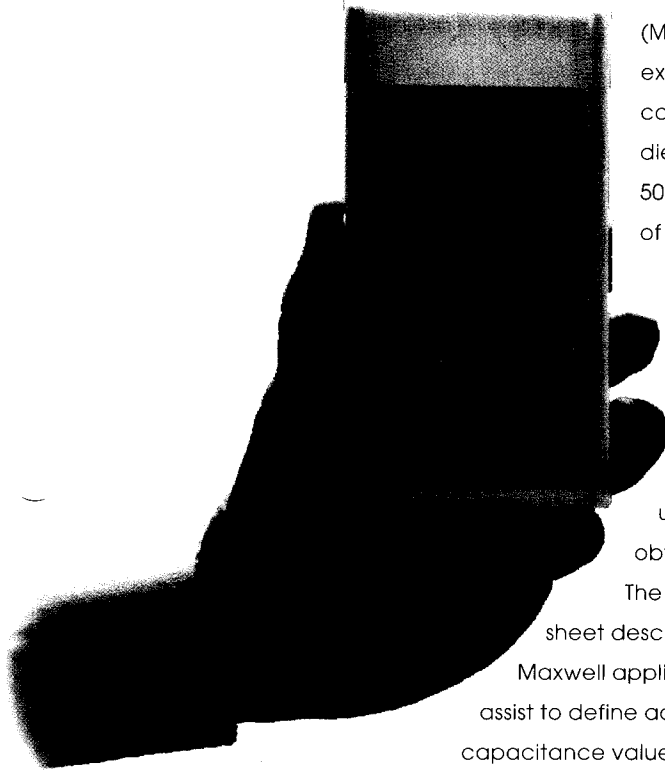


MDE

Mini Double-ended Capacitors

Description

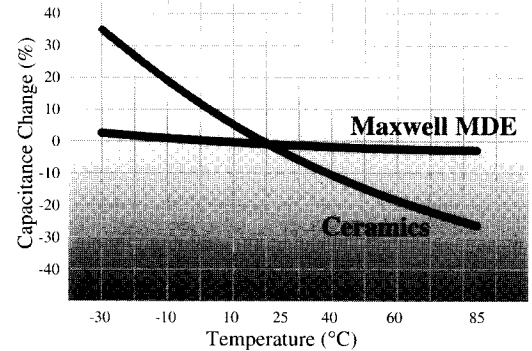


The mini double-ended (MDE) products are extended foil, plastic case capacitors with low loss dielectric rated from 5 to 50 kV, having inductance of less than 20 nH.

Because of their low inductance, the MDE capacitors are a replacement for ceramic capacitors in applications where several "doorknob" units are used in parallel to obtain low inductance.

The table on the reverse of this sheet describes selected models. A Maxwell applications engineer can assist to define additional models with other capacitance values.

Temperature Coefficient of Capacitance



Operating Specifications

Capacitance tolerance is $\pm 10\%$.

Capacitance variation from zero to rated peak voltage is less than 1%.

Rated voltage reversal is 20%.

Single discharge peak current is up to 25 kA.

Repetition rates to 1,000 Hz for rated voltage and <20% voltage reversal. Limit rms current to <25 amps (CW).

Temperature Characteristics

The typical capacitance change over the temperature range of -30°C to $+85^{\circ}\text{C}$ for Maxwell MDE capacitors and two familiar brands of ceramic capacitors are shown below. The smaller temperature coefficient of capacitance exhibited by the MDE products ensures more consistent operation for industrial lasers where length-of-run and time-of-day temperature variations are common.

To best match your application to a selected model or for specifications which exceed these ratings, please contact a Maxwell sales engineer.

Design Life

Maxwell mini double-ended capacitors are available in two design life ratings. For research or low rep-rate applications, models with a design life of greater than 10^8 shots are available. For high rep-rate applications, use models with a design life of greater than 10^9 shots. Design life is the number of charge/discharge cycles with 90% survivability at rated voltage with <20% voltage reversal.

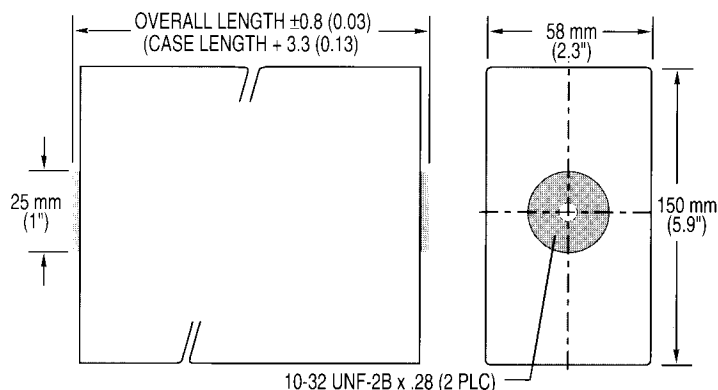
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BRAND	-30°C	+85°C
Maxwell MDE	+4%	-4%
Brand "A"	+35%	-28%
Brand "B"	+25%	-30%

Dimensions

Mini double-ended capacitors have a cross section of 58 x 150 mm with standard lengths of 76, 102, and 127 mm.



Maxwell mini double-ended capacitors

10⁸ Shot Life

Model Number	Capacitance Rating (nF)	Voltage Rating (kV)	Case Length (inch)
3 7 6 0 0	2,000	5	3
3 7 6 0 2	400	10	3
3 7 6 3 6	500	10	4
3 7 6 0 4	150	15	3
3 7 6 0 6	100	20	3
3 7 6 0 8	125	20	4
3 7 6 1 0	170	20	5
3 7 6 1 2	50	25	3
3 7 6 1 6	40	30	3
3 7 6 1 8	50	30	4
3 7 6 2 0	75	30	5
3 7 6 2 2	20	35	3
3 7 6 2 3	30	35	4
3 7 6 2 4	40	35	5
3 7 6 2 8	15	40	3
3 7 6 3 2	8.3	50	3
3 7 6 3 3	10	50	4
3 7 6 3 4	12.5	50	5

10⁹ Shot Life

3 7 6 0 1	750	5	3
3 7 6 0 3	200	10	3
3 7 6 0 5	100	15	3
3 7 6 0 7	60	20	3
3 7 6 0 9	80	20	4
3 7 6 1 1	100	20	5
3 7 6 1 3	25	25	3
3 7 6 1 4	40	25	4
3 7 6 1 5	50	25	5
3 7 6 1 7	15	30	3
3 7 6 1 9	25	30	4
3 7 6 2 1	35	30	5
3 7 6 2 5	10	35	3
3 7 6 2 6	15	35	4
3 7 6 2 7	20	35	5
3 7 6 2 9	6.3	40	3
3 7 6 3 0	10	40	4
3 7 6 3 1	12.5	40	5
3 7 6 3 5	7	50	5

How to determine MDE & select the capacitor for your application

Step 1

To define your applications, determine:

- Capacitance and acceptable tolerance
- Operating voltage
- Repetition rate and rms current
- Voltage reversal, normal and fault
- Required life, in charge/discharge cycles
- Maximum inductance
- Peak current and discharge time
- Environment and operating temperature

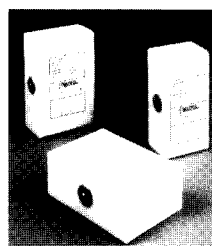
Step 2

Review your application requirements while comparing them with the listed capacitors. For correct capacitor selection, be sure your requirement does not exceed the stated design parameters or simply consult Maxwell.

Step 3

Contact Maxwell with your selection. If you wish, tradeoffs, deratings, and alternatives can be discussed.

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For more information on these and other MDE models, contact Maxwell.

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Specifications subject to change without notice.