FELSIC 039 - FELSIC 037

CO 37 - CO 39

32 000 h / 85°C

10 V ... 400 V	100 µF ... 150 000 µF	Ø 36 (1,417) ... Ø 77 (3,031)	– 55°C + 85°C	Long Life Time

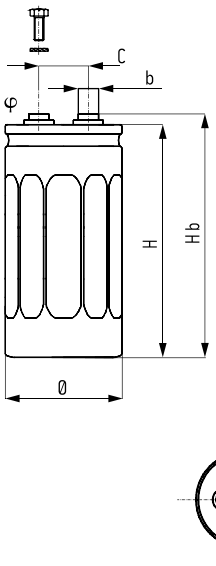
APPLICATIONS

- Power electronics: converters, current inverters
- Switch mode power supplies
- Magnetization, welding machines, flash
- Circuit with high impulse current

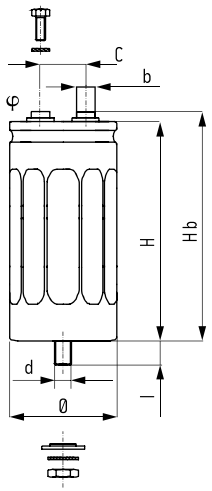
Screw terminals: M4 or M5

Tolerance on capacitance at 20°C : –10 +50 %
Operating temperature: – 55°C + 85°C

BC



BD



BC
Insulated aluminum can
Hexagonal screws
Spring washers
Fixing clip must be ordered separately

BD
Aluminum can with sleeve
Hexagonal screws
Spring washers
Stud fixing delivered with capacitor
(steel hex nut, spring washer)

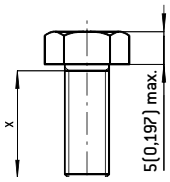
DIMENSIONS in mm (inches)

Ø ±1 (0,039)	H ±2 (0,079)	Hb ±2 (0,079)	C ±0,5 (0,020)	φ	b
36 (1,417)	47 (1,850)	53 (2,087)	12,7 (0,500)	M4	8 (0,315)
36 (1,417)	60 (2,362)	66 (2,598)	12,7 (0,500)	M4	8 (0,315)
36 (1,417)	80 (3,150)	86 (3,386)	12,7 (0,500)	M4	8 (0,315)
51 (2,008)	62 (2,441)	68 (2,677)	22,2 (0,874)	M5	13 (0,512)
51 (2,008)	81 (3,189)	87 (3,425)	22,2 (0,874)	M5	13 (0,512)
51 (2,008)	112 (4,409)	118 (4,646)	22,2 (0,874)	M5	13 (0,512)
66 (2,598)	112 (4,409)	118 (4,646)	28,7 (1,130)	M5	13 (0,512)
73 (2,874)	112 (4,409)	118 (4,646)	31,7 (1,248)	M5	13 (0,512)
77 (3,031)	144 (5,669)	150 (5,906)	31,7 (1,248)	M5	13 (0,512)

Ø	d	l	Max. nut torque
36 (1,417)	M8	$12^{\pm1}$ ($0{,}472^{\pm0{,}472}$)	4 Nm
≥ 51 (2,008)	M12	$16^{\pm1{,}5}$ ($0{,}630^{\pm0{,}059}$)	10 Nm

HEXAGONAL SCREWS mm (inches)

Screwing height between screws and terminals:	3,5 (0,138) max
Max. screw torque:	M4: 2 Nm [x min 8 (0,315)] M5: 3 Nm [x min 8 (0,315)]



RESISTANCE TO VIBRATIONS

	Standard
ƒ (Hz)	10 - 2000 Hz
Amplitude	1,5 (0,059)
Acceleration	20 g - 96 m/s²
t (h)	3 x 2 h

SPECIFICATIONS

NFC 83 110 - Models CO 39, CO 37 - Long life
DIN 41 240 - Climatic category FDP – 55°C + 85°C / 56 days
CECC 30301-017 Issue 4
IEC 60 384.4 long life
Standard endurance test at U_R: $U_R \leq 160$ V: 10 000 h / 85°C
$U_R > 160$ V: 5000 h / 85°C

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between terminals and mounting hardware: 100 MΩ
Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V
Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

FELSIC 039 - FELIC 037

CO 37 - CO 39

32 000 h / 85°C

Capacitance (µF)	Can Ø mm (inches)		Can H mm (inches)		ESR 100 Hz +20°C Typic (mΩ)	ESR 100 Hz +20°C max. (mΩ)	Z 20 kHz +20°C max. (mΩ)	II +20°C 5 min max. (mA)	I ~ 100 Hz +40°C max. (A)	I ~ 100 Hz +85°C (A)	I ~ 100 Hz +105°C (A)	Code FELSIC 039 (BC)	Code FELSIC 037 (BD)
Rated voltage 10 V													
15000	36	(1,417)	60	(2,362)	23	35	35	0,9	22	6,5	4,2	A 728321	A 728331
22000	36	(1,417)	80	(3,150)	17	22	25	1,2	22	8,7	5,6	A 728322	A 728332
Rated voltage 16 V													
6800	36	(1,417)	47	(1,850)	35	42	50	0,6	17	4,5	2,9	A 728340	A 738350
10000	36	(1,417)	60	(2,362)	24	35	35	0,9	22	6,4	4,1	A 728341	A 738351
15000	36	(1,417)	80	(3,150)	19	30	25	1,4	22	8,1	5,2	A 728342	A 738352
22000	51	(2,008)	62	(2,441)	26	34	40	2	25	7,3	4,7	A 728343	A 738353
33000	51	(2,008)	81	(3,189)	18	25	30	3	25	10	6,4	A 728344	A 738354
47000	51	(2,008)	112	(4,409)	14	19	20	4	25	13	8,4	A 728345	A 738355
68000	66	(2,598)	112	(4,409)	8	11	12	5	50	18	11,6	A 728346	A 738356
100000	73	(2,874)	112	(4,409)	8	11	11	5	50	19	12,3	A 728347	A 738357
Rated voltage 25 V													
4700	36	(1,417)	47	(1,850)	39	62	54	0,7	16	4,3	2,8	A 728360	A 738370
6800	36	(1,417)	60	(2,362)	27	40	40	1	22	6	3,9	A 728361	A 738371
10000	36	(1,417)	80	(3,150)	21	30	30	1,5	22	7,5	4,8	A 728362	A 738372
22000	51	(2,008)	81	(3,189)	16	21	30	3	25	10	6,4	A 728364	A 738374
33000	51	(2,008)	112	(4,409)	14	20	20	4	25	13	8,4	A 728365	A 738375
47000	66	(2,598)	112	(4,409)	10	13	16	5	50	17,3	11,2	A 728366	A 738376
68000	73	(2,874)	112	(4,409)	10	13	16	5	50	18,4	11,9	A 728367	A 738377
150000	77	(3,031)	144	(5,669)	5	8	10	6	55	20	12,9	A 728368	A 738378
Rated voltage 40 V													
3300	36	(1,417)	47	(1,850)	43	60	60	0,7	15	4,1	2,7	A 728380	A 738390
4700	36	(1,417)	60	(2,362)	29	45	45	1	21	5,7	3,7	A 728381	A 738391
6800	36	(1,417)	80	(3,150)	23	40	35	1,5	22	7,2	4,7	A 728382	A 738392
10000	51	(2,008)	62	(2,441)	28	40	40	2	25	7	4,5	A 728383	A 738393
15000	51	(2,008)	81	(3,189)	22	33	30	3	25	8,7	5,6	A 728384	A 738394
22000	51	(2,008)	112	(4,409)	15	23	23	5	25	12,6	8	A 728385	A 738395
33000	66	(2,598)	112	(4,409)	10	13	18	5	50	16,5	10,6	A 728386	A 738396
47000	73	(2,874)	112	(4,409)	10	13	16	5	50	18,4	11,9	A 728387	A 738397
100000	77	(3,031)	144	(5,669)	5	8	10	6	55	22	14	A 728388	A 738398
Rated voltage 63 V													
2200	36	(1,417)	47	(1,850)	47	80	65	0,7	15	3,9	2,5	A 728400	A 738410
3300	36	(1,417)	60	(2,362)	32	60	50	1,1	20	5,4	3,5	A 728401	A 738411
4700	36	(1,417)	80	(3,150)	25	40	40	1,6	22	6,9	4,5	A 728402	A 738412
6800	51	(2,008)	62	(2,441)	30	45	45	2	25	6,7	4,3	A 728403	A 738413
10000	51	(2,008)	81	(3,189)	23	32	35	3	25	8,5	5,5	A 728404	A 738414
15000	51	(2,008)	112	(4,409)	16	24	24	5	25	12,5	8	A 728405	A 738415
22000	66	(2,598)	112	(4,409)	13	20	16	5	50	15,7	10,1	A 728406	A 738416
33000	73	(2,874)	112	(4,409)	12	16	16	5	50	17,5	11,3	A 728407	A 738417
47000	77	(3,031)	144	(5,669)	7	9	12	6	55	20	12,9	A 728408	A 738418
Rated voltage 100 V													
1000	36	(1,417)	47	(1,850)	58	170	150	0,5	13	3,5	2,3	A 728420	A 738430
1500	36	(1,417)	60	(2,362)	38	120	100	0,8	18	4,9	3,2	A 728421	A 738431
2200	36	(1,417)	80	(3,150)	31	85	70	1,1	22	6,1	4	A 728422	A 738432
3300	51	(2,008)	62	(2,441)	34	85	70	1,8	24	6,3	4,1	A 728423	A 738433
4700	51	(2,008)	81	(3,189)	26	52	50	2,5	25	8	5,2	A 728424	A 738434
6800	51	(2,008)	112	(4,409)	18	36	40	4	25	11,3	7,3	A 728425	A 738435
10000	66	(2,598)	112	(4,409)	16	32	18	5	50	13,9	9	A 728426	A 738436
15000	73	(2,874)	112	(4,409)	16	21	18	6	50	14,8	9,6	A 728427	A 738437
22000	77	(3,031)	144	(5,669)	10	13	14	6	55	18	11,6	A 728428	A 738438
Rated voltage 160 V													
470	36	(1,417)	47	(1,850)	185	270	190	0,4	8	2	1,3	A 728440	A 738450
680	36	(1,417)	60	(2,362)	130	240	130	0,5	9	2,5	1,6	A 728441	A 738451
1000	36	(1,417)	80	(3,150)	100	170	95	0,9	12	3,1	2	A 728442	A 738452
1500	51	(2,008)	62	(2,441)	72	130	95	1,3	16	4,2	2,8	A 728443	A 738453
2200	51	(2,008)	81	(3,189)	52	85	74	2	20	5,4	3,6	A 728444	A 738454
3300	51	(2,008)	112	(4,409)	35	50	60	3	25	8	5,1	A 728445	A 738455
4700	66	(2,598)	112	(4,409)	24	40	40	4	39	10,5	7	A 728446	A 738456
6800	73	(2,874)	112	(4,409)	16	25	40	5	50	13,7	8,8	A 728447	A 738457
10000	77	(3,031)	144	(5,669)	12	17	16	6	55	18	11,6	A 728448	A 738458

FELSIC 039 - FELSIC 037

CO 37 - CO 39

32 000 h / 85°C

Capacitance	Can				ESR 100 Hz +20°C		Z 20 kHz +20°C max.	II +20°C 5 min max.	I ~ 100 Hz		Code	
	Ø		H		Typic	max.			+40°C max.	+85°C		
(µF)	mm (inches)		mm (inches)		(mΩ)	(mΩ)	(mΩ)	(mA)	(A)	(A)	FELSIC 039 (BC)	FELSIC 037 (BD)
Rated voltage 250 V												
220	36	(1,417)	47	(1,850)	250	800	270	0,3	5	1,2	A 728480	A 738490
330	36	(1,417)	60	(2,362)	180	450	200	0,5	7	1,8	A 728481	A 738491
470	36	(1,417)	80	(3,150)	120	300	150	0,7	9	2,3	A 728482	A 738492
680	51	(2,008)	62	(2,441)	100	200	120	1	11	3	A 728483	A 738493
1000	51	(2,008)	81	(3,189)	80	160	90	1,5	14	3,7	A 728484	A 738494
3300	73	(2,874)	112	(4,409)	25	45	40	4	36	9,6	A 728487	A 738497
4700	77	(3,031)	144	(5,669)	20	37	22	6	43	11,5	A 728488	A 738498
Rated voltage 350 V												
150	36	(1,417)	47	(1,850)	530	800	360	0,3	5	1,2	A 728800	A 738810
220	36	(1,417)	60	(2,362)	350	580	290	0,4	5	1,4	A 728801	A 738811
330	36	(1,417)	80	(3,150)	230	390	170	0,7	7	1,9	A 728802	A 738812
470	51	(2,008)	62	(2,441)	180	300	160	0,9	10	2,6	A 728803	A 738813
680	51	(2,008)	81	(3,189)	120	200	110	1,4	14	3,6	A 728804	A 738814
1000	51	(2,008)	112	(4,409)	80	120	70	2	19	5	A 728805	A 738815
1500	66	(2,598)	112	(4,409)	60	90	48	3	26	6,8	A 728806	A 738816
2200	73	(2,874)	112	(4,409)	50	70	44	4	30	7,9	A 728807	A 738817
3300	77	(3,031)	144	(5,669)	30	45	26	6	43	11,5	A 728808	A 738808
Rated voltage 400 V												
100	36	(1,417)	47	(1,850)	700	1500	1100	1,1	3	0,8	A 728830	A 738840
150	36	(1,417)	60	(2,362)	560	1200	760	1,4	4	1,0	A 728831	A 738841
220	36	(1,417)	80	(3,150)	400	850	520	1,7	5	1,4	A 728832	A 738842
330	51	(2,008)	62	(2,441)	300	550	380	2,0	7	1,8	A 728833	A 738843
470	51	(2,008)	81	(3,189)	170	320	160	2,5	10	2,6	A 728834	A 738844
680	51	(2,008)	112	(4,409)	130	230	180	3,0	13	3,5	A 728835	A 738845
1000	66	(2,598)	112	(4,409)	80	150	120	3,5	19	5,0	A 728836	A 738846
1500	73	(2,874)	112	(4,409)	55	100	95	4,0	24	6,3	A 728837	A 738847
2200	77	(3,031)	144	(5,669)	40	85	60	5,0	30	8,0	A 728848	A 738848

FELSIC 039 - FELIC 037

CO 37 - CO 39

32 000 h / 85°C

PEAK VOLTAGE (V)

1000 cycles, without ripple current
Up: Repetitive standard peak voltage (30 s)
Us: Repetitive surge voltage (0,1 s)
Do not exceed this value safely

U_R	10 V	16 V	25 V	40 V	63 V	100 V	160 V	250 V	350 V	400 V
Up	11,5	18	29	46	72	115	184	288	385	440
Us							235	290	405	450

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:
I ~: permissible r.m.s. current at 100 Hz

f (Hz)	50	100	300	600	1 000	10 000	50 000
I	0,8 x I~	I~	1,2 x I~	1,3 x I~	1,35 x I~	1,5 x I~	1,6 x I~

PERMISSIBLE REPETITIVE PEAK CURRENT Ip:

If given corresponding max r.m.s. currents are not exceeded, peak current values are as follows:

DIMENSIONS in mm (inches)				Ip (A)	I~ max.
Ø		H		40°C	(A)
36	(1,417)	47	(1,850)	400	22
36	(1,417)	60	(2,362)	450	22
36	(1,417)	80	(3,150)	600	22
51	(2,008)	62	(2,441)	700	25
51	(2,008)	81	(3,189)	800	25
51	(2,008)	112	(4,409)	1100	25
66	(2,598)	112	(4,409)	1900	50
73	(2,874)	112	(4,409)	3000	50
77	(3,031)	144	(5,669)	4200	55

EXPECTED LIFE as a function of temperature and ripple current