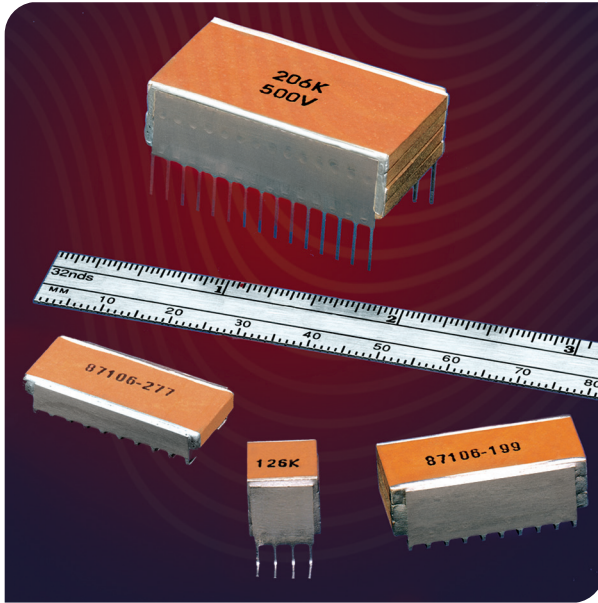


Capacitors

SMPS Switch-Mode Stacked Capacitors



Features

- NP0 & X7R Dielectrics, 50 to 500 VDC Ratings
- Custom Sizes, Voltages, and Values Available
- P-Series Approved to DSCC Drawings 87106 & 88011 MIL-PRF-49470
- New T-Series 200°C for down-hole tools and aircraft engine control applications
- E-Series Common European Lead Styles available to MIL-PRF-49470 requirements

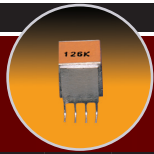
Common Applications

- Voltage Multipliers
- High Voltage Power Supplies
- Very High Frequency Switchers

HOW TO ORDER

M	2	EM	201	B	474	K	3	J1	W
Subfamily	# of Chips	Size	Voltage	DTC	Capacitance	Tol	Mark	Termination	Pack
L = P Series PME M = P Series PME D = E Series BME E = E Series PME R = T Series BME T = T Series PME	1 = 1 Chip 2 = 2 Chips 3 = 3 Chips 4 = 4 Chips 5 = 5 Chips N1 = BME Mini SM 1 Chip N2 = BME Min SM 2 Chips	See chart table "Cap Values & Mechanical Characteristics"	500 = 50V 101 = 100V 201 = 200V 501 = 500V	G = NP0/COG N = NP0 B = BX W = X7R	1st two digits are significant. 3rd digit denotes number of zeros. 101 = 100pF 102 = 1000pF	J = ±5% K = ±10% L = ±15% M = ±20% N = ±30% X = +80%/-20% P = +100%/0%	3 = Cap Code & Tol Z = Special	J1 = J Lead J2 = J Lead with reduced height J3 = J Lead (RoHS) J4 = J Lead with reduced height (RoHS) L1 = L Lead L2 = L Lead with reduced height L3 = L Lead (RoHS) L4 = L Lead with reduced height (RoHS) SL = Straight Lead SR = Straight Lead (RoHS)	T = Tape & Reel W = Waffle Pack F = Packaged in foam Z = Special

Example: **M2EM201B474K3J1001W** Capacitors SMPS P-Series - 2 chips, 2324, BX, 200V, 0.47µF±10%, "J" Leads, Waffle Pack

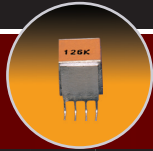


Capacitors - SMPS Switch-Mode Stacked Capacitors

Capacitance Values & Mechanical Characteristics

AMERICAN
CASE SIZE

Size Code	NPO Max Capacitance (µF)				BX Max Capacitance (µF)				X7R Max Capacitance (µF)				Mechanical Characteristics						Leads Per Side	
	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	A	B	C	D	D	E		F
EM	0.07	0.05	0.04	0.02	1.3	.70	.37	.17	3.0	2.2	1.0	.50	.120	.185	.250	0.224	0.275	.300	.080	3
	0.14	0.10	0.08	.04	2.6	1.4	.074	0.34	6.0	4.4	2.0	1.0	.240	.305						
	0.21	0.15	0.12	0.06	3.9	2.1	1.1	0.51	9	6.6	3.0	1.5	.360	.425						
	0.28	0.20	0.16	0.08	5.2	2.8	1.5	0.68	12	8.8	4.0	2.0	.480	.545						
	0.35	0.25	0.20	0.10	6.5	3.5	1.8	0.85	15	11	5.0	2.5	.650	.715						
FP	0.22	0.15	0.12	0.07	4.0	2.0	1.1	0.50	9	6.5	3.0	1.5	.120	.185	.400	0.350	0.425	.440	.180	4
	0.44	0.30	0.24	0.14	8.0	4.0	2.2	1.0	18	13	6	3.0	.240	.305						
	0.66	0.45	0.36	0.21	12	6.0	3.3	1.5	27	19	9	4.5	.360	.425						
	0.88	0.60	.48	0.28	16	8	4.4	2.0	36	26	12	6.0	.480	.545						
	1.1	0.75	0.60	0.35	20	10	5.5	2.5	45	32	15	7.5	.650	.715						
NF	0.70	0.50	0.39	0.22	10	6.8	3.5	1.5	28	20	9.5	4.7	.120	.185	.450	0.950	1.075	.500	.180	10
	1.4	1.0	0.78	0.44	20	13	7.0	3.0	56	40	19	9.4	.240	.305						
	2.1	1.5	1.2	0.66	30	20	10	4.5	84	60	28	14	.360	.425						
	2.8	2.0	1.5	0.88	40	27	14	6.0	112	80	38	18	.480	.545						
	3.5	2.5	2.0	1.1	50	34	17	7.5	140	100	47	23	.650	.715						
NF	1.4	1.0	0.75	0.44	20	13	7	3.	50	4	19	9.4	.120	.185	.450	1.850	2.075	.500	.180	2
	2.8	2.0	1.5	0.88	40	27	14	6.0	100	80	38	18	.240	.305						
	4.2	3.0	2.2	1.3	60	40	21	9.0	150	120	57	27	.360	.425						
	5.6	4.0	3.0	1.8	80	54	28	12	200	160	76	36	.480	.545						
	7.0	5.0	3.7	2.2	100	68	35	15	250	200	95	46	.650	.715						
NF	2.0	1.4	1.0	0.6	30	19	10	5	75	55	25	14	.120	.185	.800	1.450	1.535	.870	.530	15
	4.0	2.8	2.0	1.2	60	38	20	9	150	110	50	28	.240	.305						
	6.0	4.2	3.0	1.8	90	57	30	13	220	160	75	42	.360	.425						
	8.0	5.6	4.0	2.4	120	76	40	18	300	220	100	56	.480	.545						
	10	7.0	5.0	3.0	150	95	50	22	370	270	125	70	.650	.715						
HM	4.0	2.8	2.2	1.2	69	40	20	9	16	110	50	25	.120	.185	1.250	1.950	2.075	1.350	.980	20
	8	5.6	4.4	2.4	130	80	40	18	320	220	100	50	.240	.305						
	12	8.4	6.6	3.6	200	120	60	27	480	330	150	75	.360	.425						
	16	11	8.8	4.8	270	160	80	36	640	440	200	100	.480	.545						
	20	14	11	6	340	200	100	45	800	550	250	125	.650	.715						



Capacitors -SMPS Switch-Mode Stacked Capacitors

Capacitance Values & Mechanical Characteristics

EUROPEAN
CASE SIZE

Size Code	NP0 Max Capacitance (µF)				BX Max Capacitance (µF)				X7R Max Capacitance (µF)				Mechanical Characteristics								Leads Per Side
	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	A (max)		C +/- 0.5mm (.20")		D (max)		E (max)		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	In	mm	In	mm	In	mm	In	
HM	0.13	0.09	0.07	0.045	2.2	1.5	0.8	0.35	5.0	4.0	2.5	1.0	3.8	0.150	8.2	0.322	8.7	.0342	9.2	0.362	3
	0.26	0.18	0.14	0.09	4.4	3.0	1.6	0.70	10	8.0	5.0	2.0	7.4	0.291							
	0.39	0.27	0.21	0.13	6.6	4.5	2.4	1.0	15	12	7.5	3.0	11.1	0.437							
	0.52	0.36	0.28	0.18	8.8	6.0	3.2	1.4	20	16	10	4.0	14.8	0.583							
HM	0.22	0.15	0.12	0.08	3.9	2.5	1.4	0.60	9.0	6.5	4.0	1.8	3.8	0.150	10.2	0.400	10.7	.0421	10.7	0.421	4
	0.44	0.30	0.24	0.16	7.8	5.0	2.8	1.2	18	13	8.0	3.6	7.4	0.291							
	0.66	0.45	0.36	0.24	11	7.5	4.2	1.8	27	19	12	5.4	11.1	0.437							
	0.88	0.60	0.48	0.32	15	10	5.5	3.0	36	26	16	7.2	14.8	0.583							
HM	0.4	0.30	0.22	0.15	7.0	4.5	2.5	1.0	16	12	7.5	3.3	3.8	0.150	14.0	0.551	13.6	0.535	14.9	0.586	5
	0.8	0.60	0.44	0.30	14	9.0	5.0	2.0	32	24	15	6.6	7.4	1.150							
	1.2	0.90	0.66	0.45	21	13	7.5	3.0	48	36	22	9.9	11.1	0.437							
	1.6	1.2	0.9	0.60	28	18	10	4.0	64	48	30	13	14.8	0.583							
HV	0.7	0.5	0.40	0.25	13	8.5	4.5	2.0	30	22	14	6.0	3.8	0.150	15.2	0.600	21.6	0.850	16.8	0.661	5
	1.4	1.0	0.8	0.5	26	17	9.0	4.0	60	44	28	12	7.4	0.291							
	2.1	1.5	1.2	0.8	39	25	13	6.0	90	66	42	18	11.1	0.437							
	2.8	2.0	1.6	1.0	52	34	18	8.0	120	88	56	24	14.8	0.583							
ND	0.7	0.5	0.40	0.25	13	8.5	4.5	2.2	30	22	14	6.0	3.8	0.150	20.3*	0.800*	16.6	0.653	21.6	0.850	6
	1.4	1.0	0.8	0.5	26	17	9.0	4.0	60	44	28	12	7.4	0.291							
	2.1	1.5	1.2	0.8	39	25	13	6.0	90	66	42	18	11.1	0.437							
	2.8	2.0	1.6	1.0	52	34	18	8.0	120	88	56	24	14.8	0.583							
ND	0.8	0.6	0.50	.30	15	10	5.5	2.2	35	25	16	7.0	3.8	0.150	10.2	0.400	38.2	1.503	18.9	0.744	14
	1.6	1.2	1.0	0.60	30	20	11	4.4	70	50	32	14	7.4	0.291							
	2.4	1.8	1.5	0.90	45	30	16	6.6	100	75	48	21	11.1	0.437							
	3.2	2.4	2.0	1.2	60	40	22	8.8	140	100	64	28	14.8	0.583							
NK	1.4	1.0	0.75	0.50	24	15	8.5	3.5	50	40	25	11	3.8	0.150	15.2	0.600	38.2	1.503	12.0	0.472	14
	2.8	2.0	1.5	1.0	48	30	17	7.0	100	80	50	22	7.4	0.291							
	3.2	3.0	2.2	2.0	72	45	25	10	150	120	75	33	11.1	0.437							
	5.6	4.0	3.0	3.0	96	60	34	14	200	160	100	44	14.8	0.583							
NM	2.0	1.4	1.0	0.70	33	22	12	5.0	75	50	35	16	3.8	0.150	20.3*	.800*	40.6	1.598	24.0	0.944	14
	4.0	2.8	2.0	1.4	66	44	24	10	150	100	70	32	7.4	0.291							
	6.0	4.2	3.0	2.1	99	66	36	15	220	150	100	48	11.1	0.437							
	8.0	5.6	4.0	2.8	130	88	48	20	300	200	140	64	14.8	0.583							