

# SMR Series Metallized Polyphenylene Sulfide Film, +150°C, 5.0 – 27.5 mm Lead Spacing, 50 – 400 VDC

## Overview

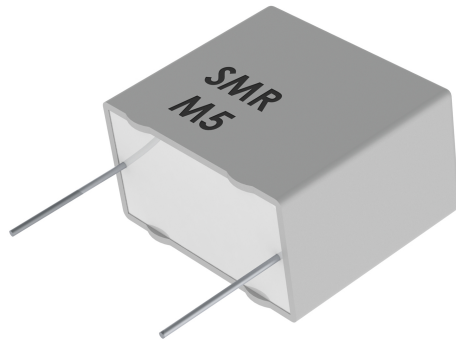
The SMR Series is a metallized polyphenylene sulfide film capacitor with vacuum-evaporated aluminum electrodes. Radial leads of tinned wire are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated in self-extinguishing material meeting the requirements of UL 94 V-0.

## Applications

Typical applications include automotive and other applications with high ambient temperatures, as well as those requiring high stability and low losses. The capacitor offers excellent sound quality in audio applications.

## Benefits

- Voltage range: 50 – 400 VDC; 30 – 200 VAC
- Capacitance range: 0.001 – 22  $\mu$ F
- Lead spacing: 5 – 27.5 mm
- Capacitance tolerance:  $\pm 10\%$ ,  $\pm 20\%$ ,  $\pm 2.5\%$  and  $\pm 5\%$  on request
- Climatic category: 55/150/56, IEC 60068-1
- Tape and reel packaging in accordance with IEC 60286-2
- RoHS Compliant and lead-free terminations
- Category temperature range -55 to +150°C
- Rated temperature +125°C



## Legacy Part Number System

SMR	5	104	K	50	J01	L4	BULK
Series	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Lead Length	Packaging
Metallized PPS	5 = 5.0 7.5 = 7.5 10 = 10.0 15 = 15.0 22.5 = 22.5 27.5 = 27.5	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	H = $\pm 2.5\%$ J = $\pm 5\%$ K = $\pm 10\%$ M = $\pm 20\%$	50 = 50 63 = 63 100 = 100 250 = 250 400 = 400	See Dimension Table	Letter "L" followed by lead length in mm	See Ordering Options Table

## New KEMET Part Number System

F	211	J	F	104	K	050	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Metallized PPS	J = 5.0 K = 7.5 A = 10.0 B = 15.0 D = 22.5 F = 27.5	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	R = $\pm 2.5\%$ J = $\pm 5\%$ K = $\pm 10\%$ M = $\pm 20\%$	050 = 50 063 = 63 100 = 100 250 = 250 400 = 400	See Ordering Options Table

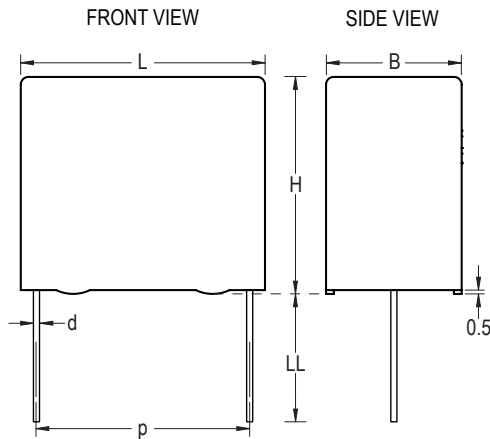
## Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	KEMET Lead and Packaging Code	Legacy Lead and Packaging Code
5	<b>Standard Lead and Packaging Options</b>			
	Bulk – Straight Leads	4.0 +1/-0	C	L4BULK
	Bulk – Straight Leads	16.5 ±0.5	ALG5C	L16.5CBULK
	Tape & Reel (Standard Reel)	H <sub>0</sub> = 18.5 ±0.5	L	L16.5TR18
	<b>Other Lead and Packaging Options</b>			
	Ammo Pack	H <sub>0</sub> = 18.5 ±0.5	R	L16.5TA18
	Tape & Reel (Large Reel)	H <sub>0</sub> = 18.5 ±0.5	P	L16.5LR18
7.5	<b>Standard Lead and Packaging Options</b>			
	Bulk – Straight Leads	4.0 +1/-0	C	L4BULK
	Bulk – Straight Leads	16.5 ±0.5	ALG5C	L16.5CBULK
	Tape & Reel (Standard Reel)	H <sub>0</sub> = 18.5 ±0.5	L	L16.5TR18
	<b>Other Lead and Packaging Options</b>			
	Ammo Pack	H <sub>0</sub> = 18.5 ±0.5	R	L16.5TA18
	Tape & Reel (Large Reel)	H <sub>0</sub> = 18.5 ±0.5	P	L16.5LR18
	Ammo Pack (P <sub>0</sub> = 15 mm)	H <sub>0</sub> = 18.5 ±0.5	XLAF1	XA18
10	<b>Standard Lead and Packaging Options</b>			
	Bulk – Straight Leads	4.0 +1/-0	C	L4BULK
	Bulk – Straight Leads	16.5 ±0.5	ALG5C	L16.5CBULK
	Tape & Reel (Standard Reel)	H <sub>0</sub> = 18.5 ±0.5	L	L16.5TR18
	<b>Other Lead and Packaging Options</b>			
	Tape & Reel (Large Reel)	H <sub>0</sub> = 18.5 ±0.5	P	L16.5LR18
Native 10 formed to 7.5	Ammo Pack	H <sub>0</sub> = 18.5 ±0.5	XLAF1	XA18
	Tape & Reel (Standard Reel)	H <sub>0</sub> = 18.5 ±0.5	XLTF1	XR18

## Ordering Options Table cont'd

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	KEMET Lead and Packaging Code	Legacy Lead and Packaging Code
15	<b>Standard Lead and Packaging Options</b>			
	Bulk – Straight Leads	4.0 +1/-0	C	L4BULK
	Bulk – Straight Leads	16.5 ±0.5	ALG5C	L16.5CBULK
	Tape & Reel (Standard Reel)	H <sub>0</sub> = 18.5 ±0.5	L	L16.5TR18
	<b>Other Lead and Packaging Options</b>			
	Tape & Reel (Large Reel)	H <sub>0</sub> = 18.5 ±0.5	P	L16.5LR18
Native 15 formed to 7.5	Ammo Pack	H <sub>0</sub> = 18.5 ±0.5	XLAF1	XA18
	Tape & Reel (Standard Reel)	H <sub>0</sub> = 18.5 ±0.5	XLTF1	XR18
22.5	<b>Standard Lead and Packaging Options</b>			
	Bulk (Tray) – Short Leads	4.0 +1/-0	C	L4TRAY
27.5	<b>Standard Lead and Packaging Options</b>			
	Bulk (Tray) – Short Leads	4.0 +1/-0	C	L4TRAY

## Dimensions – Millimeters



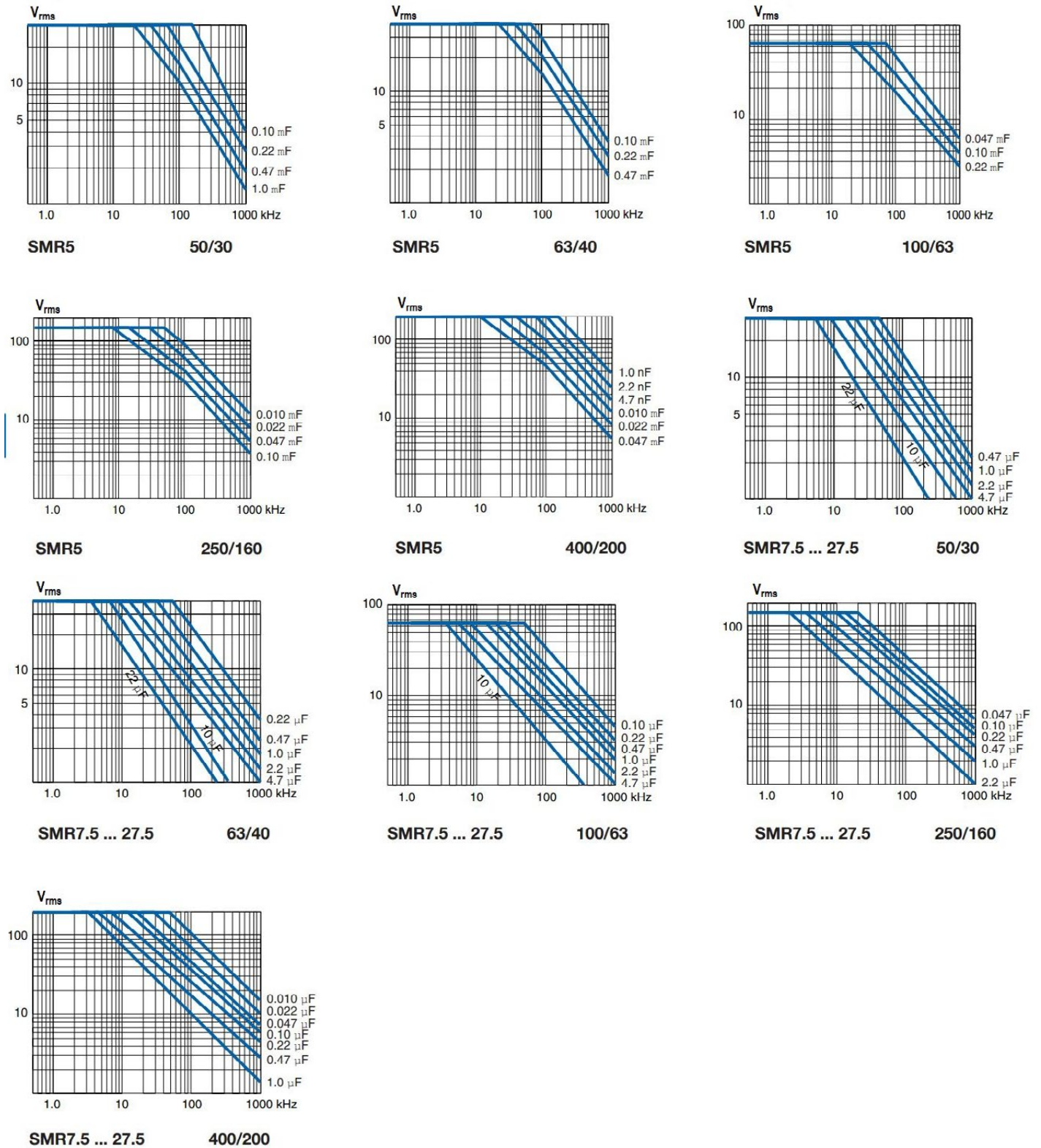
KEMET Size Code	Legacy Size Code	p		B		H		L		d	
		Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
JF	J01	5	+/-0.4	2.5	Maximum	6.5	Maximum	7.2	Maximum	0.5	+/-0.05
JJ	J02	5	+/-0.4	3.5	Maximum	8	Maximum	7.2	Maximum	0.5	+/-0.05
JL	J03	5	+/-0.4	4.5	Maximum	9	Maximum	7.2	Maximum	0.5	+/-0.05
JQ	J04	5	+/-0.4	5	Maximum	10	Maximum	7.2	Maximum	0.5	+/-0.05
JT	J05	5	+/-0.4	6	Maximum	11	Maximum	7.2	Maximum	0.5	+/-0.05
JU	J06	5	+/-0.4	7.2	Maximum	13	Maximum	7.2	Maximum	0.5	+/-0.05
KG	K01	7.5	+/-0.4	4	Maximum	8	Maximum	10	Maximum	0.6	+/-0.05
KK	K03	7.5	+/-0.4	5	Maximum	11	Maximum	10	Maximum	0.6	+/-0.05
KM	K04	7.5	+/-0.4	6	Maximum	12	Maximum	10.5	Maximum	0.6	+/-0.05
AG	A01	10	+/-0.4	4	Maximum	9	Maximum	13	Maximum	0.6	+/-0.05
AH	A02	10	+/-0.4	4.5	Maximum	10.5	Maximum	13	Maximum	0.6	+/-0.05
AK	A03	10	+/-0.4	5	Maximum	11	Maximum	13	Maximum	0.6	+/-0.05
AP	A04	10	+/-0.4	6	Maximum	12	Maximum	13	Maximum	0.6	+/-0.05
BD	B04	15	+/-0.4	5.5	Maximum	10.5	Maximum	18	Maximum	0.8	+/-0.05
BE	B05	15	+/-0.4	5.5	Maximum	12.5	Maximum	18	Maximum	0.8	+/-0.05
BL	B06	15	+/-0.4	7.5	Maximum	14.5	Maximum	18	Maximum	0.8	+/-0.05
BJ	B10	15	+/-0.4	6.5	Maximum	12.5	Maximum	18	Maximum	0.8	+/-0.05
BQ	B11	15	+/-0.4	8.5	Maximum	16	Maximum	18	Maximum	0.8	+/-0.05
BM	B12	15	+/-0.4	8	Maximum	15	Maximum	18	Maximum	0.8	+/-0.05
BV	B14	15	+/-0.4	9.5	Maximum	17.5	Maximum	18	Maximum	0.8	+/-0.05
DD	D13	22.5	+/-0.4	6.5	Maximum	14.5	Maximum	26	Maximum	0.8	+/-0.05
DH	D14	22.5	+/-0.4	8	Maximum	16	Maximum	26	Maximum	0.8	+/-0.05
DM	D15	22.5	+/-0.4	9	Maximum	18.5	Maximum	26	Maximum	0.8	+/-0.05
DT	D16	22.5	+/-0.4	11	Maximum	21.5	Maximum	26	Maximum	0.8	+/-0.05
DF	D17	22.5	+/-0.4	7	Maximum	16.5	Maximum	26	Maximum	0.8	+/-0.05
DR	D18	22.5	+/-0.4	10.5	Maximum	19	Maximum	26	Maximum	0.8	+/-0.05
FE	F11	27.5	+/-0.4	10.5	Maximum	20.5	Maximum	31.5	Maximum	0.8	+/-0.05
FG	F12	27.5	+/-0.4	11.5	Maximum	22.5	Maximum	31.5	Maximum	0.8	+/-0.05
FM	F13	27.5	+/-0.4	14.5	Maximum	24.5	Maximum	31.5	Maximum	0.8	+/-0.05
FR	F14	27.5	+/-0.4	17.5	Maximum	28	Maximum	31.5	Maximum	0.8	+/-0.05

Note: See Ordering Options Table for lead length (LL) options.

## Performance Characteristics

Rated Voltage $V_R$ (VDC)	50	63	100	250	400
Rated Voltage $V_R$ (VAC)	30	40	63	160	200
Capacitance Range ( $\mu\text{F}$ )	0.001 – 22	0.001 – 22	0.001 – 12	0.001 – 3.9	0.001 – 1.8
Capacitance Tolerance	$\pm 10\%$ , $\pm 20\%$ , $\pm 2.5\%$ and $\pm 5\%$ on request				
Category Temperature Range	-55 to +150°C				
Rated Temperature	+55 to +125°C				
Voltage Derating	From +125°C, the voltage derating is 2%/°C				
Climatic Category	IEC 60068-1, 55/150/56				
	DIN 40040, FKD				
Test Voltage	$1.6 \times V_R$ for 2 seconds				
Reliability	Operational life > 200,000 hours				
	Failure rate < 3 FIT, T = +40°C, V = $0.5 \times V_R$				
	Failure criteria according to DIN 44122				
Capacitance Drift	Maximum 0.3% after a 2 year storage period at a temperature of +10° to +40°C and a relative humidity of 40 to 60%				
Insulation Resistance	Measured at +20°C According to IEC 60384-1				
	Minimum Values Between Terminals				
		$C \leq 0.33 \mu\text{F}$		$C > 0.33 \mu\text{F}$	
	$V_R \leq 100 \text{ V}$	15,000 M $\Omega$		5,000 M $\Omega \cdot \mu\text{F}$	
	$V_R > 100 \text{ V}$	30,000 M $\Omega$		10,000 M $\Omega \cdot \mu\text{F}$	
Dissipation Factor	Maximum Values at +23°C				
Lead Spacing		$C \leq 0.1 \mu\text{F}$	$0.1 \mu\text{F} < C \leq 1.0 \mu\text{F}$	$C > 1.0 \mu\text{F}$	
SMR 5	1 kHz	0.15%	0.15%	0.15%	
	10 kHz	0.25%	0.25%	0.35%	
	100 kHz	0.50%	0.60%		
SMR 7.5 to 27.5	1 kHz	0.15%	0.15%	0.15%	
	10 kHz	0.25%	0.25%		
	100 kHz	0.60%			

## Derating of $V_{rms}$ vs. Frequency, +100°C Ambient Temperature & 20°C Internal Heating, Typical Values



## Environmental Test Data

Damp Heat Test	
Test Conditions	T = +40°C, RH = 93%, t = 56 days
Test Criteria	$\Delta C/C \leq \pm 3\%$
	$\Delta \tan\delta \leq 0.0025$ (1 kHz)
	IR after test 0.5 x IR minimum
Endurance Test	
Test Conditions	T = +125°C, V = 1.25 x (0.5 x V <sub>R</sub> )
Test Criteria	t = 2,000 hours
	$\Delta C/C \leq \pm 3\%$
	$\Delta \tan\delta \leq 0.002$ (1 kHz), C > 1 μF
	$\Delta \tan\delta \leq 0.003$ (10 kHz), C ≤ 1 μF
	IR after test 0.5 x IR minimum

## Environmental Compliance

All KEMET PPS capacitors are RoHS Compliant.







Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (μF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/μs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
50	30	3.9	BM/B12	8	15	18	15	6	F211BM395(1)050(2)	SMR15395(3)50B12(2)
50	30	4.7	BV/B14	8.5	16	18	15	6	F211BV475(1)050(2)	SMR15475(3)50B14(2)
50	30	5.6	BV/B14	9.5	17.5	18	15	6	F211BV565(1)050(2)	SMR15565(3)50B14(2)
50	30	6.8	DM/D15	9	18.5	26	22.5	3	F211DM685(1)050(2)	SMR22.5685(3)50D15(2)
50	30	8.2	DM/D15	9	18.5	26	22.5	3	F211DM825(1)050(2)	SMR22.5825(3)50D15(2)
50	30	10	DR/D18	10.5	19	26	22.5	3	F211DR106(1)050(2)	SMR22.5106(3)50D18(2)
50	30	12	DT/D16	11	21.5	26	22.5	3	F211DT126(1)050(2)	SMR22.5126(3)50D16(2)
50	30	15	FE/F11	10.5	20.5	31.5	27.5	2	F211FE156(1)050(2)	SMR27.5156(3)50F11(2)
50	30	18	FG/F12	11.5	22.5	31.5	27.5	2	F211FG186(1)050(2)	SMR27.5186(3)50F12(2)
50	30	22	FM/F13	14.5	24.5	31.5	27.5	2	F211FM226(1)050(2)	SMR27.5226(3)50F13(2)
63	40	0.001	JF/J01	2.5	6.5	7.2	5	40	F211JF102(1)063(2)	SMR5102(3)63J01(2)
63	40	0.0012	JF/J01	2.5	6.5	7.2	5	40	F211JF122(1)063(2)	SMR5122(3)63J01(2)
63	40	0.0015	JF/J01	2.5	6.5	7.2	5	40	F211JF152(1)063(2)	SMR5152(3)63J01(2)
63	40	0.0018	JF/J01	2.5	6.5	7.2	5	40	F211JF182(1)063(2)	SMR5182(3)63J01(2)
63	40	0.0022	JF/J01	2.5	6.5	7.2	5	40	F211JF222(1)063(2)	SMR5222(3)63J01(2)
63	40	0.0027	JF/J01	2.5	6.5	7.2	5	40	F211JF272(1)063(2)	SMR5272(3)63J01(2)
63	40	0.0033	JF/J01	2.5	6.5	7.2	5	40	F211JF332(1)063(2)	SMR5332(3)63J01(2)
63	40	0.0039	JF/J01	2.5	6.5	7.2	5	40	F211JF392(1)063(2)	SMR5392(3)63J01(2)
63	40	0.0047	JF/J01	2.5	6.5	7.2	5	20	F211JF472(1)063(2)	SMR5472(3)63J01(2)
63	40	0.0056	JF/J01	2.5	6.5	7.2	5	20	F211JF562(1)063(2)	SMR5562(3)63J01(2)
63	40	0.0068	JF/J01	2.5	6.5	7.2	5	20	F211JF682(1)063(2)	SMR5682(3)63J01(2)
63	40	0.0082	JF/J01	2.5	6.5	7.2	5	20	F211JF822(1)063(2)	SMR5822(3)63J01(2)
63	40	0.01	JF/J01	2.5	6.5	7.2	5	20	F211JF103(1)063(2)	SMR5103(3)63J01(2)
63	40	0.012	JF/J01	2.5	6.5	7.2	5	15	F211JF123(1)063(2)	SMR5123(3)63J01(2)
63	40	0.015	JF/J01	2.5	6.5	7.2	5	15	F211JF153(1)063(2)	SMR5153(3)63J01(2)
63	40	0.018	JF/J01	2.5	6.5	7.2	5	15	F211JF183(1)063(2)	SMR5183(3)63J01(2)
63	40	0.022	JF/J01	2.5	6.5	7.2	5	15	F211JF223(1)063(2)	SMR5223(3)63J01(2)
63	40	0.027	JF/J01	2.5	6.5	7.2	5	15	F211JF273(1)063(2)	SMR5273(3)63J01(2)
63	40	0.033	JF/J01	2.5	6.5	7.2	5	15	F211JF333(1)063(2)	SMR5333(3)63J01(2)
63	40	0.039	JF/J01	2.5	6.5	7.2	5	15	F211JF393(1)063(2)	SMR5393(3)63J01(2)
63	40	0.047	JF/J01	2.5	6.5	7.2	5	6	F211JF473(1)063(2)	SMR5473(3)63J01(2)
63	40	0.056	JF/J01	2.5	6.5	7.2	5	6	F211JF563(1)063(2)	SMR5563(3)63J01(2)
63	40	0.068	JF/J01	2.5	6.5	7.2	5	6	F211JF683(1)063(2)	SMR5683(3)63J01(2)
63	40	0.082	JJ/J02	3.5	8	7.2	5	6	F211JJ823(1)063(2)	SMR5823(3)63J02(2)
63	40	0.1	JJ/J02	3.5	8	7.2	5	6	F211JJ104(1)063(2)	SMR5104(3)63J02(2)
63	40	0.12	JJ/J02	3.5	8	7.2	5	6	F211JJ124(1)063(2)	SMR5124(3)63J02(2)
63	40	0.15	JJ/J02	3.5	8	7.2	5	6	F211JJ154(1)063(2)	SMR5154(3)63J02(2)
63	40	0.18	JL/J03	4.5	9	7.2	5	6	SMR5184(3)63J03(2)	SMR5184(3)63J03(2)
63	40	0.22	JL/J03	4.5	9	7.2	5	6	F211JL224(1)063(2)	SMR5224(3)63J03(2)
63	40	0.27	JQ/J04	5	10	7.2	5	6	F211JQ274(1)063(2)	SMR5274(3)63J04(2)
63	40	0.33	JQ/J04	5	10	7.2	5	6	F211JQ334(1)063(2)	SMR5334(3)63J04(2)
63	40	0.39	JT/J05	6	11	7.2	5	6	F211JT394(1)063(2)	SMR5394(3)63J05(2)
63	40	0.47	JT/J05	6	11	7.2	5	6	F211JT474(1)063(2)	SMR5474(3)63J05(2)
63	40	0.56	JU/J06	7.2	13	7.2	5	6	F211JU564(1)063(2)	SMR5564(3)63J06(2)
63	40	0.68	JU/J06	7.2	13	7.2	5	6	F211JU684(1)063(2)	SMR5684(3)63J06(2)
63	40	0.001	KG/K01	4	8	10	7.5	30	F211KG102(1)063(2)	SMR7.5102(3)63K01(2)
63	40	0.0012	KG/K01	4	8	10	7.5	30	F211KG122(1)063(2)	SMR7.5122(3)63K01(2)
63	40	0.0015	KG/K01	4	8	10	7.5	30	F211KG152(1)063(2)	SMR7.5152(3)63K01(2)
63	40	0.0018	KG/K01	4	8	10	7.5	30	F211KG182(1)063(2)	SMR7.5182(3)63K01(2)
63	40	0.0022	KG/K01	4	8	10	7.5	30	F211KG222(1)063(2)	SMR7.5222(3)63K01(2)
63	40	0.0027	KG/K01	4	8	10	7.5	30	F211KG272(1)063(2)	SMR7.5272(3)63K01(2)
63	40	0.0033	KG/K01	4	8	10	7.5	30	F211KG332(1)063(2)	SMR7.5332(3)63K01(2)
63	40	0.0039	KG/K01	4	8	10	7.5	30	F211KG392(1)063(2)	SMR7.5392(3)63K01(2)
63	40	0.0047	KG/K01	4	8	10	7.5	30	F211KG472(1)063(2)	SMR7.5472(3)63K01(2)
63	40	0.0056	KG/K01	4	8	10	7.5	30	F211KG562(1)063(2)	SMR7.5562(3)63K01(2)
63	40	0.0068	KG/K01	4	8	10	7.5	30	F211KG682(1)063(2)	SMR7.5682(3)63K01(2)
63	40	0.0082	KG/K01	4	8	10	7.5	30	F211KG822(1)063(2)	SMR7.5822(3)63K01(2)
VDC	VAC	Capacitance Value (μF)	Size Code (New/Legacy)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/μs)	New KEMET Part Number	Legacy Part Number

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

**Table 1 – Ratings & Part Number Reference cont'd**

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
63	40	0.01	KG/K01	4	8	10	7.5	30	F211KG103(1)063(2)	SMR7.5103(3)63K01(2)
63	40	0.012	KG/K01	4	8	10	7.5	30	F211KG123(1)063(2)	SMR7.5123(3)63K01(2)
63	40	0.015	KG/K01	4	8	10	7.5	30	F211KG153(1)063(2)	SMR7.5153(3)63K01(2)
63	40	0.018	KG/K01	4	8	10	7.5	30	F211KG183(1)063(2)	SMR7.5183(3)63K01(2)
63	40	0.022	KG/K01	4	8	10	7.5	30	F211KG223(1)063(2)	SMR7.5223(3)63K01(2)
63	40	0.027	KG/K01	4	8	10	7.5	20	F211KG273(1)063(2)	SMR7.5273(3)63K01(2)
63	40	0.033	KG/K01	4	8	10	7.5	20	F211KG333(1)063(2)	SMR7.5333(3)63K01(2)
63	40	0.039	KG/K01	4	8	10	7.5	20	F211KG393(1)063(2)	SMR7.5393(3)63K01(2)
63	40	0.047	KG/K01	4	8	10	7.5	20	F211KG473(1)063(2)	SMR7.5473(3)63K01(2)
63	40	0.056	KG/K01	4	8	10	7.5	15	F211KG563(1)063(2)	SMR7.5563(3)63K01(2)
63	40	0.068	KG/K01	4	8	10	7.5	15	F211KG683(1)063(2)	SMR7.5683(3)63K01(2)
63	40	0.082	KG/K01	4	8	10	7.5	15	F211KG823(1)063(2)	SMR7.5823(3)63K01(2)
63	40	0.1	KG/K01	4	8	10	7.5	15	F211KG104(1)063(2)	SMR7.5104(3)63K01(2)
63	40	0.12	KG/K01	4	8	10	7.5	15	F211KG124(1)063(2)	SMR7.5124(3)63K01(2)
63	40	0.15	KG/K01	4	8	10	7.5	10	F211KG154(1)063(2)	SMR7.5154(3)63K01(2)
63	40	0.18	KG/K01	4	8	10	7.5	10	F211KG184(1)063(2)	SMR7.5184(3)63K01(2)
63	40	0.22	KG/K01	4	8	10	7.5	10	F211KG224(1)063(2)	SMR7.5224(3)63K01(2)
63	40	0.27	KG/K01	4	8	10	7.5	10	F211KG274(1)063(2)	SMR7.5274(3)63K01(2)
63	40	0.33	KK/K03	5	11	10	7.5	10	F211KK334(1)063(2)	SMR7.5334(3)63K03(2)
63	40	0.39	KK/K03	5	11	10	7.5	10	F211KK394(1)063(2)	SMR7.5394(3)63K03(2)
63	40	0.47	KK/K03	5	11	10	7.5	10	F211KK474(1)063(2)	SMR7.5474(3)63K03(2)
63	40	0.56	KK/K03	5	11	10	7.5	10	F211KK564(1)063(2)	SMR7.5564(3)63K03(2)
63	40	0.68	KM/K04	6	12	10.5	7.5	10	F211KM684(1)063(2)	SMR7.5684(3)63K04(2)
63	40	0.82	KM/K04	6	12	10.5	7.5	10	F211KM824(1)063(2)	SMR7.5824(3)63K04(2)
63	40	0.0027	AG/A01	4	9	13	10	25	F211AG272(1)063(2)	SMR10272(3)63A01(2)
63	40	0.0033	AG/A01	4	9	13	10	25	F211AG332(1)063(2)	SMR10332(3)63A01(2)
63	40	0.0039	AG/A01	4	9	13	10	25	F211AG392(1)063(2)	SMR10392(3)63A01(2)
63	40	0.0047	AG/A01	4	9	13	10	25	F211AG472(1)063(2)	SMR10472(3)63A01(2)
63	40	0.0056	AG/A01	4	9	13	10	25	F211AG562(1)063(2)	SMR10562(3)63A01(2)
63	40	0.0068	AG/A01	4	9	13	10	25	F211AG682(1)063(2)	SMR10682(3)63A01(2)
63	40	0.0082	AG/A01	4	9	13	10	25	F211AG822(1)063(2)	SMR10822(3)63A01(2)
63	40	0.01	AG/A01	4	9	13	10	25	F211AG103(1)063(2)	SMR10103(3)63A01(2)
63	40	0.012	AG/A01	4	9	13	10	25	F211AG123(1)063(2)	SMR10123(3)63A01(2)
63	40	0.015	AG/A01	4	9	13	10	25	F211AG153(1)063(2)	SMR10153(3)63A01(2)
63	40	0.018	AG/A01	4	9	13	10	25	F211AG183(1)063(2)	SMR10183(3)63A01(2)
63	40	0.022	AG/A01	4	9	13	10	25	F211AG223(1)063(2)	SMR10223(3)63A01(2)
63	40	0.027	AG/A01	4	9	13	10	25	F211AG273(1)063(2)	SMR10273(3)63A01(2)
63	40	0.033	AG/A01	4	9	13	10	25	F211AG333(1)063(2)	SMR10333(3)63A01(2)
63	40	0.039	AG/A01	4	9	13	10	15	F211AG393(1)063(2)	SMR10393(3)63A01(2)
63	40	0.047	AG/A01	4	9	13	10	15	F211AG473(1)063(2)	SMR10473(3)63A01(2)
63	40	0.056	AG/A01	4	9	13	10	15	F211AG563(1)063(2)	SMR10563(3)63A01(2)
63	40	0.068	AG/A01	4	9	13	10	15	F211AG683(1)063(2)	SMR10683(3)63A01(2)
63	40	0.082	AG/A01	4	9	13	10	10	F211AG823(1)063(2)	SMR10823(3)63A01(2)
63	40	0.1	AG/A01	4	9	13	10	10	F211AG104(1)063(2)	SMR10104(3)63A01(2)
63	40	0.12	AG/A01	4	9	13	10	10	F211AG124(1)063(2)	SMR10124(3)63A01(2)
63	40	0.15	AG/A01	4	9	13	10	10	F211AG154(1)063(2)	SMR10154(3)63A01(2)
63	40	0.18	AG/A01	4	9	13	10	10	F211AG184(1)063(2)	SMR10184(3)63A01(2)
63	40	0.22	AG/A01	4	9	13	10	10	F211AG224(1)063(2)	SMR10224(3)63A01(2)
63	40	0.27	AG/A01	4	9	13	10	8	F211AG274(1)063(2)	SMR10274(3)63A01(2)
63	40	0.33	AG/A01	4	9	13	10	8	F211AG334(1)063(2)	SMR10334(3)63A01(2)
63	40	0.39	AG/A01	4	9	13	10	8	F211AG394(1)063(2)	SMR10394(3)63A01(2)
63	40	0.47	AH/A02	4.5	10.5	13	10	8	F211AH474(1)063(2)	SMR10474(3)63A02(2)
63	40	0.56	AH/A02	4.5	10.5	13	10	8	F211AH564(1)063(2)	SMR10564(3)63A02(2)
63	40	0.68	AK/A03	5	11	13	10	8	F211AK684(1)063(2)	SMR10684(3)63A03(2)
63	40	0.82	AP/A04	6	12	13	10	8	F211AP824(1)063(2)	SMR10824(3)63A04(2)
63	40	1	AP/A04	6	12	13	10	8	F211AP105(1)063(2)	SMR10105(3)63A04(2)
63	40	0.68	BD/B04	5.5	10.5	18	15	8	F211BD684(1)063(2)	SMR15684(3)63B04(2)
VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%



**Table 1 – Ratings & Part Number Reference cont'd**

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
100	63	0.0033	KG/K01	4	8	10	7.5	30	F211KG332(1)100(2)	SMR7.5332(3)100K01(2)
100	63	0.0039	KG/K01	4	8	10	7.5	30	F211KG392(1)100(2)	SMR7.5392(3)100K01(2)
100	63	0.0047	KG/K01	4	8	10	7.5	30	F211KG472(1)100(2)	SMR7.5472(3)100K01(2)
100	63	0.0056	KG/K01	4	8	10	7.5	30	F211KG562(1)100(2)	SMR7.5562(3)100K01(2)
100	63	0.0068	KG/K01	4	8	10	7.5	30	F211KG682(1)100(2)	SMR7.5682(3)100K01(2)
100	63	0.0082	KG/K01	4	8	10	7.5	30	F211KG822(1)100(2)	SMR7.5822(3)100K01(2)
100	63	0.01	KG/K01	4	8	10	7.5	30	F211KG103(1)100(2)	SMR7.5103(3)100K01(2)
100	63	0.012	KG/K01	4	8	10	7.5	30	F211KG123(1)100(2)	SMR7.5123(3)100K01(2)
100	63	0.015	KG/K01	4	8	10	7.5	30	F211KG153(1)100(2)	SMR7.5153(3)100K01(2)
100	63	0.018	KG/K01	4	8	10	7.5	30	F211KG183(1)100(2)	SMR7.5183(3)100K01(2)
100	63	0.022	KG/K01	4	8	10	7.5	30	F211KG223(1)100(2)	SMR7.5223(3)100K01(2)
100	63	0.027	KG/K01	4	8	10	7.5	20	F211KG273(1)100(2)	SMR7.5273(3)100K01(2)
100	63	0.033	KG/K01	4	8	10	7.5	20	F211KG333(1)100(2)	SMR7.5333(3)100K01(2)
100	63	0.039	KG/K01	4	8	10	7.5	20	F211KG393(1)100(2)	SMR7.5393(3)100K01(2)
100	63	0.047	KG/K01	4	8	10	7.5	20	F211KG473(1)100(2)	SMR7.5473(3)100K01(2)
100	63	0.056	KG/K01	4	8	10	7.5	15	F211KG563(1)100(2)	SMR7.5563(3)100K01(2)
100	63	0.068	KG/K01	4	8	10	7.5	15	F211KG683(1)100(2)	SMR7.5683(3)100K01(2)
100	63	0.082	KG/K01	4	8	10	7.5	15	F211KG823(1)100(2)	SMR7.5823(3)100K01(2)
100	63	0.1	KG/K01	4	8	10	7.5	15	F211KG104(1)100(2)	SMR7.5104(3)100K01(2)
100	63	0.12	KG/K01	4	8	10	7.5	15	F211KG124(1)100(2)	SMR7.5124(3)100K01(2)
100	63	0.15	KK/K03	5	11	10	7.5	15	F211KK154(1)100(2)	SMR7.5154(3)100K03(2)
100	63	0.18	KK/K03	5	11	10	7.5	15	F211KK184(1)100(2)	SMR7.5184(3)100K03(2)
100	63	0.22	KK/K03	5	11	10	7.5	15	F211KK224(1)100(2)	SMR7.5224(3)100K03(2)
100	63	0.27	KK/K03	5	11	10	7.5	15	F211KK274(1)100(2)	SMR7.5274(3)100K03(2)
100	63	0.33	KM/K04	6	12	10.5	7.5	15	F211KM334(1)100(2)	SMR7.5334(3)100K04(2)
100	63	0.39	KM/K04	6	12	10.5	7.5	15	F211KM394(1)100(2)	SMR7.5394(3)100K04(2)
100	63	0.47	KM/K04	6	12	10.5	7.5	15	F211KM474(1)100(2)	SMR7.5474(3)100K04(2)
100	63	0.0027	AG/A01	4	9	13	10	25	F211AG272(1)100(2)	SMR10272(3)100A01(2)
100	63	0.0033	AG/A01	4	9	13	10	25	F211AG332(1)100(2)	SMR10332(3)100A01(2)
100	63	0.0039	AG/A01	4	9	13	10	25	F211AG392(1)100(2)	SMR10392(3)100A01(2)
100	63	0.0047	AG/A01	4	9	13	10	25	F211AG472(1)100(2)	SMR10472(3)100A01(2)
100	63	0.0056	AG/A01	4	9	13	10	25	F211AG562(1)100(2)	SMR10562(3)100A01(2)
100	63	0.0068	AG/A01	4	9	13	10	25	F211AG682(1)100(2)	SMR10682(3)100A01(2)
100	63	0.0082	AG/A01	4	9	13	10	25	F211AG822(1)100(2)	SMR10822(3)100A01(2)
100	63	0.01	AG/A01	4	9	13	10	25	F211AG103(1)100(2)	SMR10103(3)100A01(2)
100	63	0.012	AG/A01	4	9	13	10	25	F211AG123(1)100(2)	SMR10123(3)100A01(2)
100	63	0.015	AG/A01	4	9	13	10	25	F211AG153(1)100(2)	SMR10153(3)100A01(2)
100	63	0.018	AG/A01	4	9	13	10	25	F211AG183(1)100(2)	SMR10183(3)100A01(2)
100	63	0.022	AG/A01	4	9	13	10	25	F211AG223(1)100(2)	SMR10223(3)100A01(2)
100	63	0.027	AG/A01	4	9	13	10	25	F211AG273(1)100(2)	SMR10273(3)100A01(2)
100	63	0.033	AG/A01	4	9	13	10	25	F211AG333(1)100(2)	SMR10333(3)100A01(2)
100	63	0.039	AG/A01	4	9	13	10	15	F211AG393(1)100(2)	SMR10393(3)100A01(2)
100	63	0.047	AG/A01	4	9	13	10	15	F211AG473(1)100(2)	SMR10473(3)100A01(2)
100	63	0.056	AG/A01	4	9	13	10	15	F211AG563(1)100(2)	SMR10563(3)100A01(2)
100	63	0.068	AG/A01	4	9	13	10	15	F211AG683(1)100(2)	SMR10683(3)100A01(2)
100	63	0.082	AG/A01	4	9	13	10	10	F211AG823(1)100(2)	SMR10823(3)100A01(2)
100	63	0.1	AG/A01	4	9	13	10	10	F211AG104(1)100(2)	SMR10104(3)100A01(2)
100	63	0.12	AG/A01	4	9	13	10	10	F211AG124(1)100(2)	SMR10124(3)100A01(2)
100	63	0.15	AG/A01	4	9	13	10	10	F211AG154(1)100(2)	SMR10154(3)100A01(2)
100	63	0.18	AG/A01	4	9	13	10	10	F211AG184(1)100(2)	SMR10184(3)100A01(2)
100	63	0.22	AG/A01	4	9	13	10	10	F211AG224(1)100(2)	SMR10224(3)100A01(2)
100	63	0.27	AH/A02	4.5	10.5	13	10	10	F211AH274(1)100(2)	SMR10274(3)100A02(2)
100	63	0.33	AK/A03	5	11	13	10	10	F211AK334(1)100(2)	SMR10334(3)100A03(2)
100	63	0.39	AK/A03	5	11	13	10	10	F211AK394(1)100(2)	SMR10394(3)100A03(2)
100	63	0.47	AP/A04	6	12	13	10	10	F211AP474(1)100(2)	SMR10474(3)100A04(2)
100	63	0.56	AP/A04	6	12	13	10	10	F211AP564(1)100(2)	SMR10564(3)100A04(2)
100	63	0.27	BD/B04	5.5	10.5	18	15	8	F211BD274(1)100(2)	SMR15274(3)100B04(2)
VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%









**Table 1 – Ratings & Part Number Reference cont'd**

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
400	200	0.0082	AG/A01	4	9	13	10	25	F211AG822(1)400(2)	SMR10822(3)400A01(2)
400	200	0.01	AG/A01	4	9	13	10	25	F211AG103(1)400(2)	SMR10103(3)400A01(2)
400	200	0.012	AG/A01	4	9	13	10	25	F211AG123(1)400(2)	SMR10123(3)400A01(2)
400	200	0.015	AG/A01	4	9	13	10	25	F211AG153(1)400(2)	SMR10153(3)400A01(2)
400	200	0.018	AG/A01	4	9	13	10	25	F211AG183(1)400(2)	SMR10183(3)400A01(2)
400	200	0.022	AG/A01	4	9	13	10	25	F211AG223(1)400(2)	SMR10223(3)400A01(2)
400	200	0.027	AG/A01	4	9	13	10	25	F211AG273(1)400(2)	SMR10273(3)400A01(2)
400	200	0.033	AG/A01	4	9	13	10	25	F211AG333(1)400(2)	SMR10333(3)400A01(2)
400	200	0.039	AH/A02	4.5	10.5	13	10	25	F211AH393(1)400(2)	SMR10393(3)400A02(2)
400	200	0.047	AK/A03	5	11	13	10	25	F211AK473(1)400(2)	SMR10473(3)400A03(2)
400	200	0.056	AK/A03	5	11	13	10	25	F211AK563(1)400(2)	SMR10563(3)400A03(2)
400	200	0.068	AP/A04	6	12	13	10	25	F211AP683(1)400(2)	SMR10683(3)400A04(2)
400	200	0.082	AP/A04	6	12	13	10	25	F211AP823(1)400(2)	SMR10823(3)400A04(2)
400	200	0.047	BD/B04	5.5	10.5	18	15	15	F211BD473(1)400(2)	SMR15473(3)400B04(2)
400	200	0.056	BD/B04	5.5	10.5	18	15	15	F211BD563(1)400(2)	SMR15563(3)400B04(2)
400	200	0.068	BD/B04	5.5	10.5	18	15	15	F211BD683(1)400(2)	SMR15683(3)400B04(2)
400	200	0.082	BE/B05	5.5	12.5	18	15	15	F211BE823(1)400(2)	SMR15823(3)400B05(2)
400	200	0.1	BJ/B10	6.5	12.5	18	15	15	F211BJ104(1)400(2)	SMR15104(3)400B10(2)
400	200	0.12	BL/B06	7.5	14.5	18	15	15	F211BL124(1)400(2)	SMR15124(3)400B06(2)
400	200	0.15	BL/B06	7.5	14.5	18	15	15	F211BL154(1)400(2)	SMR15154(3)400B06(2)
400	200	0.18	BM/B12	8	15	18	15	15	F211BM184(1)400(2)	SMR15184(3)400B12(2)
400	200	0.22	BQ/B11	8.5	16	18	15	15	F211BQ224(1)400(2)	SMR15224(3)400B11(2)
400	200	0.27	BV/B14	9.5	17.5	18	15	15	F211BV274(1)400(2)	SMR15274(3)400B14(2)
400	200	0.15	DD/D13	6.5	14.5	26	22.5	10	F211DD154(1)400(2)	SMR22.5154(3)400D13(2)
400	200	0.18	DD/D13	6.5	14.5	26	22.5	10	F211DD184(1)400(2)	SMR22.5184(3)400D13(2)
400	200	0.22	DD/D13	6.5	14.5	26	22.5	10	F211DD224(1)400(2)	SMR22.5224(3)400D13(2)
400	200	0.27	DF/D17	7	16.5	26	22.5	10	F211DF274(1)400(2)	SMR22.5274(3)400D17(2)
400	200	0.33	DH/D14	8	16	26	22.5	10	F211DH334(1)400(2)	SMR22.5334(3)400D14(2)
400	200	0.39	DM/D15	9	18.5	26	22.5	10	F211DM394(1)400(2)	SMR22.5394(3)400D15(2)
400	200	0.47	DM/D15	9	18.5	26	22.5	10	F211DM474(1)400(2)	SMR22.5474(3)400D15(2)
400	200	0.56	DR/D18	10.5	19	26	22.5	10	F211DR564(1)400(2)	SMR22.5564(3)400D18(2)
400	200	0.68	DT/D16	11	21.5	26	22.5	10	F211DT684(1)400(2)	SMR22.5684(3)400D16(2)
400	200	0.47	FE/F11	10.5	20.5	31.5	27.5	8	F211FE474(1)400(2)	SMR27.5474(3)400F11(2)
400	200	0.56	FE/F11	10.5	20.5	31.5	27.5	8	F211FE564(1)400(2)	SMR27.5564(3)400F11(2)
400	200	0.68	FE/F11	10.5	20.5	31.5	27.5	8	F211FE684(1)400(2)	SMR27.5684(3)400F11(2)
400	200	0.82	FG/F12	11.5	22.5	31.5	27.5	8	F211FG824(1)400(2)	SMR27.5824(3)400F12(2)
400	200	1	FG/F12	11.5	22.5	31.5	27.5	8	F211FG105(1)400(2)	SMR27.5105(3)400F12(2)
400	200	1.2	FM/F13	14.5	24.5	31.5	27.5	8	F211FM125(1)400(2)	SMR27.5125(3)400F13(2)
400	200	1.5	FR/F14	17.5	28	31.5	27.5	8	F211FR155(1)400(2)	SMR27.5155(3)400F14(2)
400	200	1.8	FR/F14	17.5	28	31.5	27.5	8	F211FR185(1)400(2)	SMR27.5185(3)400F14(2)
VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

## Soldering Process

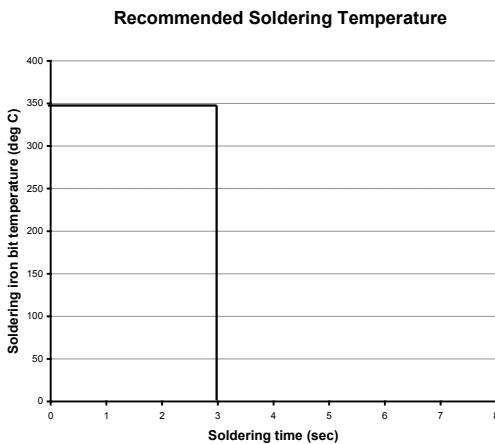
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183°C for SnPb eutectic alloy to 217 – 221°C for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170°C). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

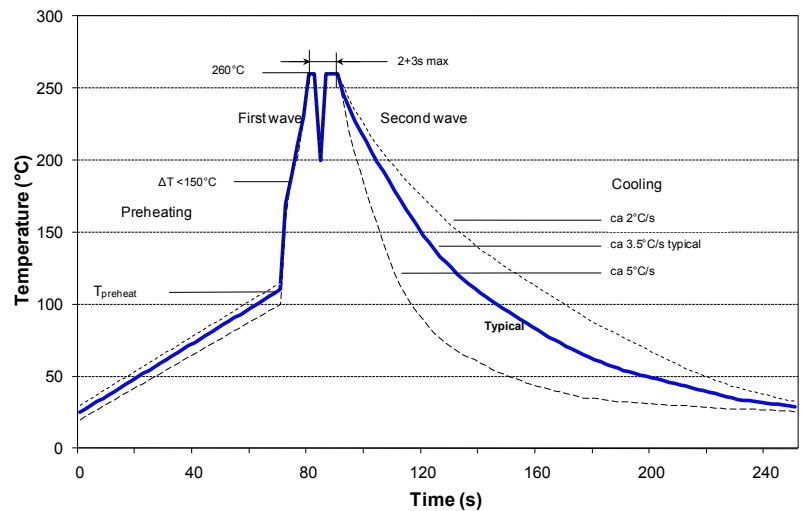
### Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

### Wave Soldering Recommendations



## Soldering Process cont'd

### Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process

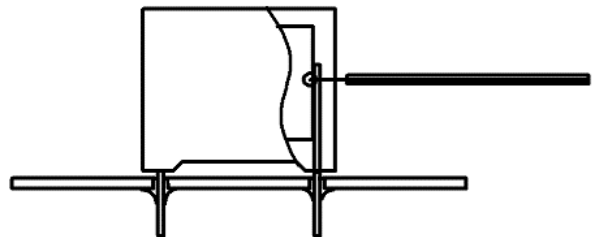
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:

Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



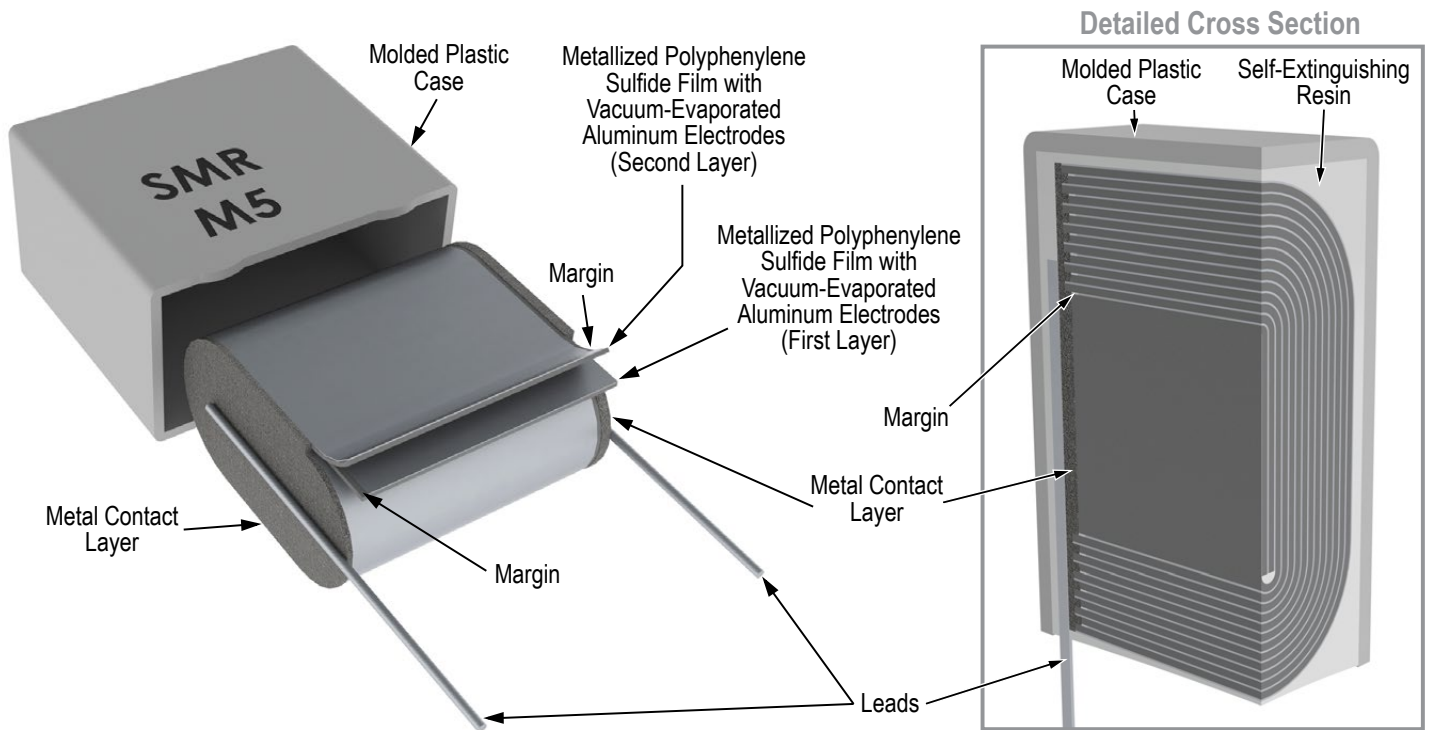
*Temperature monitored inside the capacitor.*

### Selective Soldering Recommendations

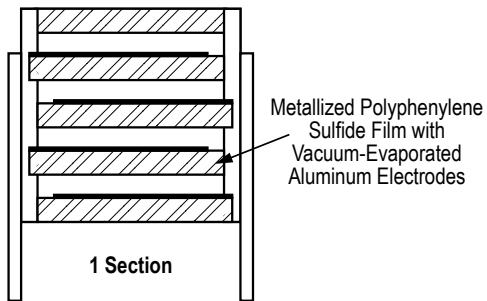
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

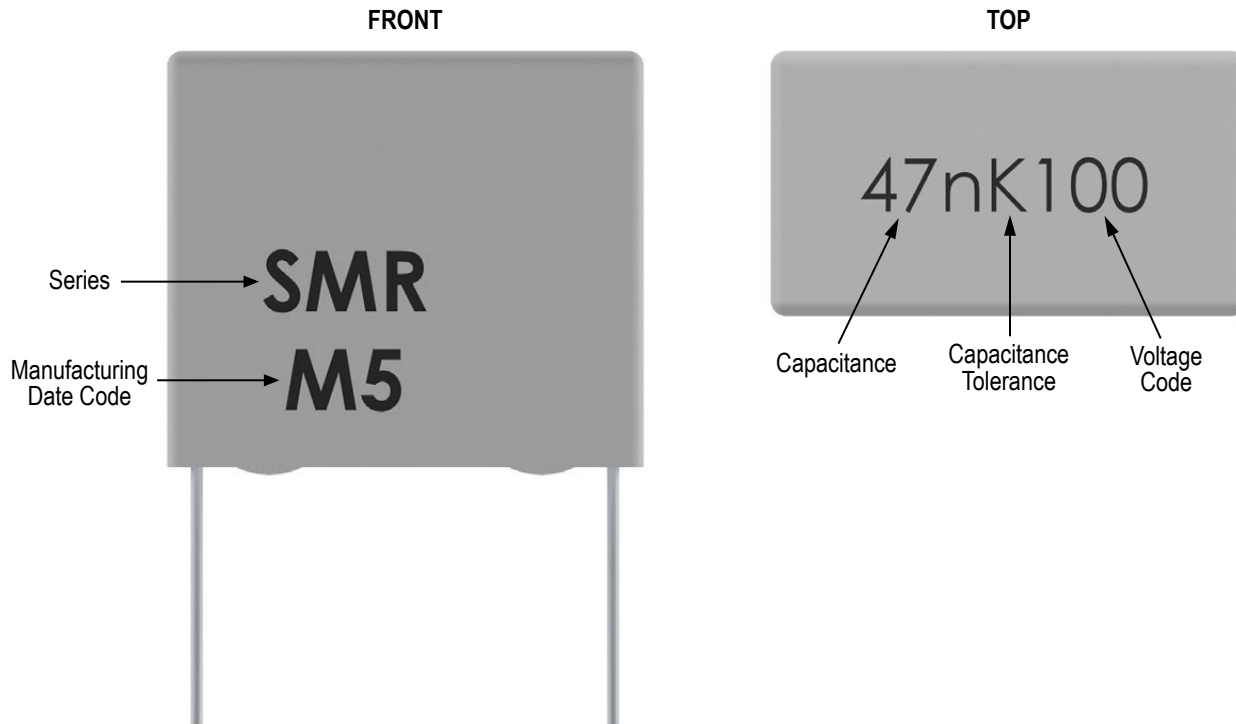
## Construction



## Winding Scheme



## Marking



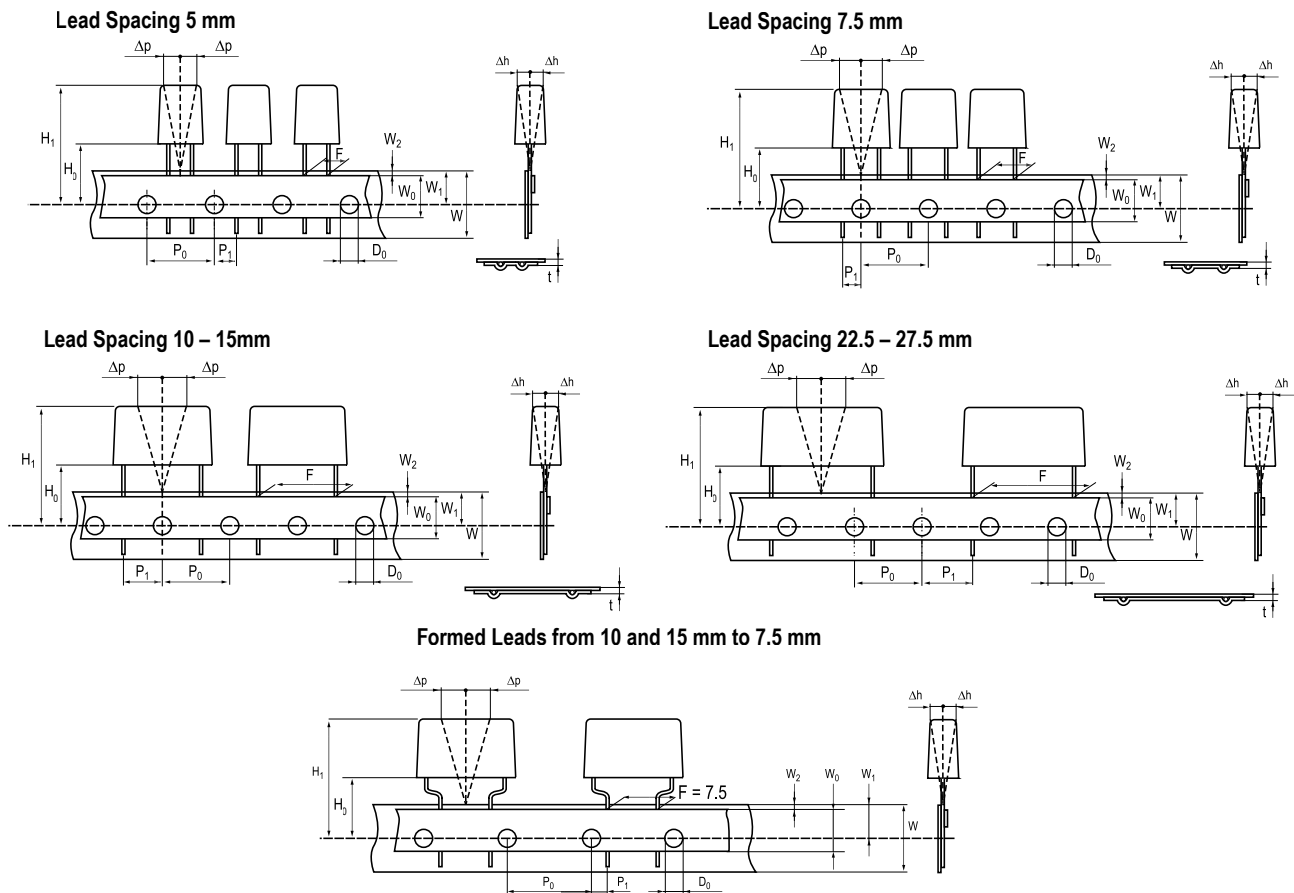
## Packaging Quantities

KEMET Size Code	Legacy Size Code	Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 360 mm	Large Reel ø 500 mm	Ammo	Standard Reel Formed	Ammo Formed
JF	J01	5	2.5	6.5	7.2	2000	2000	2500	5000	3000		
JJ	J02		3.5	8	7.2	2000	2000	2000	4000	2000		
JL	J03		4.5	9	7.2	1000	1000	1500	3000	1700		
JQ	J04		5	10	7.2	1000	1000	1300	2600	1500		
JT	J05		6	11	7.2	1000	1000	1000	2000	1200		
JU	J06		7.2	13	7.2	1000	1000	800	1600			
JH	J11		4.5	6	7.2	1000	1000	1500	3000	1700		
JK	J12		5.5	7	7.2	1000	1000	1200	2400	1300		
JR	J13		6.5	8	7.2	1000	1000	900	1800	1100		
KE	K00	7.5	2.5	6	10	2000	2000	2500	5000	3000		
KG	K01		4	8	10	1000	1000	1700	3400	1900		
KK	K03		5	11	10	1000	1000	1300	2600	1500		1200
KM	K04		6	12	10	1000	1000	1000	2000	1200		

## Packaging Quantities cont'd

KEMET Size Code	Legacy Size Code	Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 360 mm	Large Reel ø 500 mm	Ammo	Standard Reel Formed	Ammo Formed
AG	A01	10	4	9	13	1000	1000	900	1800			780
AH	A02		4.5	10.5	13	1000	1000	800	1600			
AK	A03		5	11	13	800	800	700	1400			
AP	A04		6	12	13	600	600	500	1000			520
AL	A05		9.5	7.5	13	600	600	350	700			
AE	A06		4	8	13	1000	1000	900	1800			
BD	B04	15	5.5	10.5	18	1000	800	600	1200		550	570
BE	B05		5.5	12.5	18	1000	800	600	1200		550	570
BL	B06		7.5	14.5	18	800	400	400	800		350	378
BJ	B10		6.5	12.5	18	1000	600	500	1000		450	480
BQ	B11		8.5	16	18	600	400	400	800		350	324
BM	B12		8	15	18	600	400	400	800		350	351
BV	B14		9.5	17.5	18	500	300	350	700		250	297
BG	B15		6	12	18	1000	800	500	1000		450	520
BY	B16		11	19	18	450	250	300	600		250	252
BU	B17		13	12.5	18	400	300	250	500		200	216
DD	D13	22.5	6.5	14.5	26.5	234		300	600			
DH	D14		8	16	26.5	186		250	500			
DM	D15		9	18.5	26.5	308		250	500			
DT	D16		11	21.5	26.5	253		200	400			
DF	D17		7	16.5	26.5	216		300	600			
DR	D18		10.5	19	26.5	264		200	400			
DY	D19		15.5	24.5	26.5	176		110	250			
DW	D20		13.5	23	26.5	209		160	300			
FK	F03	27.5	13.5	23	31.5	171			250			
FE	F11		10.5	20.5	31.5	216			350			
FG	F12		11.5	22.5	31.5	198			300			
FM	F13		14.5	24.5	31.5	153			250			
FR	F14		17.5	28	31.5	126						
FS	F15		19	29	31.5	117						
FV	F16		21	30	31.5	108						
FH	F17		21	12.5	31.5	108						
FT	F18		31	18.5	31.5	72						
FQ	F19		27.5	16	31.5	81						

## Lead Taping & Packaging (IEC 60286–2)



## Taping Specification

Dimensions in mm										Standard IEC 60286–2
Lead spacing	+6/-0.1	F	5	7.5	Formed 7.5	10	15	22.5	27.5	F
Carrier tape width	+/-0.5	W	18	18	18	18	18	18	18	18 <sup>+1/-0.5</sup>
Hold-down tape width	+/-0.3	W <sub>0</sub>	9	9	9	12	12	12	12	
Position of sprocket hole	+/-0.5	W <sub>1</sub>	9	9	9	9	9	9	9	9 <sup>+0.75/-0.5</sup>
Distance between tapes	Maximum	W <sub>2</sub>	3	3	3	3	3	3	3	3
Sprocket hole diameter	+/-0.2	D <sub>0</sub>	4	4	4	4	4	4	4	4
Feed hole lead spacing	+/-0.3	P <sub>0</sub> <sup>(1)</sup>	12.7	12.7	12.7 <sup>(4)</sup>	12.7	12.7	12.7	12.7	12.7
Distance lead – feed hole	+/-0.7	P <sub>1</sub>	3.85	3.75	3.75	7.7	5.2	5.3	5.3	P <sup>1</sup>
Deviation tape – plane	Maximum	$\Delta p$	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Lateral deviation	Maximum	$\Delta h$	2	2	2	2	2	2	2	2
Total thickness	+/-0.2	t	0.7	0.7	0.7	0.7	0.7	0.9 <sup>MAX</sup>	0.9 <sup>MAX</sup>	0.9 <sup>MAX</sup>
Sprocket hole/cap body	Nominal	H <sub>0</sub> <sup>(2)</sup>	18.5 <sup>+/-0.5</sup>	18.5 <sup>+/-0.5</sup>	18.5 <sup>+/-0.5</sup>	18.5 <sup>+/-0.5</sup>	18.5 <sup>+/-0.5</sup>	18.5 <sup>+/-0.5</sup>	18.5 <sup>+/-0.5</sup>	18 <sup>+2/-0</sup>
Sprocket hole/top of cap body	Maximum	H <sub>1</sub> <sup>(3)</sup>	32	31	43	43	43	58	58	58 <sup>MAX</sup>

(1) Maximum cumulative feed hole error, 1 mm per 20 parts.

(2) 16.5 mm available on request.

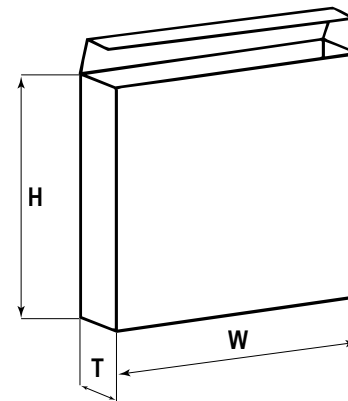
(3) Depending on case size.

(4) 15 mm available on request.

## Lead Taping & Packaging (IEC 60286–2) cont'd

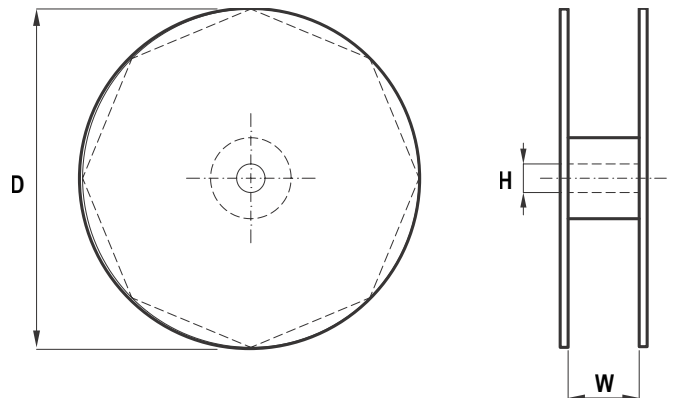
### Ammo Specifications

Series	Dimensions (mm)		
	H	W	T
R4x, R4x+R, R7x, RSB	360	340	59
F5A, F5B, F5D			
F6xx, F8xx			
PHExxx, PMExxx, PMRxxx, SMR & PFR	330	330	50



### Reel Specifications

Series	Dimensions (mm)		
	D	H	W
R4x, R4x+R, R7x, RSB	355 500	30 25	55 (Max)
F5A, F5B, F5D			
F6xx, F8xx			
PHExxx, PMExxx, PMRxxx, SMR & PFR	360 500	30	46 (Max)



### Manufacturing Date Code (IEC–60062)

Y = Year, Z = Month			
Year	Code	Month	Code
2000	M	January	1
2001	N	February	2
2002	P	March	3
2003	R	April	4
2004	S	May	5
2005	T	June	6
2006	U	July	7
2007	V	August	8
2008	W	September	9
2009	X	October	O
2010	A	November	N
2011	B	December	D
2012	C		
2013	D		
2014	E		
2015	F		
2016	H		
2017	J		
2018	K		
2019	L		
2020	M		



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