

SMM Series

- Downsize, longer life, and high ripple version of SMH series
- Endurance with ripple current : 85°C 3000 hours
- Non solvent-proof type
- Pb-free design

SMM

↓
SMH
↑
downsized
longer life
higher ripple

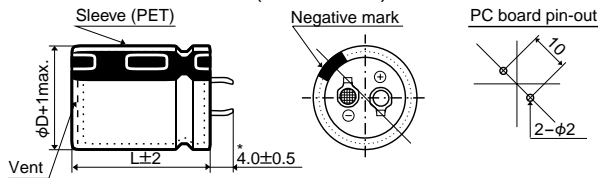


◆SPECIFICATIONS

Items	Characteristics		
Category	-25 to +85°C		
Temperature Range	-25 to +85°C		
Rated Voltage Range	160 to 450V _{dc}		
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)		
Leakage Current	$I \leq 3\sqrt{CV}$ (at 20°C after 5 minutes) Where, I : Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V)		
Dissipation Factor (tanδ)	Rated voltage (V _{dc})	160 to 400V	420 & 450V
	tanδ (Max.)	0.15	0.20
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	160 to 400V	420 & 450V
	Z(-25°C)/Z(+20°C)	4	8
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 3000 hours at 85°C.		
	Capacitance change	≤±20% of the initial value	
	D.F. (tanδ)	≤200% of the initial specified value	
	Leakage current	≤The initial specified value	
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours at 85°C without voltage applied.		
	Capacitance change	≤±15% of the initial value	
	D.F. (tanδ)	≤150% of the initial specified value	
	Leakage current	≤The initial specified value	

◆DIMENSIONS [mm]

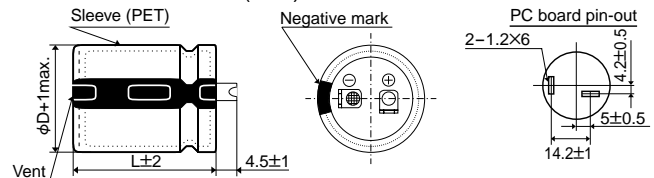
- Terminal Code : VS (φ20 to φ35) : Standard



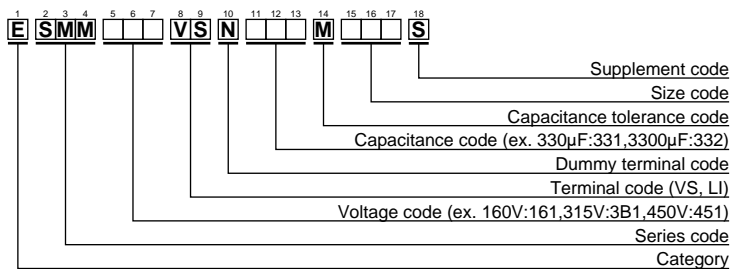
*φD=35mm : 3.5±0.5mm

No plastic disk is the standard design

- Terminal Code : LI (φ35)



◆PART NUMBERING SYSTEM



Please refer to "A guide to global code (snap-in type)"

◆RATED RIPPLE CURRENT MULTIPLIERS

- Frequency Multipliers

Frequency(Hz)	50	120	300	1k	10k	50k
160 to 250V _{dc}	0.81	1.00	1.17	1.32	1.45	1.50
315 to 450V _{dc}	0.77	1.00	1.16	1.30	1.41	1.43

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (Arms/85°C,120Hz)	Part No.	WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (Arms/85°C,120Hz)	Part No.	
160	270	20×25	0.15	1.28	ESMM161VSN271MN25S	180	1200	25.4×45	0.15	3.63	ESMM181VSN122MQ45S	
	270	22×20	0.15	1.30	ESMM161VSN271MP20S		1200	30×35	0.15	3.55	ESMM181VSN122MR35S	
	330	20×25	0.15	1.55	ESMM161VSN331MN25S		1200	35×30	0.15	3.49	ESMM181VSN122MA30S	
	390	20×30	0.15	1.63	ESMM161VSN391MN30S		1500	30×40	0.15	4.10	ESMM181VSN152MR40S	
	390	22×25	0.15	1.63	ESMM161VSN391MP25S		1500	35×35	0.15	4.02	ESMM181VSN152MA35S	
	390	25.4×20	0.15	1.62	ESMM161VSN391MQ20S		1800	30×45	0.15	4.55	ESMM181VSN182MR45S	
	470	20×30	0.15	1.90	ESMM161VSN471MN30S		1800	35×35	0.15	4.54	ESMM181VSN182MA35S	
	470	22×30	0.15	1.86	ESMM161VSN471MP30S		2200	35×40	0.15	4.83	ESMM181VSN222MA40S	
	470	25.4×25	0.15	1.86	ESMM161VSN471MQ25S		2700	35×50	0.15	5.30	ESMM181VSN272MA50S	
	560	20×35	0.15	2.14	ESMM161VSN561MN35S		200	220	20×25	0.15	1.19	ESMM201VSN221MN25S
	560	22×30	0.15	2.15	ESMM161VSN561MP30S			220	22×20	0.15	1.18	ESMM201VSN221MP20S
	560	25.4×25	0.15	2.15	ESMM161VSN561MQ25S			270	20×25	0.15	1.39	ESMM201VSN271MN25S
	560	30×20	0.15	2.05	ESMM161VSN561MR20S			270	22×25	0.15	1.37	ESMM201VSN271MP25S
	680	20×40	0.15	2.35	ESMM161VSN681MN40S			270	25.4×20	0.15	1.35	ESMM201VSN271MQ20S
	680	22×35	0.15	2.35	ESMM161VSN681MP35S			330	20×30	0.15	1.56	ESMM201VSN331MN30S
	680	25.4×30	0.15	2.33	ESMM161VSN681MQ30S			330	22×25	0.15	1.51	ESMM201VSN331MP25S
	680	30×25	0.15	2.33	ESMM161VSN681MR25S			330	25.4×20	0.15	1.49	ESMM201VSN331MQ20S
	680	35×20	0.15	2.26	ESMM161VSN681MA20S			390	20×35	0.15	1.74	ESMM201VSN391MN35S
	820	20×45	0.15	2.64	ESMM161VSN821MN45S			390	22×30	0.15	1.73	ESMM201VSN391MP30S
	820	22×40	0.15	2.68	ESMM161VSN821MP40S			390	25.4×25	0.15	1.71	ESMM201VSN391MQ25S
	820	25.4×30	0.15	2.65	ESMM161VSN821MQ30S			390	30×20	0.15	1.71	ESMM201VSN391MR20S
	820	30×25	0.15	2.64	ESMM161VSN821MR25S			470	20×35	0.15	2.03	ESMM201VSN471MN35S
	820	35×20	0.15	2.49	ESMM161VSN821MA20S			470	22×30	0.15	1.97	ESMM201VSN471MP30S
	1000	22×45	0.15	3.02	ESMM161VSN102MP45S			470	25.4×25	0.15	1.95	ESMM201VSN471MQ25S
	1000	25.4×35	0.15	3.00	ESMM161VSN102MQ35S			470	30×20	0.15	1.88	ESMM201VSN471MR20S
	1000	30×30	0.15	2.96	ESMM161VSN102MR30S			560	20×40	0.15	2.18	ESMM201VSN561MN40S
	1000	35×25	0.15	3.13	ESMM161VSN102MA25S			560	22×35	0.15	2.18	ESMM201VSN561MP35S
	1200	22×50	0.15	3.47	ESMM161VSN122MP50S			560	25.4×30	0.15	2.15	ESMM201VSN561MQ30S
	1200	25.4×40	0.15	3.43	ESMM161VSN122MQ40S			560	30×25	0.15	2.15	ESMM201VSN561MR25S
	1200	30×30	0.15	3.41	ESMM161VSN122MR30S			560	35×20	0.15	2.05	ESMM201VSN561MA20S
	1200	35×25	0.15	3.40	ESMM161VSN122MA25S			680	20×50	0.15	2.48	ESMM201VSN681MN50S
	1500	25.4×50	0.15	3.96	ESMM161VSN152MQ50S			680	22×40	0.15	2.48	ESMM201VSN681MP40S
	1500	30×35	0.15	3.96	ESMM161VSN152MR35S			680	25.4×30	0.15	2.48	ESMM201VSN681MQ30S
1500	35×30	0.15	3.94	ESMM161VSN152MA30S	680	30×25		0.15	2.48	ESMM201VSN681MR25S		
1800	30×40	0.15	4.31	ESMM161VSN182MR40S	680	35×20		0.15	2.36	ESMM201VSN681MA20S		
1800	35×35	0.15	4.28	ESMM161VSN182MA35S	820	22×45		0.15	2.81	ESMM201VSN821MP45S		
2200	30×50	0.15	4.96	ESMM161VSN222MR50S	820	25.4×35		0.15	2.79	ESMM201VSN821MQ35S		
2200	35×40	0.15	4.96	ESMM161VSN222MA40S	820	30×30		0.15	2.80	ESMM201VSN821MR30S		
2700	35×45	0.15	5.57	ESMM161VSN272MA45S	820	35×25		0.15	2.83	ESMM201VSN821MA25S		
3300	35×50	0.15	6.21	ESMM161VSN332MA50S	1000	22×50		0.15	3.28	ESMM201VSN102MP50S		
180	220	22×20	0.15	1.18	ESMM181VSN221MP20S	1000		25.4×40	0.15	3.28	ESMM201VSN102MQ40S	
	270	20×25	0.15	1.29	ESMM181VSN271MN25S	1000		30×35	0.15	3.15	ESMM201VSN102MR35S	
	330	20×30	0.15	1.77	ESMM181VSN331MN30S	1000	35×30	0.15	3.26	ESMM201VSN102MA30S		
	330	22×25	0.15	1.77	ESMM181VSN331MP25S	1200	25.4×45	0.15	3.61	ESMM201VSN122MQ45S		
	330	25.4×20	0.15	1.49	ESMM181VSN331MQ20S	1200	30×35	0.15	3.61	ESMM201VSN122MR35S		
	390	20×30	0.15	1.84	ESMM181VSN391MN30S	1200	35×30	0.15	3.57	ESMM201VSN122MA30S		
	390	22×25	0.15	1.84	ESMM181VSN391MP25S	1500	30×45	0.15	4.13	ESMM201VSN152MR45S		
	470	20×35	0.15	1.91	ESMM181VSN471MN35S	1500	35×35	0.15	4.06	ESMM201VSN152MA35S		
	470	22×30	0.15	1.91	ESMM181VSN471MP30S	1800	30×50	0.15	4.60	ESMM201VSN182MR50S		
	470	25.4×25	0.15	2.08	ESMM181VSN471MQ25S	1800	35×40	0.15	4.59	ESMM201VSN182MA40S		
	470	30×20	0.15	1.88	ESMM181VSN471MR20S	2200	35×45	0.15	5.25	ESMM201VSN222MA45S		
	560	20×40	0.15	2.15	ESMM181VSN561MN40S	220	180	22×20	0.15	1.06	ESMM221VSN181MP20S	
	560	22×35	0.15	2.25	ESMM181VSN561MP35S		220	20×25	0.15	1.25	ESMM221VSN221MN25S	
	560	25.4×25	0.15	2.25	ESMM181VSN561MQ25S		270	20×30	0.15	1.46	ESMM221VSN271MN30S	
	680	20×45	0.15	2.41	ESMM181VSN681MN45S		270	22×25	0.15	1.47	ESMM221VSN271MP25S	
	680	22×35	0.15	2.48	ESMM181VSN681MP35S		270	25.4×20	0.15	1.35	ESMM221VSN271MQ20S	
	680	25.4×30	0.15	2.50	ESMM181VSN681MQ30S		330	20×35	0.15	1.64	ESMM221VSN331MN35S	
	680	30×25	0.15	2.46	ESMM181VSN681MR25S		330	22×30	0.15	1.70	ESMM221VSN331MP30S	
	680	35×20	0.15	2.26	ESMM181VSN681MA20S		330	25.4×25	0.15	1.69	ESMM221VSN331MQ25S	
	820	20×50	0.15	2.72	ESMM181VSN821MN50S		330	30×20	0.15	1.58	ESMM221VSN331MR20S	
	820	22×40	0.15	2.86	ESMM181VSN821MP40S		390	20×35	0.15	1.84	ESMM221VSN391MN35S	
	820	25.4×35	0.15	2.75	ESMM181VSN821MQ35S		390	22×30	0.15	1.89	ESMM221VSN391MP30S	
	820	30×25	0.15	2.69	ESMM181VSN821MR25S		390	25.4×25	0.15	1.84	ESMM221VSN391MQ25S	
	1000	22×50	0.15	3.10	ESMM181VSN102MP50S		390	30×20	0.15	1.71	ESMM221VSN391MR20S	
	1000	25.4×40	0.15	3.06	ESMM181VSN102MQ40S		470	20×40	0.15	2.12	ESMM221VSN471MN40S	
	1000	30×30	0.15	3.10	ESMM181VSN102MR30S		470	22×35	0.15	2.08	ESMM221VSN471MP35S	
	1000	35×25	0.15	2.98	ESMM181VSN102MA25S	470	25.4×30	0.15	2.08	ESMM221VSN471MQ30S		

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φDXL(mm)	tanδ	Rated ripple current (Arms/85°C,120Hz)	Part No.	WV (Vdc)	Cap (μF)	Case size φDXL(mm)	tanδ	Rated ripple current (Arms/85°C,120Hz)	Part No.
220	470	30×25	0.15	2.12	ESMM221VSN471MR25S	315	180	22×30	0.15	1.29	ESMM3B1VSN181MP30S
	470	35×20	0.15	1.88	ESMM221VSN471MA20S		180	25.4×25	0.15	1.38	ESMM3B1VSN181MQ25S
	560	20×50	0.15	2.33	ESMM221VSN561MN50S		180	30×20	0.15	1.16	ESMM3B1VSN181MR20S
	560	22×40	0.15	2.33	ESMM221VSN561MP40S		220	20×35	0.15	1.30	ESMM3B1VSN221MN35S
	560	25.4×35	0.15	2.38	ESMM221VSN561MQ35S		220	22×30	0.15	1.41	ESMM3B1VSN221MP30S
	560	30×25	0.15	2.31	ESMM221VSN561MR25S		220	25.4×25	0.15	1.47	ESMM3B1VSN221MQ25S
	560	35×20	0.15	2.14	ESMM221VSN561MA20S		220	30×20	0.15	1.28	ESMM3B1VSN221MR20S
	680	22×45	0.15	2.63	ESMM221VSN681MP45S		270	20×45	0.15	1.52	ESMM3B1VSN271MN45S
	680	25.4×35	0.15	2.68	ESMM221VSN681MQ35S		270	22×35	0.15	1.68	ESMM3B1VSN271MP35S
	680	30×30	0.15	2.62	ESMM221VSN681MR30S		270	25.4×30	0.15	1.70	ESMM3B1VSN271MQ30S
	680	35×25	0.15	2.58	ESMM221VSN681MA25S		270	30×25	0.15	1.55	ESMM3B1VSN271MR25S
	820	25.4×45	0.15	3.01	ESMM221VSN821MQ45S		270	35×20	0.15	1.43	ESMM3B1VSN271MA20S
	820	30×35	0.15	2.99	ESMM221VSN821MP35S		330	20×50	0.15	1.73	ESMM3B1VSN331MP30S
	820	35×30	0.15	2.79	ESMM221VSN821MA30S		330	22×40	0.15	1.91	ESMM3B1VSN331MP40S
	1000	25.4×50	0.15	3.40	ESMM221VSN102MQ50S		330	25.4×35	0.15	1.94	ESMM3B1VSN331MQ35S
	1000	30×35	0.15	3.42	ESMM221VSN102MR35S		330	30×25	0.15	1.98	ESMM3B1VSN331MR25S
	1000	35×30	0.15	3.29	ESMM221VSN102MA30S		390	22×45	0.15	2.07	ESMM3B1VSN391MP45S
	1200	30×40	0.15	3.88	ESMM221VSN122MR40S		390	25.4×40	0.15	2.11	ESMM3B1VSN391MQ40S
	1200	35×35	0.15	3.68	ESMM221VSN122MA35S		390	30×30	0.15	2.15	ESMM3B1VSN391MR30S
	1500	30×50	0.15	4.44	ESMM221VSN152MR50S		390	35×25	0.15	1.95	ESMM3B1VSN391MA25S
1500	35×40	0.15	4.10	ESMM221VSN152MA40S	470	25.4×45	0.15	2.31	ESMM3B1VSN471MQ45S		
1800	35×45	0.15	4.52	ESMM221VSN182MA45S	470	30×35	0.15	2.38	ESMM3B1VSN471MR35S		
250	150	22×20	0.15	0.97	ESMM251VSN151MP20S	470	35×30	0.15	2.46	ESMM3B1VSN471MA30S	
	180	20×25	0.15	1.20	ESMM251VSN181MN25S	560	25.4×50	0.15	2.46	ESMM3B1VSN561MQ50S	
	180	22×20	0.15	1.06	ESMM251VSN181MP20S	560	30×35	0.15	2.63	ESMM3B1VSN561MR35S	
	220	20×25	0.15	1.26	ESMM251VSN221MN25S	560	35×30	0.15	2.69	ESMM3B1VSN561MA30S	
	220	22×25	0.15	1.24	ESMM251VSN221MP25S	680	30×45	0.15	2.82	ESMM3B1VSN681MR45S	
	220	25.4×20	0.15	1.22	ESMM251VSN221MQ20S	680	35×35	0.15	3.05	ESMM3B1VSN681MA35S	
	270	20×30	0.15	1.42	ESMM251VSN271MN30S	820	30×50	0.15	3.28	ESMM3B1VSN821MR50S	
	270	22×25	0.15	1.50	ESMM251VSN271MP25S	820	35×40	0.15	3.45	ESMM3B1VSN821MA40S	
	330	20×35	0.15	1.68	ESMM251VSN331MN35S	1000	35×45	0.15	3.59	ESMM3B1VSN102MA45S	
	330	22×30	0.15	1.66	ESMM251VSN331MP30S	350	82	22×20	0.15	0.72	ESMM351VSN820MP20S
	330	25.4×25	0.15	1.61	ESMM251VSN331MQ25S		100	20×25	0.15	0.81	ESMM351VSN101MN25S
	330	30×20	0.15	1.58	ESMM251VSN331MR20S		120	20×30	0.15	0.96	ESMM351VSN121MN30S
	390	20×40	0.15	1.92	ESMM251VSN391MN40S		120	22×25	0.15	1.04	ESMM351VSN121MP25S
	390	22×35	0.15	1.88	ESMM251VSN391MP35S		120	25.4×20	0.15	0.90	ESMM351VSN121MQ20S
	390	25.4×30	0.15	1.88	ESMM251VSN391MQ30S		150	20×30	0.15	1.10	ESMM351VSN151MN30S
	390	30×25	0.15	1.86	ESMM251VSN391MR25S		150	22×30	0.15	1.20	ESMM351VSN151MP30S
	390	35×20	0.15	1.71	ESMM251VSN391MA20S		150	25.4×25	0.15	1.22	ESMM351VSN151MQ25S
	470	20×50	0.15	2.06	ESMM251VSN471MN50S		150	30×20	0.15	1.06	ESMM351VSN151MR20S
	470	22×35	0.15	2.15	ESMM251VSN471MP35S		180	20×35	0.15	1.24	ESMM351VSN181MN35S
	470	25.4×35	0.15	2.15	ESMM251VSN471MQ35S		180	22×30	0.15	1.34	ESMM351VSN181MP30S
	470	30×25	0.15	2.05	ESMM251VSN471MR25S		180	25.4×25	0.15	1.37	ESMM351VSN181MQ25S
	470	35×20	0.15	1.88	ESMM251VSN471MA20S		180	30×20	0.15	1.16	ESMM351VSN181MR20S
	560	22×40	0.15	2.48	ESMM251VSN561MP40S		220	20×45	0.15	1.37	ESMM351VSN221MN45S
	560	25.4×35	0.15	2.35	ESMM251VSN561MQ35S		220	22×35	0.15	1.47	ESMM351VSN221MP35S
	560	30×25	0.15	2.35	ESMM251VSN561MR25S		220	25.4×30	0.15	1.53	ESMM351VSN221MQ30S
	680	22×50	0.15	2.61	ESMM251VSN681MP50S		220	30×25	0.15	1.54	ESMM351VSN221MR25S
	680	25.4×40	0.15	2.67	ESMM251VSN681MQ40S		220	35×20	0.15	1.29	ESMM351VSN221MA20S
	680	30×30	0.15	2.71	ESMM251VSN681MR30S		270	20×50	0.15	1.56	ESMM351VSN271MN50S
	680	35×25	0.15	2.58	ESMM251VSN681MA25S		270	22×40	0.15	1.70	ESMM351VSN271MP40S
	820	25.4×45	0.15	3.01	ESMM251VSN821MQ45S		270	25.4×35	0.15	1.73	ESMM351VSN271MQ35S
	820	30×35	0.15	2.98	ESMM251VSN821MR35S		270	30×25	0.15	1.80	ESMM351VSN271MR25S
	820	35×30	0.15	2.96	ESMM251VSN821MA30S		270	35×20	0.15	1.49	ESMM351VSN271MA20S
	1000	30×40	0.15	3.56	ESMM251VSN102MR40S		330	22×45	0.15	1.87	ESMM351VSN331MP45S
	1000	35×35	0.15	3.48	ESMM251VSN102MA35S		330	25.4×35	0.15	1.97	ESMM351VSN331MQ35S
	1200	30×45	0.15	3.99	ESMM251VSN122MR45S		330	30×30	0.15	2.03	ESMM351VSN331MR30S
	1200	35×35	0.15	3.84	ESMM251VSN122MA35S		330	35×25	0.15	1.80	ESMM351VSN331MA25S
1500	35×40	0.15	4.33	ESMM251VSN152MA40S	390		25.4×40	0.15	2.14	ESMM351VSN391MQ40S	
1800	35×50	0.15	4.54	ESMM251VSN182MA50S	390		30×35	0.15	2.23	ESMM351VSN391MR35S	
315	100	22×20	0.15	0.79	ESMM3B1VSN101MP20S		390	35×30	0.15	2.30	ESMM351VSN391MA30S
	120	20×25	0.15	0.89	ESMM3B1VSN121MN25S		470	25.4×50	0.15	2.55	ESMM351VSN471MQ50S
	120	25.4×20	0.15	0.90	ESMM3B1VSN121MQ20S		470	30×35	0.15	2.53	ESMM351VSN471MR35S
	150	20×30	0.15	1.05	ESMM3B1VSN151MN30S		470	35×30	0.15	2.55	ESMM351VSN471MA30S
	150	22×25	0.15	1.06	ESMM3B1VSN151MP25S		560	30×40	0.15	2.73	ESMM351VSN561MR40S
	150	25.4×20	0.15	1.00	ESMM3B1VSN151MQ20S		560	35×35	0.15	2.75	ESMM351VSN561MA35S
	180	20×35	0.15	1.18	ESMM3B1VSN181MN35S		680	30×50	0.15	3.15	ESMM351VSN681MR50S

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φDXL(mm)	tanδ	Rated ripple current (Arms/85°C,120Hz)	Part No.	WV (Vdc)	Cap (μF)	Case size φDXL(mm)	tanδ	Rated ripple current (Arms/85°C,120Hz)	Part No.	
350	680	35×40	0.15	3.15	ESMM351VSN681MA40S	420	180	20×50	0.20	1.27	ESMM421VSN181MN50S	
	820	35×45	0.15	3.47	ESMM351VSN821MA45S		180	22×40	0.20	1.33	ESMM421VSN181MP40S	
	1000	35×50	0.15	3.60	ESMM351VSN102MA50S		180	25.4×35	0.20	1.42	ESMM421VSN181MQ35S	
400	68	20×25	0.15	0.75	ESMM401VSN680MN25S		180	30×25	0.20	1.48	ESMM421VSN181MR25S	
	68	22×20	0.15	0.65	ESMM401VSN680MP20S		180	35×20	0.20	1.16	ESMM421VSN181MA20S	
	82	20×25	0.15	0.82	ESMM401VSN820MN25S		220	22×45	0.20	1.55	ESMM421VSN221MP45S	
	82	22×25	0.15	0.84	ESMM401VSN820MP25S		220	25.4×35	0.20	1.58	ESMM421VSN221MQ35S	
	82	25.4×20	0.15	0.74	ESMM401VSN820MQ20S		220	30×30	0.20	1.65	ESMM421VSN221MR30S	
	100	20×30	0.15	0.95	ESMM401VSN101MP30S		220	35×25	0.20	1.47	ESMM421VSN221MA25S	
	100	22×25	0.15	0.99	ESMM401VSN101MP25S		270	25.4×40	0.20	1.74	ESMM421VSN271MQ40S	
	100	25.4×20	0.15	0.82	ESMM401VSN101MQ20S		270	30×35	0.20	1.90	ESMM421VSN271MR35S	
	120	20×35	0.15	1.07	ESMM401VSN121MN35S		270	35×30	0.20	1.94	ESMM421VSN271MA30S	
	120	22×30	0.15	1.09	ESMM401VSN121MP30S		330	25.4×50	0.20	2.20	ESMM421VSN331MQ50S	
	120	25.4×25	0.15	1.13	ESMM401VSN121MQ25S		330	30×35	0.20	1.98	ESMM421VSN331MR35S	
	120	30×20	0.15	0.95	ESMM401VSN121MR20S		330	35×35	0.20	2.17	ESMM421VSN331MA35S	
	150	20×40	0.15	1.22	ESMM401VSN151MN40S		390	30×40	0.20	2.22	ESMM421VSN391MR40S	
	150	22×35	0.15	1.24	ESMM401VSN151MP35S		390	35×35	0.20	2.27	ESMM421VSN391MA35S	
	150	25.4×30	0.15	1.27	ESMM401VSN151MQ30S		470	30×45	0.20	2.50	ESMM421VSN471MR45S	
	150	30×25	0.15	1.20	ESMM401VSN151MR25S		470	35×40	0.20	2.61	ESMM421VSN471MA40S	
	180	20×45	0.15	1.28	ESMM401VSN181MN45S		560	35×45	0.20	2.95	ESMM421VSN561MA45S	
	180	22×40	0.15	1.41	ESMM401VSN181MP40S		680	35×50	0.20	3.15	ESMM421VSN681MA50S	
	180	25.4×30	0.15	1.44	ESMM401VSN181MQ30S		450	47	22×20	0.20	0.54	ESMM451VSN470MP20S
	180	30×25	0.15	1.52	ESMM401VSN181MR25S			56	20×25	0.20	0.61	ESMM451VSN560MN25S
	180	35×20	0.15	1.16	ESMM401VSN181MA20S			56	22×20	0.20	0.59	ESMM451VSN560MP20S
	220	20×50	0.15	1.41	ESMM401VSN221MN50S	68		20×30	0.20	0.71	ESMM451VSN680MN30S	
	220	22×45	0.15	1.58	ESMM401VSN221MP45S	68		22×25	0.20	0.71	ESMM451VSN680MP25S	
	220	25.4×35	0.15	1.64	ESMM401VSN221MQ35S	68		25.4×20	0.20	0.68	ESMM451VSN680MQ20S	
	220	30×30	0.15	1.66	ESMM401VSN221MR30S	82		20×35	0.20	0.80	ESMM451VSN820MN35S	
	220	35×25	0.15	1.47	ESMM401VSN221MA25S	82		22×25	0.20	0.86	ESMM451VSN820MP25S	
	270	22×50	0.15	1.65	ESMM401VSN271MP50S	82		25.4×20	0.20	0.74	ESMM451VSN820MQ20S	
	270	25.4×40	0.15	1.79	ESMM401VSN271MQ40S	82		30×20	0.20	0.79	ESMM451VSN820MR20S	
	270	30×30	0.15	1.82	ESMM401VSN271MR30S	100		20×35	0.20	0.88	ESMM451VSN101MN35S	
	270	35×25	0.15	1.63	ESMM401VSN271MA25S	100		22×30	0.20	0.95	ESMM451VSN101MP30S	
	330	25.4×45	0.15	2.00	ESMM401VSN331MQ45S	100		25.4×25	0.20	0.97	ESMM451VSN101MQ25S	
	330	30×35	0.15	2.05	ESMM401VSN331MR35S	100		30×20	0.20	0.87	ESMM451VSN101MR20S	
	330	35×30	0.15	2.05	ESMM401VSN331MA30S	120		20×40	0.20	0.99	ESMM451VSN121MN40S	
	390	25.4×50	0.15	2.12	ESMM401VSN391MQ50S	120		22×35	0.20	1.07	ESMM451VSN121MP35S	
	390	30×40	0.15	2.26	ESMM401VSN391MR40S	120		25.4×30	0.20	1.09	ESMM451VSN121MQ30S	
	390	35×35	0.15	2.28	ESMM401VSN391MA35S	120		30×25	0.20	1.12	ESMM451VSN121MR25S	
470	30×45	0.15	2.51	ESMM401VSN471MR45S	120	35×20		0.20	0.99	ESMM451VSN121MA20S		
470	35×35	0.15	2.54	ESMM401VSN471MA35S	150	20×45		0.20	1.13	ESMM451VSN151MN45S		
560	30×50	0.15	2.85	ESMM401VSN561MR50S	150	22×40		0.20	1.18	ESMM451VSN151MP40S		
560	35×40	0.15	2.85	ESMM401VSN561MA40S	150	25.4×30		0.20	1.25	ESMM451VSN151MQ30S		
680	35×50	0.15	3.10	ESMM401VSN681MA50S	150	30×25		0.20	1.29	ESMM451VSN151MR25S		
420	47	22×20	0.20	0.54	ESMM421VSN470MP20S	150		35×20	0.20	1.06	ESMM451VSN151MA20S	
	56	20×25	0.20	0.58	ESMM421VSN560MN25S	180		22×45	0.20	1.32	ESMM451VSN181MP45S	
	56	22×20	0.20	0.59	ESMM421VSN560MP20S	180		25.4×35	0.20	1.40	ESMM451VSN181MQ35S	
	68	20×25	0.20	0.70	ESMM421VSN680MN25S	180		30×30	0.20	1.45	ESMM451VSN181MR30S	
	68	25.4×20	0.20	0.68	ESMM421VSN680MQ20S	180		35×25	0.20	1.33	ESMM451VSN181MA25S	
	82	20×30	0.20	0.80	ESMM421VSN820MN30S	220		22×50	0.20	1.48	ESMM451VSN221MP50S	
	82	22×25	0.20	0.85	ESMM421VSN820MP25S	220		25.4×40	0.20	1.59	ESMM451VSN221MQ40S	
	82	25.4×20	0.20	0.74	ESMM421VSN820MQ20S	220		30×30	0.20	1.64	ESMM451VSN221MR30S	
	100	20×35	0.20	0.90	ESMM421VSN101MN35S	220		35×25	0.20	1.66	ESMM451VSN221MA25S	
	100	22×30	0.20	0.97	ESMM421VSN101MP30S	270		25.4×45	0.20	1.73	ESMM451VSN271MQ45S	
	100	25.4×25	0.20	0.98	ESMM421VSN101MQ25S	270		30×35	0.20	1.89	ESMM451VSN271MR35S	
	100	30×20	0.20	0.87	ESMM421VSN101MR20S	270		35×30	0.20	1.90	ESMM451VSN271MA30S	
	120	20×35	0.20	1.04	ESMM421VSN121MN35S	330		25.4×50	0.20	2.12	ESMM451VSN331MQ50S	
	120	22×30	0.20	1.07	ESMM421VSN121MP30S	330	30×40	0.20	2.12	ESMM451VSN331MR40S		
	120	25.4×25	0.20	1.08	ESMM421VSN121MQ25S	330	35×35	0.20	2.15	ESMM451VSN331MA35S		
	120	30×20	0.20	0.95	ESMM421VSN121MR20S	390	30×45	0.20	2.35	ESMM451VSN391MR45S		
	150	20×40	0.20	1.17	ESMM421VSN151MN40S	390	35×40	0.20	2.38	ESMM451VSN391MA40S		
	150	22×35	0.20	1.21	ESMM421VSN151MP35S	470	30×50	0.20	2.65	ESMM451VSN471MR50S		
	150	25.4×30	0.20	1.26	ESMM421VSN151MQ30S	470	35×45	0.20	2.68	ESMM451VSN471MA45S		
	150	30×25	0.20	1.30	ESMM421VSN151MR25S	560	35×50	0.20	2.88	ESMM451VSN561MA50S		
	150	35×20	0.20	1.11	ESMM421VSN151MA20S							