

"DC Link" Capacitors for Electric Drivetrain Inverters

High current film capacitors for electric and hybrid electric vehicles.



FEATURES

- High RMS Current 100A to 200A
- Operational to 110°C
- Max Temperature 125°C - non operational
- Low ESL: 20nH
- Life Expectancy: >15,000 Hours
- IGBT Direct Mount Terminals
- RoHS Compliant

Specification Summary

Capacitance Range

130 μ F to 1000 μ F

Capacitance Tolerance

Standard capacitance tolerance is $\pm 10\%$.

Voltage Range

450 VDC to 1000 VDC

Enclosure/Construction

Metal housing (plastic optional)

Quality Control

Capacitors are tested 100% for:

- Capacitance
- Tolerance
- Dissipation Factor
- Dielectric withstanding voltage
- Insulation Resistance
- Equivalent Series Resistance (ESR)

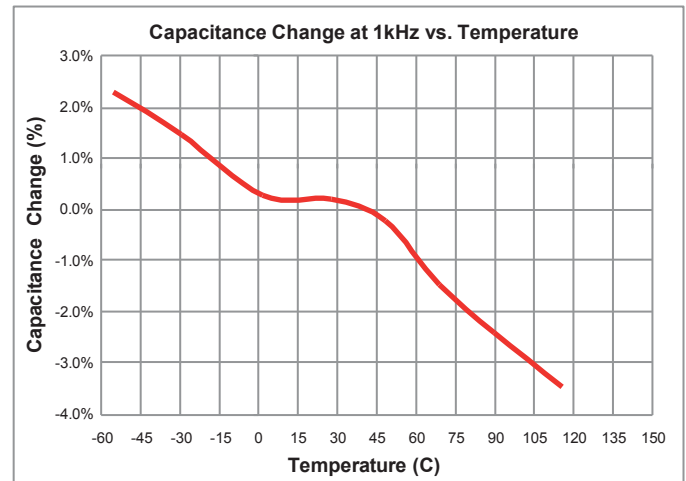
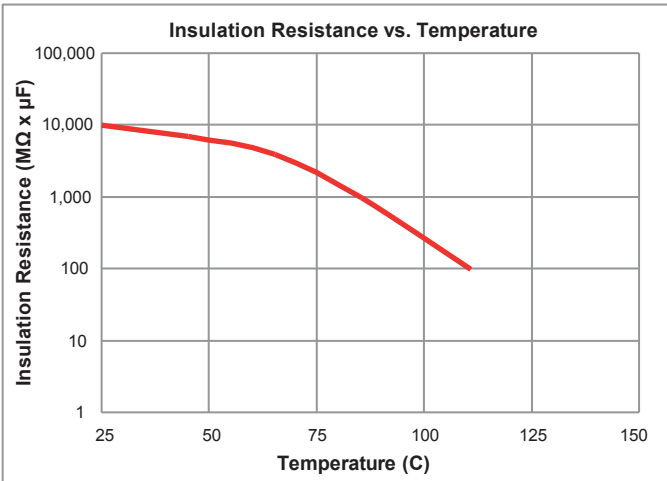
Process and inspection data are maintained on file and available upon special request.

Environmental

Parameter	Method	Condition
Vibration	204	D
Shock	213	I
Humidity	106	-
Thermal Shock	107	A
Life	108	F

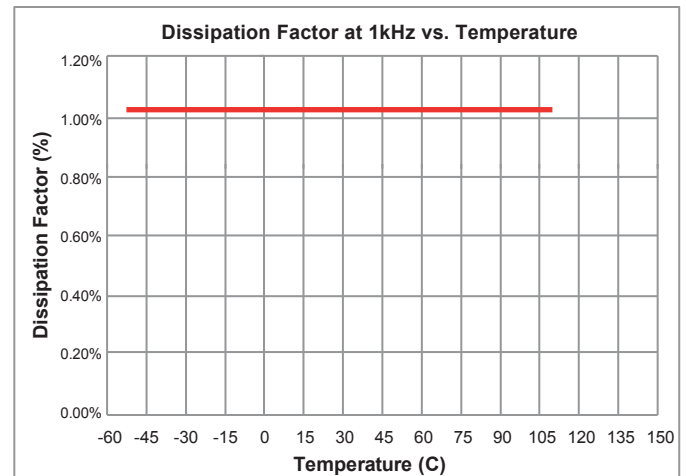
Reference MIL-STD-202

Characteristics



Dissipation Factor

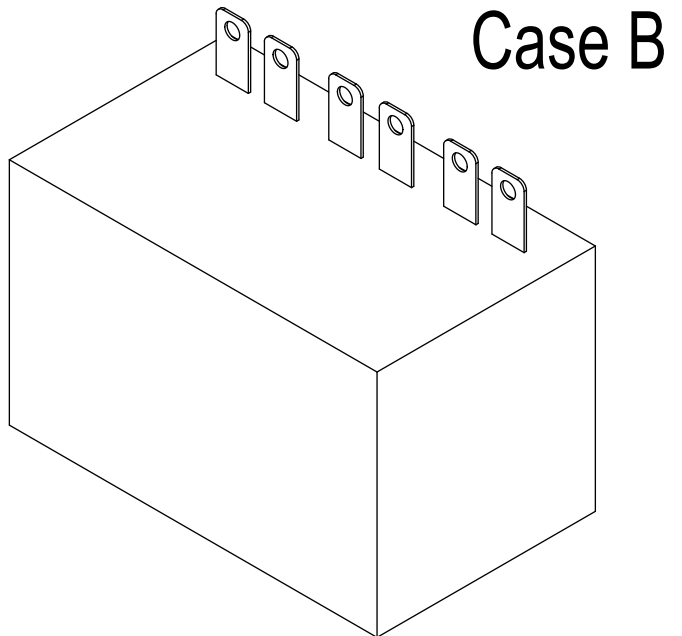
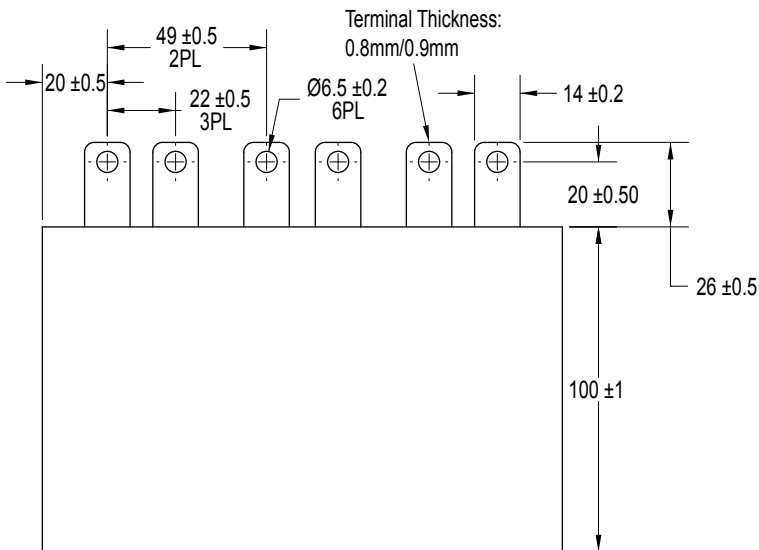
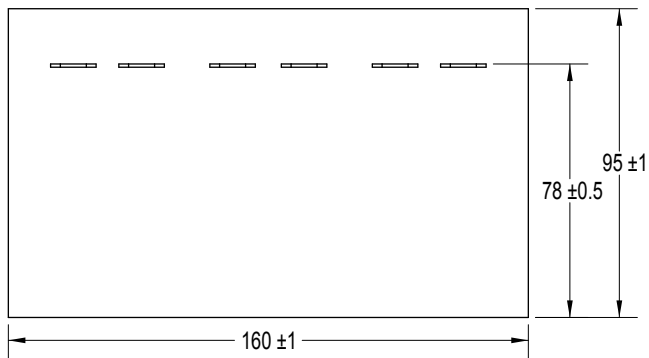
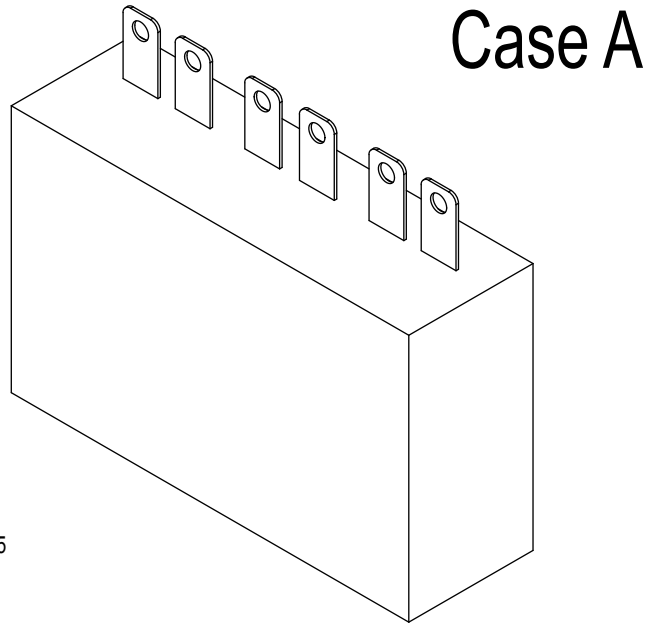
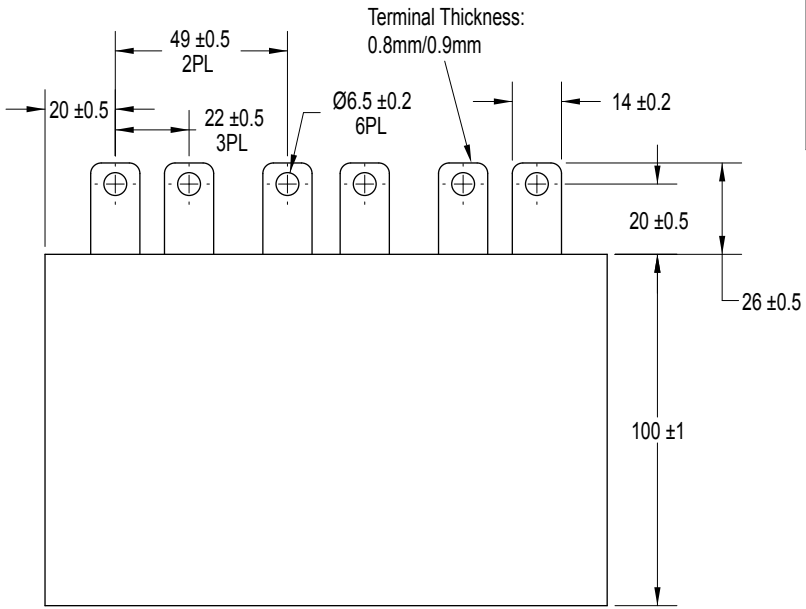
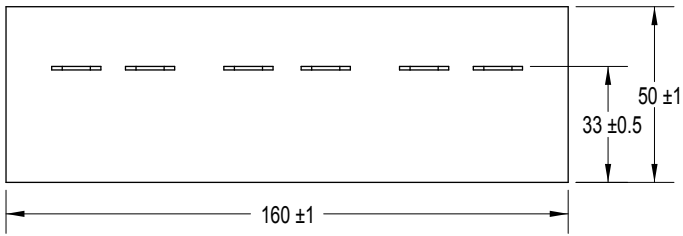
Polypropylene has an intrinsic dissipation factor of less than 2.1×10^{-4} over the operating temperature range of $-55^{\circ}C$ to $+110^{\circ}C$ and frequencies to 1MHz.



Detail Data

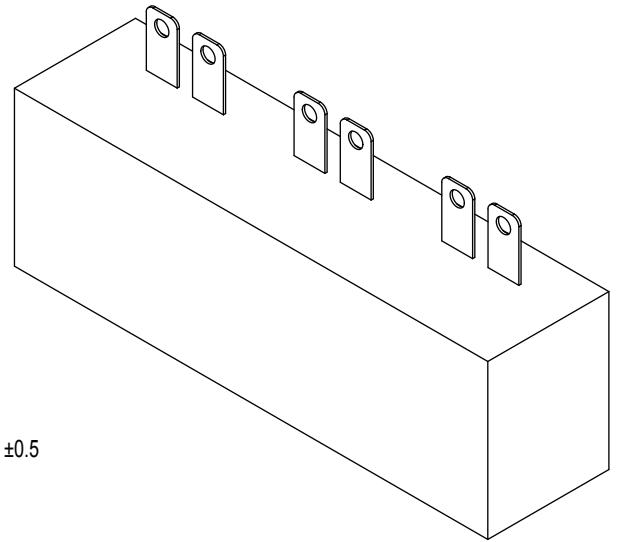
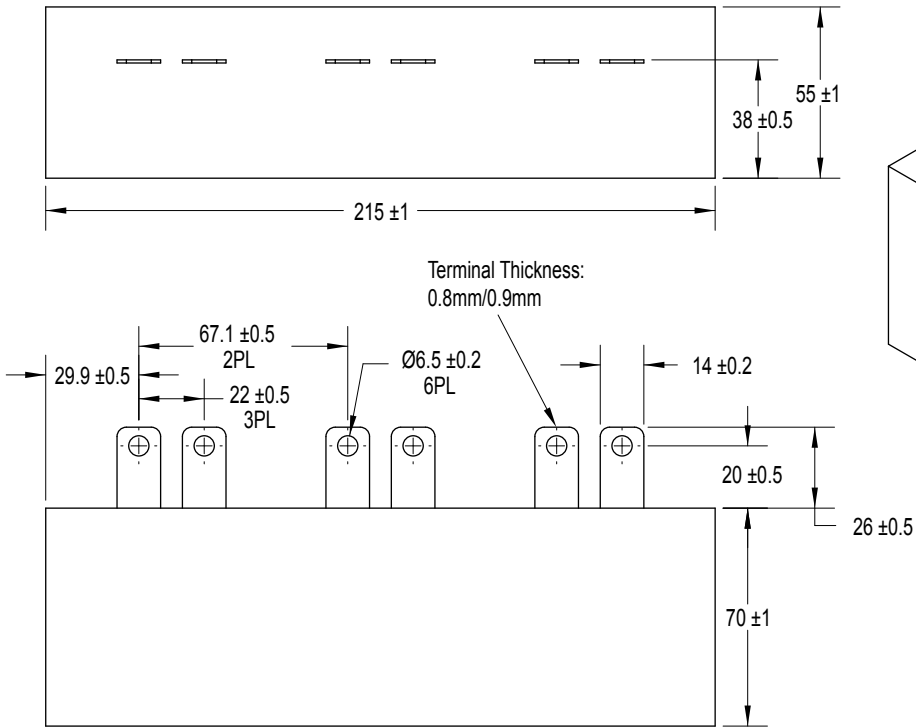
EC PART NUMBER	CASE	U _N (VDC)	C _N (μF)	"H" (mm)	"D" (mm)	"L" (mm)	(L _S) (nH)	(Rs) (mOhm)	Fres (kHz)	I PEAK (kAmps)	dv/dt V/μs	I _{MAX} * (Arms)	I _{MAX} * @90°C (Arms)	Rth °C/W
HEV1ABA_	A	450	500	50	100	160	<20	0.40	50.3	14.0	28	100	100	4.34
HEV1BBA_	B	450	1000	95	100	160	<20	0.20	35.6	28.0	28	200	200	2.17
HEV1CBA_	C	450	500	55	70	215	<20	0.52	50.3	12.0	24	100	100	3.70
HEV1DBA_	D	450	1000	55	125	215	<20	0.26	35.6	24.0	24	200	200	1.85
HEV1ABC_	A	600	300	50	100	160	<20	0.51	65.0	11.2	38	100	100	4.13
HEV1BBC_	B	600	600	95	100	160	<20	0.25	46.0	22.5	38	200	200	2.07
HEV1CBC_	C	600	300	55	70	215	<20	0.66	65.0	9.5	32	100	90	3.54
HEV1DBC_	D	600	600	55	125	215	<20	0.33	46.0	19.0	32	200	180	1.77
HEV1ABF_	A	750	190	50	100	160	<20	0.66	81.6	8.9	47	100	85	4.16
HEV1BBF_	B	750	380	95	100	160	<20	0.33	57.7	17.8	47	200	170	2.08
HEV1CBF_	C	750	200	55	70	215	<20	0.81	79.5	7.9	40	100	85	3.44
HEV1DBF_	D	750	400	55	125	215	<20	0.40	56.3	15.7	40	200	170	1.72
HEV1ABL_	A	1000	130	50	100	160	<20	0.82	98.7	7.3	56	100	75	4.21
HEV1BBL_	B	1000	260	95	100	160	<20	0.41	69.8	14.6	56	200	150	2.11
HEV1CBL_	C	1000	140	55	70	215	<20	0.98	95.1	6.7	48	100	75	3.42
HEV1DBL_	D	1000	280	55	125	215	<20	0.49	67.3	13.3	48	200	150	1.71

Dimensional Data

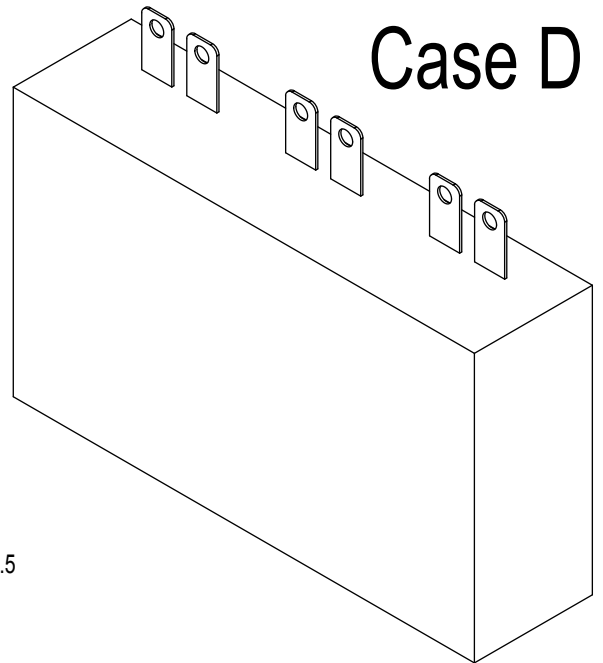
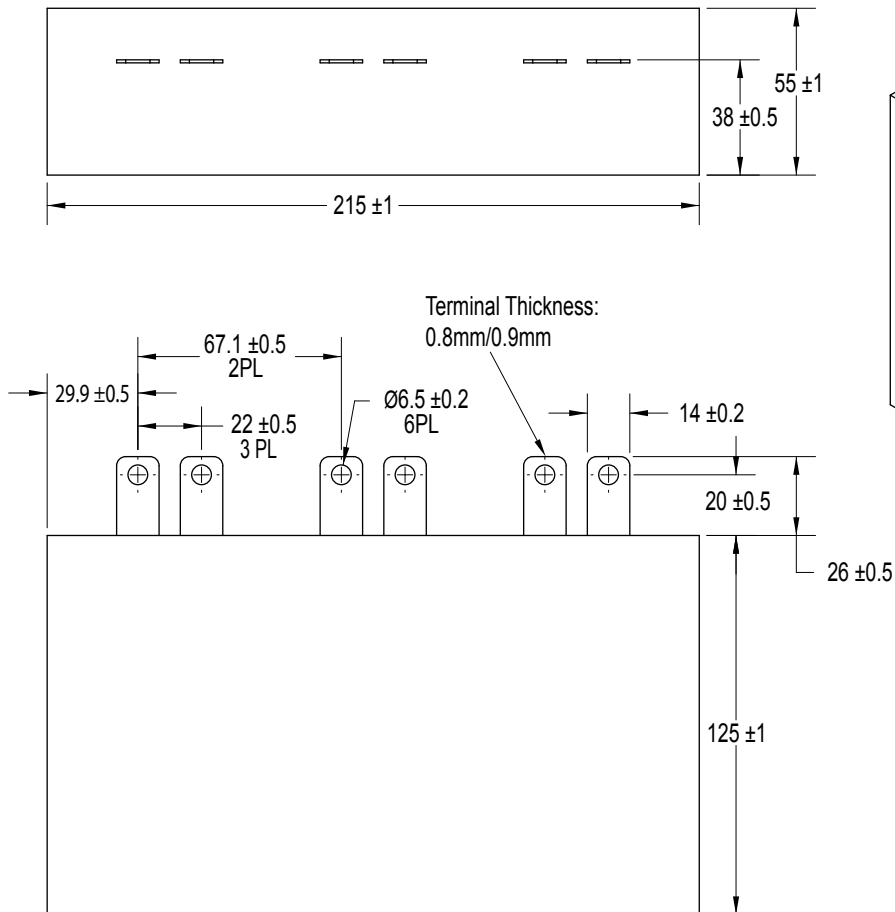


Dimensional Data

Case C



Case D



Additional Information

The EV/HEV series is a high current film capacitor for electric and hybrid electric vehicles.

Features:

- High RMS Current 100A to 200A
- Operational to 110°C
- Max Temperature 125°C
- Low ESL: 20nH
- Life Expectancy: >15,000 Hours
- IGBT Direct Mount Terminals

How to Order

TYPE DC Link	→	HEV1
CASE Case Style: A, B, C, D	→	B
VOLTAGE DC Voltage Rating: BA = 450VDC, BC = 600VDC, BF = 750VDC, BL = 1000VDC	→	BA
TOLERANCE Standard tolerance is ±10%. Tolerances of ±5% and ±20% are available upon request.	→	K

Marking And Date Code

All capacitors are marked with company initials "EC", corporate logo or EC trademark—in addition to type EV/HEV, capacitance, tolerance, rated DC working voltage and date code. The first two digits of the date code represent the year, the second two digits the week, i.e., 1252 is the 52nd week of 2012, 1202 is the second week of 2012.

Quality Assurance

Major emphasis is placed on quality assurance. EC is an ISO 9001 and AS9100 Certified Company. Raw material inspection and the use of SPC manufacturing procedures assure the highest quality standards. Procedures are fully described in the EC Quality Control Manual. Electronic Concepts will continue to advance the state-of-the-art by utilizing leading edge technology, compact capacitor designs and establishing reliability procedures.

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