. TOL. (± %)	PIN FOR DSCC 06015 (1)	MAX. DCL (μA) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C (Ω)	MAX. CAPACITANCE CHANGE (%) AT			MAX. ESR AT + 25 °C 120 Hz (Ω) (2)	MAX. RIPPLE CURRENT AT 85 °C 40 kHz 3 mA RMS (3)	
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C			
<b>50 V<sub>DC</sub> AT + 85 °C; 30 V<sub>DC</sub> AT + 125 °C</b>													
5	T1	20	0561H	1.0	2.0	1.5	400	- 16	+ 5	+ 6	3.98	580	
5	T1	10	0562H	1.0	2.0	1.5	400	- 16	+ 5	+ 6	3.98	580	
5	T1	5	0563H	1.0	2.0	1.5	400	- 16	+ 5	+ 6	3.98	580	
10	T1	20	0564H	1.0	2.0	2.0	250	- 24	+ 8	+ 9	2.66	715	
10	T1	10	0565H	1.0	2.0	2.0	250	- 24	+ 8	+ 9	2.66	715	
10	T1	5	0566H	1.0	2.0	2.0	250	- 24	+ 8	+ 9	2.66	715	
25	T2	20	0567H	1.0	5.0	4.0	95	- 20	+ 10.5	+ 12	2.13	1005	
25	T2	10	0568H	1.0	5.0	4.0	95	- 20	+ 10.5	+ 12	2.13	1005	
25	T2	5	0569H	1.0	5.0	4.0	95	- 20	+ 10.5	+ 12	2.13	1005	
47	T2	20	0570H	1.0	9.0	5.0	70	- 28	+ 13	+ 15	1.56	1155	
47	T2	10	0571H	1.0	9.0	5.0	70	- 28	+ 13	+ 15	1.56	1155	
47	T2	5	0572H	1.0	9.0	5.0	70	- 28	+ 13	+ 15	1.56	1155	
60	T3	20	0573H	2.0	12.0	6.0	45	- 16	+ 10.5	+ 12	1.33	1335	
60	T3	10	0574H	2.0	12.0	6.0	45	- 16	+ 10.5	+ 12	1.33	1335	
60	T3	5	0575H	2.0	12.0	6.0	45	- 16	+ 10.5	+ 12	1.33	1335	
82	T3	20	0576H	2.0	16.0	7.5	45	- 32	+ 13	+ 15	1.22	1400	
82	T3	10	0577H	2.0	16.0	7.5	45	- 32	+ 13	+ 15	1.22	1400	
82	T3	5	0578H	2.0	16.0	7.5	45	- 32	+ 13	+ 15	1.22	1400	
160	T4	20	0579H	6.0	32.0	8.5	27	- 50	+ 25	+ 25	0.71	1900	
160	T4	10	0580H	6.0	32.0	8.5	27	- 50	+ 25	+ 25	0.71	1900	
<b>60 V<sub>DC</sub> AT + 85 °C; 40 V<sub>DC</sub> AT + 125 °C</b>													
4	T1	20	0581H	1.0	2.0	1.4	550	- 16	+ 5	+ 6	4.65	525	
4	T1	10	0582H	1.0	2.0	1.4	550	- 16	+ 5	+ 6	4.65	525	
4	T1	5	0583H	1.0	2.0	1.4	550	- 16	+ 5	+ 6	4.65	525	
8.2	T1	20	0584H	1.0	2.0	2.0	275	- 24	+ 8	+ 9	3.24	625	
8.2	T1	10	0585H	1.0	2.0	2.0	275	- 24	+ 8	+ 9	3.24	625	
8.2	T1	5	0586H	1.0	2.0	2.0	275	- 24	+ 8	+ 9	3.24	625	
20	T2	20	0587H	1.0	5.0	3.5	105	- 16	+ 10.5	+ 12	2.32	930	
20	T2	10	0588H	1.0	5.0	3.5	105	- 16	+ 10.5	+ 12	2.32	930	
20	T2	5	0589H	1.0	5.0	3.5	105	- 16	+ 10.5	+ 12	2.32	930	
39	T2	20	0590H	1.0	9.0	5.0	90	- 28	+ 10.5	+ 12	1.70	1110	
39	T2	10	0591H	1.0	9.0	5.0	90	- 28	+ 10.5	+ 12	1.70	1110	
39	T2	5	0592H	1.0	9.0	5.0	90	- 28	+ 10.5	+ 12	1.70	1110	
50	T3	20	0593H	2.0	12.0	5.0	50	- 16	+ 10.5	+ 12	1.33	1330	
50	T3	10	0594H	2.0	12.0	5.0	50	- 16	+ 10.5	+ 12	1.33	1330	
50	T3	5	0595H	2.0	12.0	5.0	50	- 16	+ 10.5	+ 12	1.33	1330	
68	T3	20	0596H	2.0	16.0	6.5	50	- 32	+ 10.5	+ 12	1.27	1365	
68	T3	10	0597H	2.0	16.0	6.5	50	- 32	+ 10.5	+ 12	1.27	1365	
68	T3	5	0598H	2.0	16.0	6.5	50	- 32	+ 10.5	+ 12	1.27	1365	
140	T4	20	0599H	8.0	32.0	8.0	28	- 40	+ 20	+ 20	0.76	1850	
140	T4	10	0600H	8.0	32.0	8.0	28	- 40	+ 20	+ 20	0.76	1850	

**Notes**

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) Maximum ESR is calculated by the following equation:  

$$ESR (max.) = \frac{DF}{2\pi f C}$$
 where  
 DF = Maximum dissipation factor from Standard Ratings table  
 f = 120 Hz  
 C = Nominal capacitance
- (3) For ripple current limits at various temperatures, voltages, and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06015													
CAPACITANCE (μF)	CASE CODE	CAP. TOL. (± %)	PIN FOR DSCC 06015 (1)	MAX. DCL (μA) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C (Ω)	MAX. CAPACITANCE CHANGE (%) AT			MAX. ESR AT + 25 °C 120 Hz (Ω) (2)	MAX. RIPPLE CURRENT AT 85 °C 40 kHz 3 mA RMS (3)	
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C			
<b>75 V<sub>DC</sub> AT + 85 °C; 50 V<sub>DC</sub> AT + 125 °C</b>													
3.5	T1	20	0601H	1.0	2.0	1.25	650	- 16	+ 5	+ 6	4.74	525	
3.5	T1	10	0602H	1.0	2.0	1.25	650	- 16	+ 5	+ 6	4.74	525	
3.5	T1	5	0603H	1.0	2.0	1.25	650	- 16	+ 5	+ 6	4.74	525	
6.8	T1	20	0604H	1.0	2.0	1.75	300	- 20	+ 8	+ 9	3.42	610	
6.8	T1	10	0605H	1.0	2.0	1.75	300	- 20	+ 8	+ 9	3.42	610	
6.8	T1	5	0606H	1.0	2.0	1.75	300	- 20	+ 8	+ 9	3.42	610	
15	T2	20	0607H	1.0	5.0	3.0	150	- 16	+ 8	+ 9	2.66	890	
15	T2	10	0608H	1.0	5.0	3.0	150	- 16	+ 8	+ 9	2.66	890	
15	T2	5	0609H	1.0	5.0	3.0	150	- 16	+ 8	+ 9	2.66	890	
33	T2	20	0610H	1.0	10.0	5.0	90	- 24	+ 10.5	+ 15	2.01	1000	
33	T2	10	0611H	1.0	10.0	5.0	90	- 24	+ 10.5	+ 15	2.01	1000	
33	T2	5	0612H	1.0	10.0	5.0	90	- 24	+ 10.5	+ 15	2.01	1000	
40	T3	20	0613H	2.0	12.0	4.5	60	- 16	+ 10.5	+ 12	1.50	1250	
40	T3	10	0614H	2.0	12.0	4.5	60	- 16	+ 10.5	+ 12	1.50	1250	
40	T3	5	0615H	2.0	12.0	4.5	60	- 16	+ 10.5	+ 12	1.50	1250	
56	T3	20	0616H	2.0	17.0	5.5	60	- 28	+ 10.5	+ 15	1.31	1335	
56	T3	10	0617H	2.0	17.0	5.5	60	- 28	+ 10.5	+ 15	1.31	1335	
56	T3	5	0618H	2.0	17.0	5.5	60	- 28	+ 10.5	+ 15	1.31	1335	
110	T4	20	0619H	9.0	36.0	6.0	29	- 35	+ 20	+ 20	0.73	1850	
110	T4	10	0620H	9.0	36.0	6.0	29	- 35	+ 20	+ 20	0.73	1850	
<b>100 V<sub>DC</sub> AT + 85 °C; 65 V<sub>DC</sub> AT + 125 °C</b>													
2.5	T1	20	0621H	1.0	2.0	1.0	950	- 16	+ 7	+ 8	5.31	505	
2.5	T1	10	0622H	1.0	2.0	1.0	950	- 16	+ 7	+ 8	5.31	505	
2.5	T1	5	0623H	1.0	2.0	1.0	950	- 16	+ 7	+ 8	5.31	505	
4.7	T1	20	0624H	1.0	2.0	1.5	500	- 16	+ 7	+ 8	4.24	565	
4.7	T1	10	0625H	1.0	2.0	1.5	500	- 16	+ 7	+ 8	4.24	565	
4.7	T1	5	0626H	1.0	2.0	1.5	500	- 16	+ 7	+ 8	4.24	565	
11	T2	20	0627H	1.0	4.0	2.5	200	- 16	+ 8	+ 8	3.02	835	
11	T2	10	0628H	1.0	4.0	2.5	200	- 16	+ 8	+ 8	3.02	835	
11	T2	5	0629H	1.0	4.0	2.5	200	- 16	+ 8	+ 8	3.02	835	
22	T2	20	0630H	1.0	9.0	3.75	100	- 16	+ 8	+ 8	2.26	965	
22	T2	10	0631H	1.0	9.0	3.75	100	- 16	+ 8	+ 8	2.26	965	
22	T2	5	0632H	1.0	9.0	3.75	100	- 16	+ 8	+ 8	2.26	965	
30	T3	20	0633H	2.0	12.0	3.5	80	- 16	+ 8	+ 8	1.55	1240	
30	T3	10	0634H	2.0	12.0	3.5	80	- 16	+ 8	+ 8	1.55	1240	
30	T3	5	0635H	2.0	12.0	3.5	80	- 16	+ 8	+ 8	1.55	1240	
43	T3	20	0636H	2.0	17.0	4.25	70	- 20	+ 8	+ 8	1.31	1335	
43	T3	10	0637H	2.0	17.0	4.25	70	- 20	+ 8	+ 8	1.31	1335	
43	T3	5	0638H	2.0	17.0	4.25	70	- 20	+ 8	+ 8	1.31	1335	
86	T4	20	0639H	9.0	36.0	5.0	30	- 25	+ 15	+ 15	0.77	1800	
86	T4	10	0640H	9.0	36.0	5.0	30	- 25	+ 15	+ 15	0.77	1800	

**Notes**

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) Maximum ESR is calculated by the following equation:  

$$ESR (max.) = \frac{DF}{2\pi f C}$$
 where  
 DF = Maximum dissipation factor from Standard Ratings table  
 f = 120 Hz  
 C = Nominal capacitance
- (3) For ripple current limits at various temperatures, voltages, and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06015												
CAPACITANCE ( $\mu$ F)	CASE CODE	CAP. TOL. ( $\pm$ %)	PIN FOR DSCC 06015 (1)	MAX. DCL ( $\mu$ A) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C ( $\Omega$ )	MAX. CAPACITANCE CHANGE (%) AT			MAX. ESR AT + 25 °C 120 Hz ( $\Omega$ ) (2)	MAX. RIPPLE CURRENT AT 85 °C 40 kHz 3 mA RMS (3)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C		
125 V <sub>DC</sub> AT + 85 °C; 85 V <sub>DC</sub> AT + 125 °C												
1.7	T1	20	0641H	1.0	2.0	1.0	1250	- 16	+ 7	+ 8	7.81	415
1.7	T1	10	0642H	1.0	2.0	1.0	1250	- 16	+ 7	+ 8	7.81	415
1.7	T1	5	0643H	1.0	2.0	1.0	1250	- 16	+ 7	+ 8	7.81	415
3.6	T1	20	0644H	1.0	2.0	1.35	600	- 24	+ 7	+ 8	4.98	520
3.6	T1	10	0645H	1.0	2.0	1.35	600	- 16	+ 7	+ 8	4.98	520
3.6	T1	5	0646H	1.0	2.0	1.35	600	- 16	+ 7	+ 8	4.98	520
9.0	T2	20	0647H	1.0	5.0	2.5	240	- 16	+ 7	+ 8	3.69	755
9.0	T2	10	0648H	1.0	5.0	2.5	240	- 16	+ 7	+ 8	3.69	755
9.0	T2	5	0649H	1.0	5.0	2.5	240	- 16	+ 7	+ 8	3.69	755
14	T2	20	0650H	1.0	7.0	3.0	167	- 16	+ 7	+ 8	2.85	860
14	T2	10	0651H	1.0	7.0	3.0	167	- 16	+ 7	+ 8	2.85	860
14	T2	5	0652H	1.0	7.0	3.0	167	- 16	+ 7	+ 8	2.85	860
18	T3	20	0653H	2.0	9.0	2.5	129	- 16	+ 7	+ 8	1.85	1130
18	T3	10	0654H	2.0	9.0	2.5	129	- 16	+ 7	+ 8	1.85	1130
18	T3	5	0655H	2.0	9.0	2.5	129	- 16	+ 7	+ 8	1.85	1130
25	T3	20	0656H	2.0	13.0	3.0	93	- 16	+ 7	+ 8	1.59	1200
25	T3	10	0657H	2.0	13.0	3.0	93	- 16	+ 7	+ 8	1.59	1200
25	T3	5	0658H	2.0	13.0	3.0	93	- 16	+ 7	+ 8	1.59	1200
56	T4	20	0659 H	10.0	40.0	3.25	32	- 25	+ 15	+ 15	0.77	1800
56	T4	10	0660H	10.0	40.0	3.25	32	- 25	+ 15	+ 15	0.77	1800

**Notes**

(1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).

(2) Maximum ESR is calculated by the following equation:

$$ESR (max.) = \frac{DF}{2\pi f C}, \text{ where}$$

DF = Maximum dissipation factor from Standard Ratings table

f = 120 Hz

C = Nominal capacitance

(3) For ripple current limits at various temperatures, voltages, and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06016												
CAPACITANCE (μF)	CASE CODE	CAP. TOL. (± %)	PIN FOR DSCC 06016 (1)	MAX. DCL (μA) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C (Ω)	MAX. CAPACITANCE CHANGE (%) AT			MAX. ESR AT + 25 °C 120 Hz (Ω) (2)	MAX. RIPPLE CURRENT AT 85 °C 40 kHz 3 mA RMS (3)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C		
<b>6 V<sub>DC</sub> AT + 85 °C; 4 V<sub>DC</sub> AT + 125 °C</b>												
220	T1	20	0177H	2	9	25	36	- 64	13	16	1.51	1000
220	T1	10	0178H	2	9	25	36	- 64	13	16	1.51	1000
820	T2	20	0179H	3	14	77.5	18	- 88	16	20	1.26	1500
820	T2	10	0180H	3	14	77.5	18	- 88	16	20	1.26	1500
1500	T3	20	0181H	5	20	86	18	- 90	20	25	0.76	1900
1500	T3	10	0182H	5	20	86	18	- 90	20	25	0.76	1900
2200	T4	20	0183H	6	24	85	13	- 90	25	30	0.52	2300
2200	T4	10	0184H	6	24	85	13	- 90	25	30	0.52	2300
<b>8 V<sub>DC</sub> AT + 85 °C; 5 V<sub>DC</sub> AT + 125 °C</b>												
180	T1	20	0185H	2	9	20.5	45	- 60	13	16	1.51	1000
180	T1	10	0186H	2	9	20.5	45	- 60	13	16	1.51	1000
680	T2	20	0187H	3	14	65	22	- 83	16	20	1.27	1500
680	T2	10	0188H	3	14	65	22	- 83	16	20	1.27	1500
1500	T3	20	0189H	5	20	85	18	- 90	20	25	0.75	1900
1500	T3	10	0190H	5	20	85	18	- 90	20	25	0.75	1900
1800	T4	20	0191H	7	25	69	14	- 90	25	30	0.51	2300
1800	T4	10	0192H	7	25	69	14	- 90	25	30	0.51	2300
<b>10 V<sub>DC</sub> AT + 85 °C; 7 V<sub>DC</sub> AT + 125 °C</b>												
150	T1	20	0193H	2	9	17	54	- 55	13	16	1.51	900
150	T1	10	0194	2	9	17	54	- 55	13	16	1.51	900
560	T2	20	0195H	3	16	53	27	- 77	16	20	1.26	1450
560	T2	10	0196H	3	16	53	27	- 77	16	20	1.26	1450
1200	T3	20	0197H	5	20	68.5	18	- 88	20	25	0.76	1850
1200	T3	10	0198H	5	20	68.5	18	- 88	20	25	0.76	1850
1500	T4	20	0199H	7	25	57	15	- 88	25	30	0.51	2300
1500	T4	10	0200H	7	25	57	15	- 88	25	30	0.51	2300
<b>15 V<sub>DC</sub> AT + 85 °C; 10 V<sub>DC</sub> AT + 125 °C</b>												
100	T1	20	0201H	2	9	15	72	- 44	13	16	1.99	900
100	T1	10	0202H	2	9	15	72	- 44	13	16	1.99	900
390	T2	20	0203H	3	16	37	31	- 66	16	20	1.26	1450
390	T2	10	0204H	3	16	37	31	- 66	16	20	1.26	1450
820	T3	20	0205H	6	24	55.5	22	- 77	20	25	0.9	1800
820	T3	10	0206H	6	24	55.5	22	- 77	20	25	0.9	1800
1000	T4	20	0207H	8	32	46	17	- 77	25	30	0.61	2300
1000	T4	10	0208H	8	32	46	17	- 77	25	30	0.61	2300
<b>25 V<sub>DC</sub> AT + 85 °C; 15 V<sub>DC</sub> AT + 125 °C</b>												
68	T1	20	0209H	2	9	11	90	- 40	12	15	2.15	850
68	T1	10	0210H	2	9	11	90	- 40	12	15	2.15	850
270	T2	20	0211H	3	16	27.5	33	- 62	13	16	1.35	1400
270	T2	10	0212H	3	16	27.5	33	- 62	13	16	1.35	1400
560	T3	20	0213H	7	28	38	24	- 72	20	25	0.9	1750
560	T3	10	0214H	7	28	38	24	- 72	20	25	0.9	1750
680	T4	20	0215H	8	32	31.5	19	- 72	25	30	0.62	2100
680	T4	10	0216H	8	32	31.5	19	- 72	25	30	0.62	2100

**Notes**

(1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).

(2) Maximum ESR is calculated by the following equation:

$$ESR (max.) = \frac{DF}{2\pi f C}, \text{ where}$$

DF = Maximum dissipation factor from Standard Ratings table

f = 120 Hz

C = Nominal capacitance

(3) For ripple current limits at various temperatures, voltages, and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06016												
CAPACITANCE (µF)	CASE CODE	CAP. TOL. (± %)	PIN FOR DSCC 06016 (1)	MAX. DCL (µA) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C (Ω)	MAX.. CAPACITANCE CHANGE (%) AT			MAX. ESR AT + 25 °C 120 Hz (Ω) (2)	MAX. RIPPLE CURRENT AT 85 °C 40 kHz 3 mA RMS (3)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C		
<b>30 V<sub>DC</sub> AT + 85 °C; 20 V<sub>DC</sub> AT + 125 °C</b>												
56	T1	20	0217H	2	9	11	100	- 38	12	15	2.61	800
56	T1	10	0218H	2	9	11	100	- 38	12	15	2.61	800
220	T2	20	0219H	3	16	21	36	- 60	13	16	1.27	1200
220	T2	10	0220H	3	16	21	36	- 60	13	16	1.27	1200
470	T3	20	0221H	8	32	32	25	- 65	20	25	0.91	1500
470	T3	10	0222H	8	32	32	25	- 65	20	25	0.91	1500
560	T4	20	0223H	9	36	27.5	20	- 65	25	30	0.65	2000
560	T4	10	0224H	9	36	27.5	20	- 65	25	30	0.65	2000
<b>50 V<sub>DC</sub> AT + 85 °C; 30 V<sub>DC</sub> AT + 125 °C</b>												
33	T1	20	0225H	2	9	6.15	135	- 29	10	12	2.48	700
33	T1	10	0226H	2	9	6.15	135	- 29	10	12	2.48	700
120	T2	20	0227H	4	24	11.3	49	- 42	12	15	1.25	1200
120	T2	10	0228H	4	24	11.3	49	- 42	12	15	1.25	1200
270	T3	20	0229H	8	32	18.5	29	- 46	20	25	0.91	1450
270	T3	10	0230H	8	32	18.5	29	- 46	20	25	0.91	1450
330	T4	20	0231H	9	36	19	22	- 46	25	30	0.77	1900
330	T4	10	0232H	9	36	19	22	- 46	25	30	0.77	1900
<b>60 V<sub>DC</sub> AT + 85 °C; 40 V<sub>DC</sub> AT + 125 °C</b>												
27	T1	20	0233H	3	12	5.1	144	- 24	10	12	2.51	700
27	T1	10	0234H	3	12	5.1	144	- 24	10	12	2.51	700
100	T2	20	0235H	4	20	9.5	54	- 36	12	15	1.26	1100
100	T2	10	0236H	4	20	9.5	54	- 36	12	15	1.26	1100
220	T3	20	0237H	8	32	15	29	- 40	16	20	0.91	1400
220	T3	10	0238H	8	32	15	29	- 40	16	20	0.91	1400
270	T4	20	0239H	9	36	13.5	23	- 45	20	25	0.67	1850
270	T4	10	0240H	9	36	13.5	23	- 45	20	25	0.67	1850
<b>75 V<sub>DC</sub> AT + 85 °C; 50 V<sub>DC</sub> AT + 125 °C</b>												
22	T1	20	0241H	3	12	4.25	157	- 19	10	12	2.57	600
22	T1	10	0242H	3	12	4.25	157	- 19	10	12	2.57	600
82	T2	20	0243H	4	24	7.6	63	- 30	12	15	1.23	1000
82	T2	10	0244H	4	24	7.6	63	- 30	12	15	1.23	1000
180	T3	20	0245H	9	36	12.2	30	- 35	16	20	0.9	1300
180	T3	10	0246H	9	36	12.2	30	- 35	16	20	0.9	1300
220	T4	20	0247H	10	40	18.5	24	- 40	20	25	1.12	1800
220	T4	10	0248H	10	40	18.5	24	- 40	20	25	1.12	1800

**Notes**

(1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).

(2) Maximum ESR is calculated by the following equation:

$$ESR (max.) = \frac{DF}{2\pi f C}, \text{ where}$$

DF = Maximum dissipation factor from Standard Ratings table

f = 120 Hz

C = Nominal capacitance

(3) For ripple current limits at various temperatures, voltages, and frequencies, see Ripple Current table.



STANDARD RATINGS: DSCC 06016												
CAPACITANCE (µF)	CASE CODE	CAP. TOL. (± %)	PIN FOR DSCC 06016 (1)	MAX. DCL (µA) AT		MAX. DF AT + 25 °C (%)	MAX. IMP. AT - 55 °C (Ω)	MAX.. CAPACITANCE CHANGE (%) AT			MAX. ESR AT + 25 °C 120 Hz (Ω) (2)	MAX. RIPPLE CURRENT AT 85 °C 40 kHz 3 mA RMS (3)
				+ 25 °C	+ 85 °C + 125 °C			- 55 °C	+ 85 °C	+ 125 °C		
<b>100 V<sub>DC</sub> AT + 85 °C; 65 V<sub>DC</sub> AT + 125 °C</b>												
10	T1	20	0249H	3	12	2.25	200	- 17	10	12	2.99	800
10	T1	10	0250H	3	12	2.25	200	- 17	10	12	2.99	800
39	T2	20	0251H	5	24	5.2	80	- 20	12	15	1.77	1300
39	T2	10	0252H	5	24	5.2	80	- 20	12	15	1.77	1300
68	T3	20	0253H	10	40	5.65	40	- 30	14	16	1.11	1600
68	T3	10	0254H	10	40	5.65	40	- 30	14	16	1.11	1600
120	T4	20	0255H	12	48	12.5	30	- 35	15	17	1.38	2000
120	T4	10	0256H	12	48	12.5	30	- 35	15	17	1.38	2000
<b>125 V<sub>DC</sub> AT + 85 °C; 85 V<sub>DC</sub> AT + 125 °C</b>												
6.8	T1	20	0257H	3	12	3	300	- 14	10	12	5.86	700
6.8	T1	10	0258H	3	12	3	300	- 14	10	12	5.86	700
27	T2	20	0259H	5	24	3.6	90	- 18	12	15	1.77	1200
27	T2	10	0260H	5	24	3.6	90	- 18	12	15	1.77	1200
47	T3	20	0261H	10	40	3.95	50	- 26	14	16	1.12	1500
47	T3	10	0262H	10	40	3.95	50	- 26	14	16	1.12	1500
82	T4	20	0263H	12	48	8.7	32	- 30	15	17	1.41	1900
82	T4	10	0264H	12	48	8.7	32	- 30	15	17	1.41	1900

**Notes**

- (1) Dash number will include the letter "H" to indicate the vibration and shock requirements (i.e., 51 g random vibration, 80 g sinusoidal vibration and 500 g shock).
- (2) Maximum ESR is calculated by the following equation:  

$$ESR (max.) = \frac{DF}{2\pi f C}$$
 where  
 DF = Maximum dissipation factor from Standard Ratings table  
 f = 120 Hz  
 C = Nominal capacitance
- (3) For ripple current limits at various temperatures, voltages, and frequencies, see Ripple Current table.

DSCC 06013, 06014, 06015, 06016 RIPPLE CURRENT MULTIPLIERS VS. FREQUENCY, TEMPERATURE AND APPLIED PEAK VOLTAGE																									
FREQUENCY OF APPLIED RIPPLE CURRENT		120 Hz				800 Hz				1 kHz				10 kHz				40 kHz				100 kHz			
AMBIENT STILL AIR		TEMP °C				TEMP °C				TEMP °C				TEMP °C				TEMP °C							
		≤ 55	85	105	125	≤ 55	85	105	125	≤ 55	85	105	125	≤ 55	85	105	125	≤ 55	85	105	125	≤ 55	85	105	125
% OF APPLIED VOLTAGE	100 %	0.60	0.39	-	-	0.71	0.43	-	-	0.72	0.46	-	-	0.88	0.55	-	-	1.0	0.63	-	-	1.1	0.69	-	-
	90 %	0.60	0.46	-	-	0.71	0.55	-	-	0.72	0.55	-	-	0.88	0.67	-	-	1.0	0.77	-	-	1.1	0.85	-	-
	80 %	0.60	0.52	0.35	-	0.71	0.62	0.42	-	0.72	0.62	0.42	-	0.88	0.76	0.52	-	1.0	0.87	0.59	-	1.1	0.96	0.65	-
	70 %	0.60	0.58	0.44	-	0.71	0.69	0.52	-	0.72	0.70	0.52	-	0.88	0.85	0.64	-	1.0	0.97	0.73	-	1.1	1.07	0.80	-
	66 2/3 %	0.60	0.60	0.46	0.27	0.71	0.71	0.55	0.32	0.72	0.72	0.55	0.32	0.88	0.88	0.68	0.40	1.0	1.0	0.77	0.45	1.1	1.1	0.85	0.50

**Notes**

- 1. At + 125 °C the rated voltage of the capacitors decreases to 66 2/3 % of the + 85 °C rated voltage.
- 2. The peak of the applied AC ripple voltage plus the applied DC voltage must not exceed the DC voltage rating of the capacitor either forward or reverse.
- 3. The ripple current listed represents a rating calculated using a maximum internal temperature rise (ΔT) of + 50 °C at 40 kHz at + 85 °C ambient with a maximum peak rated voltage of 66 2/3 % of the + 85 °C peak voltage rating.
- 4. The maximum allowable internal temperature rise (ΔT) decreases linearly to a calculated + 10 °C rise at + 125 °C ambient.
- 5. The internal temperature rise is directly proportional to the equivalent series resistance of the capacitor and equivalent series resistance increases with decreasing frequency.



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## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

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