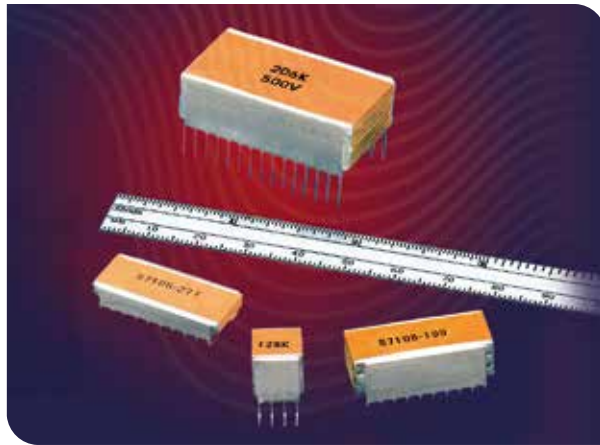


# Capacitors (SMPS) Switchmode® Stacked



## Features

- NP0 & X7R, 50–500V; custom sizes, voltages, and values
- MIL-PRF-49470: P-Series (87106 & 88011), E-Series (European leads)
- T-Series: 200°C for down-hole and engine control applications

## Common Applications

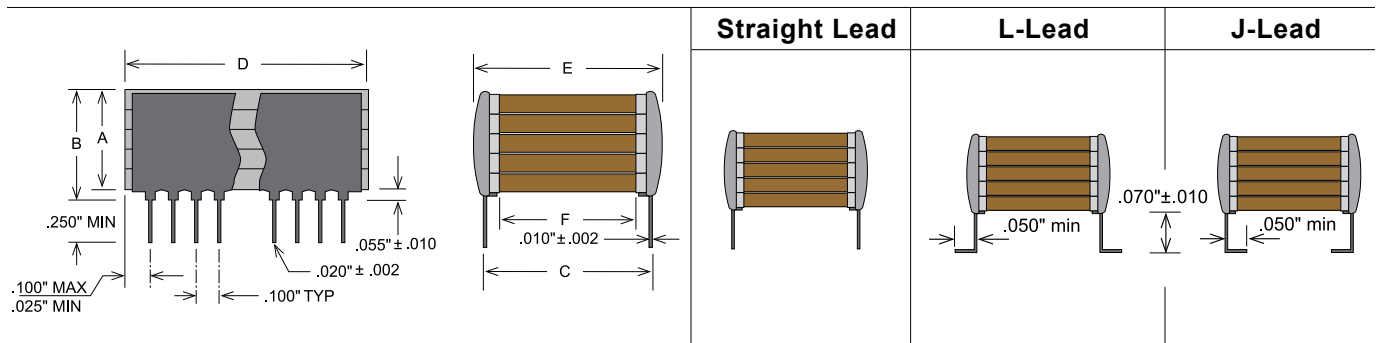
- Voltage Multipliers
- High Voltage Power Supplies
- Very High Frequency Switchers

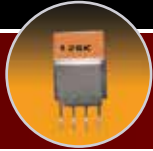
### HOW TO ORDER

M	2	EM	201	B	474	K	3	J1	001	W
Subfamily	# of Chips	Size	Voltage	DTC	Capacitance	Tolerance	Mark	Termination	Special Code	Pack
L = P Series BME	1 = 1 Chip	See chart table "Cap Values & Mechanical Characteristics"	500 = 50V	G = NP0/COG	1st two digits are significant.	J = ±5%	1 = No Mark 3 = Cap Code & Tol Z = Special Code	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)	001 = Default Catalog Item 003 = 1st special code 999 = Last Special Code	T = Tape & Reel W = Waffle Pack F = Packaged in foam Z = Special
M = P Series PME	2 = 2 Chips		101 = 100V	B = BX		3rd digit denotes number of zeros.				
D = E Series BME	3 = 3 Chips		201 = 200V	W = X7R	101 = 100pF 102 = 1000pF					
E = E Series PME	4 = 4 Chips		501 = 500V							
R = T Series BME	5 = 5 Chips					N = ±30%				
T = T Series PME	N1 = BME Mini SM 1 Chip				X = +80%/-20%					
	N2 = BME Min SM 2 Chips				P = +100%/0%					

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

### Case Size





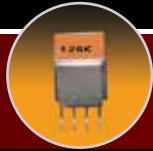
**Capacitors**  
**(SMPS) Switchmode® Stacked**

Capacitance Values & Mechanical

American Case Size (P-Series)

**Note:** X = Number of Stacks

Size Code Legacy	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")	B (max")	C (±.025")	Dim (min")	Dmax (min")	E (min")		F (min")
EM PX5	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 PX4	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 PX3	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						
NH PX1	1.4	1.0	0.75	0.44	20	13	7	3.	50	40	19	9.4	.120	.185	.450	1.950	2.075	.500	.180	20
	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						
NM PX2	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						
MH PX6	4.0	2.8	2.2	1.2	69	40	20	9	160	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) Switchmode® Stacked**

**Capacitance Values & Mechanical**

**European Case Size (E-Series)**

Size Code Legacy	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	In	mm	In	mm	In	mm	In	mm	In	mm	In	mm	In	mm	In	mm	In	mm	In	
FB E04	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							
FP E05	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							
HH E06	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 E07	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	7
	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							
KH E01	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 E08	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	12	0.472	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 E02	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	18.9	0.744	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 E09	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							