



# AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS

(DIP/BOX TYPE - MMPP - DOUBLE SIDE METALLISED FILM CAPACITOR FOR DC APPLICATIONS)

**MAIN APPLICATION:** SMPS, motor control circuits, deflection circuit in TV sets (fly back) and monitors, electronic ballast, snubber and SCR commutating circuits and applications with high voltage and high current.

**CONSTRUCTION (DIP/BOX TYPE):** Series constructed, low inductive wound cell of polypropylene and double side metallised film as electrodes coated with flame retardant epoxy resin (or, encased in flame retardant box).

**CLIMATIC CATEGORY:** 40/100/56

**APPLICABLE SPECIFICATION:** IEC 384-16

**CAPACITANCE VALUE, RATED VOLTAGE (DC):** Refer dimension chart.

**CAPACITANCE TOLERANCE:** ± 5%, ± 10%, ± 20%

**VOLTAGE PROOF**

Between terminals: 1.6 times of rated voltage for 2 seconds.

**INSULATION RESISTANCE**

Minimum Insulation Resistance  $R_{IS}$   $C_R \leq 0.33 \mu f$   $C_R > 0.33 \mu f$   
 (or) time constant  $T=C_R \times R_{IS}=30000s$   $\geq 100000 M\Omega$   $\geq 30000s$   
 at 25° C, relative humidity  $\leq 70\%$

**TAN  $\delta$  (Dip type)**

Frequency (kHz)	$C_R < 0.1 \mu f$	$0.1 \mu f < C_R \leq 1 \mu f$	$C_R > 1 \mu f$
At 1	0.03%	0.03%	0.04%
At 10	0.04%	0.06%	
At 100	0.15%		

**TAN  $\delta$  (Box type)**

Frequency (kHz)	$C_R < 0.1 \mu f$	$0.1 \mu f < C_R \leq 1 \mu f$	$C_R \geq 1 \mu f$
At 1	0.03%	0.03%	0.04%
At 10	0.04%	0.06%	
At 100	0.15%		

**LIFE TEST CONDITIONS (Loading at elevated temperature)**

Loaded at 1.25 times of rated voltage at 85° C or 1.25 times of category voltage at 100° C for 2000 hours. Category voltage is 80% of the rated voltage at 100° C.

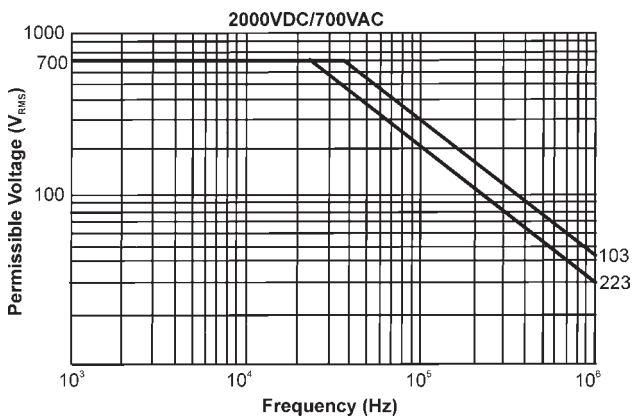
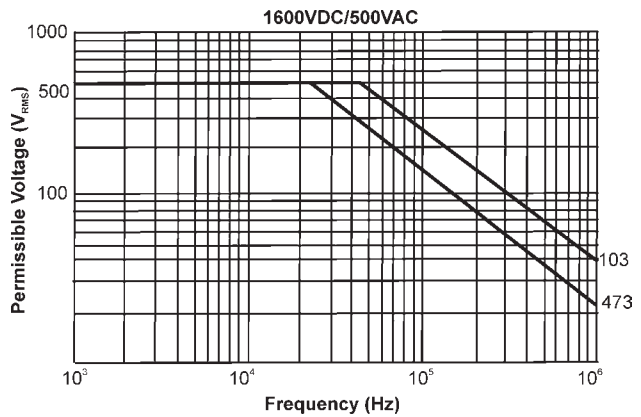
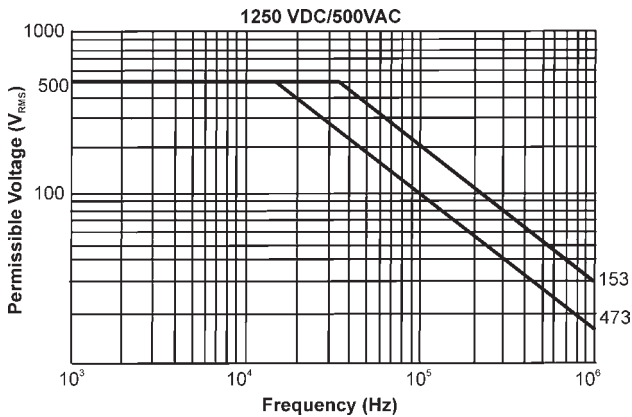
**AFTER THE TEST**

$\Delta c/c$ :  $\leq 3\%$  of initial value.

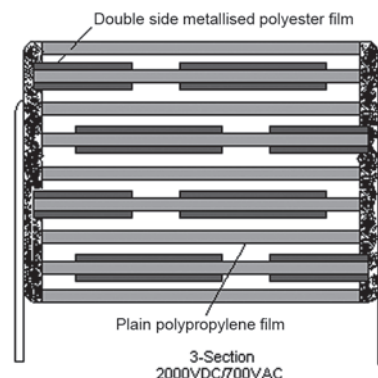
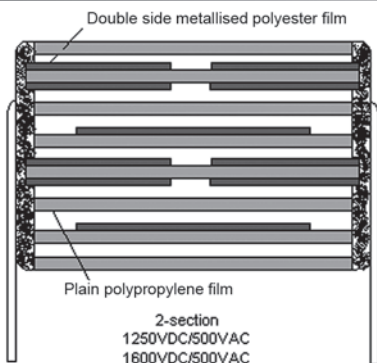
Increase of Tan  $\delta$ :  $\leq 0.001$ .

Insulation resistance:  $\geq 50\%$  of the value mentioned in IR chart.

Permissible AC Voltage  $V_{RMS}$  vs. Frequency F at Ambient Temperature 25° C



**Construction**



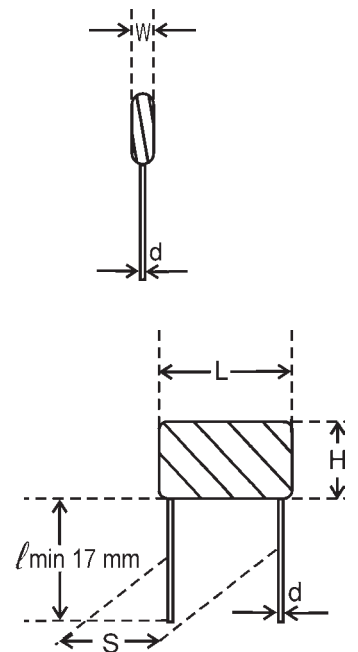
## Ordering Code and Packing Units: AC & Pulse Metallised Polypropylene Film Capacitors (MMPP Series)

Rated Voltage	Rated Cap. (µf)	Maximum Dimensions (mm)						Dv/Dt V/µs	Wt g	Ordering code	Packing units	
		W	H	L	d ±0.05	S ±0.5	F ±0.8/-0.2				Ammo	Bulk
1250V DC	0.0082	6.5	12.5	19	0.8	15.0	15.0	3300	1.5	61 822 +3B <sup>^A</sup>	1100	1000
500V AC	0.01	7.0	12.5	19	0.8	15.0	15.0	3300	1.6	61 103 +3B <sup>^A</sup>	1100	1000
	0.012	8.0	14.0	19	0.8	15.0	15.0	3300	1.8	61 123 +3B <sup>^A</sup>	900	1000
	0.015	8.0	15.0	19	0.8	15.0	15.0	3300	1.8	61 153 +3B <sup>^A</sup>	900	1000
	0.018	8.0	15.0	19	0.8	15.0	15.0	3300	2.0	61 183 +3B <sup>^A</sup>	900	1000
	0.022	9.0	16.0	19	0.8	15.0	15.0	3300	2.0	61 223 +3B <sup>^A</sup>	700	1000
	0.027	10.0	17.0	19	0.8	15.0	15.0	3300	2.6	61 273 +3B <sup>^A</sup>	700	1000
	0.033	12.0	18.0	19	0.8	15.0	15.0	3300	2.8	61 333 +3B <sup>^A</sup>	-	1000
	0.039	12.0	18.0	19	0.8	15.0	15.0	3300	2.8	61 393 +3B <sup>^A</sup>	-	1000
	0.027	7.0	15.0	27	0.8	22.5	22.5	2100	4.5	61 273 +3B <sup>^A</sup>	-	400
	0.033	8.0	16.5	27	0.8	22.5	22.5	2100	4.5	61 333 +3B <sup>^A</sup>	-	400
	0.039	9.0	16.0	27	0.8	22.5	22.5	2100	4.5	61 393 +3B <sup>^A</sup>	-	400
	0.047	9.5	17.0	27	0.8	22.5	22.5	2100	4.5	61 473 +3B <sup>^A</sup>	-	400
	0.056	10.5	19.0	27	0.8	22.5	22.5	2100	4.5	61 563 +3B <sup>^A</sup>	-	400
	0.068	10.5	19.0	27	0.8	22.5	22.5	2100	4.5	61 683 +3B <sup>^A</sup>	-	400
	0.082	10.5	19.0	27	0.8	22.5	22.5	2100	4.5	61 823 +3B <sup>^A</sup>	-	400
1600V DC	0.0033	5.5	11.5	19	0.8	15.0	15.0	6000	1.1	61 332 +3C <sup>^A</sup>	1100	1000
500V AC	0.0039	5.5	11.5	19	0.8	15.0	15.0	6000	1.1	61 392 +3C <sup>^A</sup>	1100	1000
	0.0047	5.5	11.5	19	0.8	15.0	15.0	6000	1.1	61 472 +3C <sup>^A</sup>	1100	1000
	0.0056	5.5	11.5	19	0.8	15.0	15.0	6000	1.1	61 562 +3C <sup>^A</sup>	1100	1000
	0.0068	5.5	11.5	19	0.8	15.0	15.0	6000	1.1	61 682 +3C <sup>^A</sup>	1100	1000
	0.0082	6.5	12.5	19	0.8	15.0	15.0	6000	1.5	61 822 +3C <sup>^A</sup>	1100	1000
	0.01	6.5	12.5	19	0.8	15.0	15.0	6000	1.5	61 103 +3C <sup>^A</sup>	1100	1000
	0.012	8.0	14.0	19	0.8	15.0	15.0	6000	2.0	61 123 +3C <sup>^A</sup>	900	1000
	0.015	8.0	14.0	19	0.8	15.0	15.0	6000	2.0	61 153 +3C <sup>^A</sup>	900	1000
	0.018	9.0	15.0	19	0.8	15.0	15.0	6000	2.6	61 183 +3C <sup>^A</sup>	700	1000
	0.022	9.0	16.0	19	0.8	15.0	15.0	6000	2.8	6 223 +3C <sup>^A</sup>	700	1000
	0.027	10.5	17.0	19	0.8	15.0	15.0	6000	2.8	61 273 +3C <sup>^A</sup>	700	1000
	0.015	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	61 153 +3C <sup>^A</sup>	-	400
	0.018	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	61 183 +3C <sup>^A</sup>	-	400
	0.022	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	61 223 +3C <sup>^A</sup>	-	400
	0.027	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	61 273 +3C <sup>^A</sup>	-	400
	0.033	7.5	17.0	27	0.8	22.5	22.5	3000	3.5	61 333 +3C <sup>^A</sup>	-	400
	0.039	9.0	18.0	27	0.8	22.5	22.5	3000	4.5	61 393 +3C <sup>^A</sup>	-	400
	0.047	10.5	19.0	27	0.8	22.5	22.5	3000	5.4	61 473 +3C <sup>^A</sup>	-	400
	0.056	10.5	19.0	27	0.8	22.5	22.5	3000	5.4	61 563 +3C <sup>^A</sup>	-	400
2000V DC	0.00022	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 221 +3D <sup>^A</sup>	1100	1000
700V AC	0.00027	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 271 +3D <sup>^A</sup>	1100	1000
	0.00033	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 331 +3D <sup>^A</sup>	1100	1000
	0.00039	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 391 +3D <sup>^A</sup>	1100	1000
	0.00047	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 471 +3D <sup>^A</sup>	1100	1000
	0.00056	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 561 +3D <sup>^A</sup>	1100	1000
	0.00068	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 681 +3D <sup>^A</sup>	1100	1000
	0.00082	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 821 +3D <sup>^A</sup>	1100	1000
	0.001	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 102 +3D <sup>^A</sup>	1100	1000
	0.0015	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 152 +3D <sup>^A</sup>	1100	1000
	0.0018	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 182 +3D <sup>^A</sup>	1100	1000
	0.0022	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 222 +3D <sup>^A</sup>	1100	1000
	0.0027	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 272 +3D <sup>^A</sup>	1100	1000
	0.0033	6.5	12.5	19	0.8	15.0	15.0	9500	1.5	61 332 +3D <sup>^A</sup>	1100	1000
	0.0039	6.5	12.5	19	0.8	15.0	15.0	9500	1.5	61 392 +3D <sup>^A</sup>	1100	1000
	0.0047	6.5	12.5	19	0.8	15.0	15.0	9500	1.5	61 472 +3D <sup>^A</sup>	1100	1000
	0.0056	8.0	14.0	19	0.8	15.0	15.0	9500	2.0	61 562 +3D <sup>^A</sup>	900	1000
	0.0068	8.0	14.0	19	0.8	15.0	15.0	9500	2.0	61 682 +3D <sup>^A</sup>	900	1000
	0.0082	9.0	15.0	19	0.8	15.0	15.0	9500	2.6	61 822 +3D <sup>^A</sup>	700	1000
	0.01	10.5	16.5	19	0.8	15.0	15.0	9500	2.8	61 103 +3D <sup>^A</sup>	700	1000
	0.001	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 102 +3D <sup>^A</sup>	-	400
	0.0015	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 152 +3D <sup>^A</sup>	-	400
	0.0018	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 182 +3D <sup>^A</sup>	-	400
	0.0022	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 222 +3D <sup>^A</sup>	-	400
	0.0027	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 272 +3D <sup>^A</sup>	-	400
	0.0033	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 332 +3D <sup>^A</sup>	-	400
	0.0039	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 392 +3D <sup>^A</sup>	-	400
	0.0047	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 472 +3D <sup>^A</sup>	-	400
	0.0056	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 562 +3D <sup>^A</sup>	-	400
	0.0068	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 682 +3D <sup>^A</sup>	-	400
	0.0082	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 822 +3D <sup>^A</sup>	-	400
	0.01	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 103 +3D <sup>^A</sup>	-	400
	0.015	7.5	16.5	27	0.8	22.5	22.5	3500	3.5	61 153 +3D <sup>^A</sup>	-	400
	0.018	8.5	17.5	27	0.8	22.5	22.5	3500	4.5	61 183 +3D <sup>^A</sup>	-	400
	0.022	9.0	17.5	27	0.8	22.5	22.5	3500	5.0	61 223 +3D <sup>^A</sup>	-	400
	0.027	10.5	18.5	27	0.8	22.5	22.5	3500	5.4	61 273 +3D <sup>^A</sup>	-	400
	0.033	11.5	20	27	0.8	22.5	22.5	3500	5.4	61 333 +3D <sup>^A</sup>	-	400

### Dip type

#### NOTE

- Replace the + by the code letter for the required tolerance.  
F:±1%, G:±2%, H:±2.5%, J:±5%, K:±10%, M:±20%
- Replace \* by the code letter for packing type.  
1 : Bulk Packing  
2 : Bulk Packing (After forming & cutting)  
3 : Ammo Packing (F&T)  
4 : Bulk Packing (forming in original pitch)  
5 : Bulk Packing (formed & without cut)  
6 : Ammo Packing (Straight Lead)  
7 : Bulk Packing (Straight Lead cut)
- Replace ^ by the code letter indicated drawing reference.  
A : As per the catalogue  
B-Z : customer drawing reference
- These are the most popular values. Other values in the range are available on request.  
For dimensions, please refer to the closest higher value.



The dv/dt test is carried out for 2 times above value

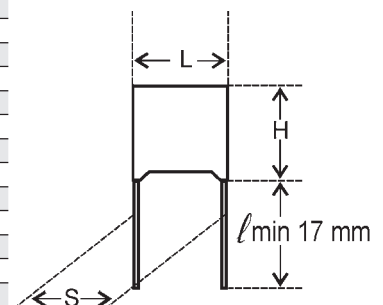
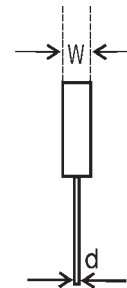
Ordering Code and Packing Units: AC & Pulse Metallised Polypropylene Film Capacitors (MMPP Series)

Rated Voltage	Rated Cap. (µf)	Dimensions (mm)						Dv/Dt V/µs	Wt g	Ordering code	Packing units	
		W ±0.2	H ±0.2	L ±0.2	d ±0.05	S ±0.5	F ±0.8/-0.2				Ammo	Bulk
1250V DC	0.0082	6.0	11.9	18.0	0.8	15.0	15.0	3300	1.5	66 822 +3B <sup>^A</sup>	1100	500
500V AC	0.01	6.0	11.9	18.0	0.8	15.0	15.0	3300	1.5	66 103 +3B <sup>^A</sup>	1100	500
	0.012	7.5	13.5	18.0	0.8	15.0	15.0	3300	2.0	66 123 +3B <sup>^A</sup>	900	500
	0.015	7.5	13.5	18.0	0.8	15.0	15.0	3300	2.0	66 153 +3B <sup>^A</sup>	900	500
	0.018	7.5	13.5	18.0	0.8	15.0	15.0	3300	2.0	66 183 +3B <sup>^A</sup>	900	500
	0.022	8.5	14.5	18.0	0.8	15.0	15.0	3300	2.6	66 223 +3B <sup>^A</sup>	700	500
	0.027	10.0	16.0	18.0	0.8	15.0	15.0	3300	2.8	66 273 +3B <sup>^A</sup>	700	500
	0.027	6.0	15.0	26.5	0.8	22.5	22.5	2100	2.8	66 273 +3B <sup>^A</sup>	-	400
	0.033	7.0	16.0	26.5	0.8	22.5	22.5	2100	3.5	66 333 +3B <sup>^A</sup>	-	400
	0.039	7.0	16.0	26.5	0.8	22.5	22.5	2100	3.5	66 393 +3B <sup>^A</sup>	-	400
	0.047	8.5	17.0	26.5	0.8	22.5	22.5	2100	4.5	66 473 +3B <sup>^A</sup>	-	400
	0.056	10.0	18.5	26.5	0.8	22.5	22.5	2100	5.4	66 563 +3B <sup>^A</sup>	-	400
	0.068	10.0	18.5	26.5	0.8	22.5	22.5	2100	5.4	66 683 +3B <sup>^A</sup>	-	400
1600V DC	0.0033	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	66 332 +3C <sup>^A</sup>	1100	500
500V AC	0.0039	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	66 392 +3C <sup>^A</sup>	1100	500
	0.0047	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	66 472 +3C <sup>^A</sup>	1100	500
	0.0056	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	66 562 +3C <sup>^A</sup>	1100	500
	0.0068	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	66 682 +3C <sup>^A</sup>	1100	500
	0.0082	6.0	11.9	18.0	0.8	15.0	15.0	6000	1.5	66 822 +3C <sup>^A</sup>	1100	500
	0.01	6.0	11.9	18.0	0.8	15.0	15.0	6000	1.5	66 103 +3C <sup>^A</sup>	1100	500
	0.012	7.5	13.5	18.0	0.8	15.0	15.0	6000	2.0	66 123 +3C <sup>^A</sup>	900	500
	0.015	7.5	13.5	18.0	0.8	15.0	15.0	6000	2.0	66 153 +3C <sup>^A</sup>	900	500
	0.018	8.5	14.5	18.0	0.8	15.0	15.0	6000	2.6	66 183 +3C <sup>^A</sup>	700	500
	0.027	10.0	16.0	18.0	0.8	15.0	15.0	6000	2.8	66 273 +3C <sup>^A</sup>	700	500
	0.015	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	66 153 +3C <sup>^A</sup>	-	400
	0.018	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	66 183 +3C <sup>^A</sup>	-	400
	0.022	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	66 223 +3C <sup>^A</sup>	-	400
	0.027	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	66 273 +3C <sup>^A</sup>	-	400
	0.033	7.0	16.0	26.5	0.8	22.5	22.5	3000	3.5	66 333 +3C <sup>^A</sup>	-	400
	0.039	8.5	17.0	26.5	0.8	22.5	22.5	3000	4.5	66 393 +3C <sup>^A</sup>	-	400
	0.047	10.0	18.5	26.5	0.8	22.5	22.5	3000	5.4	66 473 +3C <sup>^A</sup>	-	400
	0.056	10.0	18.5	26.5	0.8	22.5	22.5	3000	5.4	66 563 +3C <sup>^A</sup>	-	400
2000V DC	0.00022	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 221 +3D <sup>^A</sup>	1100	500
700V AC	0.00027	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 271 +3D <sup>^A</sup>	1100	500
	0.00033	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 331 +3D <sup>^A</sup>	1100	500
	0.00039	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 391 +3D <sup>^A</sup>	1100	500
	0.00047	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 471 +3D <sup>^A</sup>	1100	500
	0.00056	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 561 +3D <sup>^A</sup>	1100	500
	0.00068	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 681 +3D <sup>^A</sup>	1100	500
	0.00082	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 821 +3D <sup>^A</sup>	1100	500
	0.001	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 102 +3D <sup>^A</sup>	1100	500
	0.0012	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 122 +3D <sup>^A</sup>	1100	500
	0.0015	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 152 +3D <sup>^A</sup>	1100	500
	0.0018	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 182 +3D <sup>^A</sup>	1100	500
	0.0022	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 222 +3D <sup>^A</sup>	1100	500
	0.0027	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 272 +3D <sup>^A</sup>	1100	500
	0.0033	6.0	11.9	18.0	0.8	15.0	15.0	9500	1.5	66 332 +3D <sup>^A</sup>	1100	500
	0.0039	6.0	11.9	18.0	0.8	15.0	15.0	9500	1.5	66 392 +3D <sup>^A</sup>	1100	500
	0.0047	6.0	11.9	18.0	0.8	15.0	15.0	9500	1.5	66 472 +3D <sup>^A</sup>	1100	500
	0.0056	7.5	13.5	18.0	0.8	15.0	15.0	9500	2.0	66 562 +3D <sup>^A</sup>	900	500
	0.0068	7.5	13.5	18.0	0.8	15.0	15.0	9500	2.0	66 682 +3D <sup>^A</sup>	900	500
	0.0082	8.5	14.5	18.0	0.8	15.0	15.0	9500	2.6	66 822 +3D <sup>^A</sup>	700	500
	0.01	10.0	16.0	18.0	0.8	15.0	15.0	9500	2.8	66 103 +3D <sup>^A</sup>	700	500
	0.001	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 102 +3D <sup>^A</sup>	-	400
	0.0012	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 122 +3D <sup>^A</sup>	-	400
	0.0015	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 152 +3D <sup>^A</sup>	-	400
	0.0018	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 182 +3D <sup>^A</sup>	-	400
	0.0022	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 222 +3D <sup>^A</sup>	-	400
	0.0027	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 272 +3D <sup>^A</sup>	-	400
	0.0033	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 332 +3D <sup>^A</sup>	-	400
	0.0039	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 392 +3D <sup>^A</sup>	-	400
	0.0047	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 472 +3D <sup>^A</sup>	-	400
	0.0056	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 562 +3D <sup>^A</sup>	-	400
	0.0068	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 682 +3D <sup>^A</sup>	-	400
	0.0082	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 822 +3D <sup>^A</sup>	-	400
	0.01	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 103 +3D <sup>^A</sup>	-	400
	0.012	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 123 +3D <sup>^A</sup>	-	400
	0.015	7.0	16.0	26.5	0.8	22.5	22.5	3500	3.5	66 153 +3D <sup>^A</sup>	-	400
	0.022	8.5	17.0	26.5	0.8	22.5	22.5	3500	4.5	66 223 +3D <sup>^A</sup>	-	400
	0.027	10.0	18.5	26.5	0.8	22.5	22.5	3500	5.4	66 273 +3D <sup>^A</sup>	-	400

Box type

NOTE

1. Replace the + by the code letter for the required tolerance.  
F:±1%, G:±2%, H:±2.5%, J:±5%, K:±10%, M:±20%
2. Replace \* by the code letter for packing type.  
1 : Bulk Packing  
2 : Bulk Packing (After forming & cutting)  
3 : Ammo Packing (F&T)  
4 : Bulk Packing (forming in original pitch)  
5 : Bulk Packing (formed & without cut)  
6 : Ammo Packing (Straight Lead)  
7 : Bulk Packing (Straight Lead cut)
3. Replace ^ by the code letter indicated drawing reference.  
A : As per the catalogue  
B-Z : customer drawing reference
4. These are the most popular values. Other values in the range are available on request.  
For dimensions, please refer to the closest higher value.



The dv/dt test is carried out for 2 times above value