

DC FILTERING

FFLR 600Vdc to 3800Vdc* RoHS Compliant



The FFLR series is specifically designed for DC filtering applications such as DC link. This range offers solutions for voltage from 600V up to 3800V.

The Self Healing Technology, essential to ensure a safe and reliable behavior, is achieved using a fully dry solution with polypropylene metalized film. Standard designs proposed in this catalogue are covering a wide range of voltage and capacitance values.

In case of specific requirements about shape and performances, please feel free to contact your local KYOCERA AVX representative.

STANDARDS

- IEC 61071: Power electronic capacitors
- IEC 60068-2: Environmental testing
- IEC 61373: Shock and vibrations
- UL 94: Fire requirements
- UL810:

PACKAGING MATERIAL

- Aluminum cylindrical case filled polyurethane resin.
- Self extinguishing polyurethane resin (V0 : in accordance with UL94)
- Self extinguishing plastic cover (V0 : in accordance with UL94)
- RoHS components
- M6/10 Female connections or M8/20 Male connections

HOW TO ORDER

FFLR 6 Q 0657 K **

Series ————— FFLR

Dielectric ————— 6
6 = Polypropylene

Voltage Code ————— Q
 Q = 600V N = 2000V
 A = 700V T = 2250V
 B = 800V U = 2500V
 C = 900V W = 2750V
 K = 1000V X = 3000V
 L = 1100V Y = 3500V
 P = 1200V Z = 3800V
 V = 1300V
 R = 1500V
 S = 1750V

Terminal Code
 -- = Male Threaded
 JE = Female Threaded

Capacitance Tolerances
 K = ±10%

EIA Code ————— 0657 K **

DEFINITIONS

C_n (μF)	capacitance	nominal value of the capacitance measured at $\theta_{amb} = 25 \pm 10^{\circ}\text{C}$
U_r (V)	rated DC voltage	maximum operating peak voltage of either polarity (non-reversing type waveform), for which the capacitor has been designed for continuous operation
U_w (V)	working voltage	value of the maximum operating recurrent voltage for a given hot spot temperature and an expected lifetime
U_p (V)	ripple voltage	peak-to-peak alternating component of the unidirectional voltage
L_s (nH)	parasitic inductance	capacitor series self-inductance
R_s (mΩ)	series resistance	capacitor series resistance due to galvanic circuit
I_{rms} (A)	RMS current	RMS current value for continuous operation under natural convection generating 40°C overheating
θ_{amb} (°C)	cooling air temperature	Temperature of the cooling air measured at the hottest position of the capacitor, under steady-state conditions, midway between two units Note If only one unit is involved, it is the temperature measured at a point approximately 0.1 m away from the capacitor container and at two-thirds of the height from its base
θ_{HS} (°C)	hot spot temperature	highest temperature obtained inside the case of the capacitor in thermal equilibrium
I²t (A²s)	integral of action	maximum repetitive integral of action that galvanic circuit is able to withstand

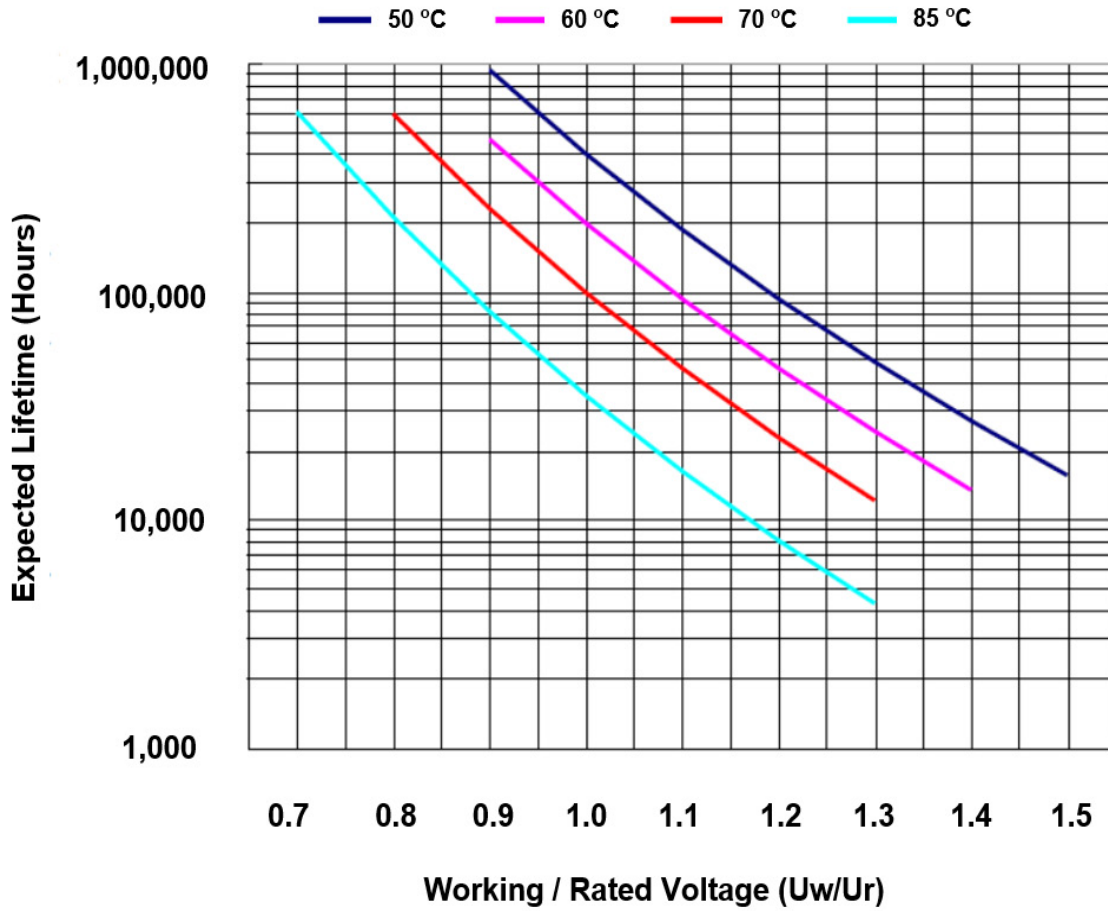
CHARACTERISTICS

Capacitance range C_n	105μF to 3000μF
Tolerance on C_n	±10%
Rated DC voltage U_n	600 to 3800V
Lifetime at U_n and 65°C hot-spot temperature and ΔC / C < 2%	100,000h
Parasitic inductance L_s	35 to 60nH
Maximum rms current I_{rms}	up to 112A _{rms}
Test voltage between terminals @ 25°C	1.5 x U _n for 10s
Test voltage between terminals and Case @ 25°C	4kV _{rms} @ 50Hz for 10s
Dielectric	polypropylene
Climatic Category	40 / 85 / 56 (IEC 60068)
Working temperature	-40°C / +85°C (according to the power dissipated)
Storage temperature	-40°C / +85°C
Calorific value	40 MJ/kg

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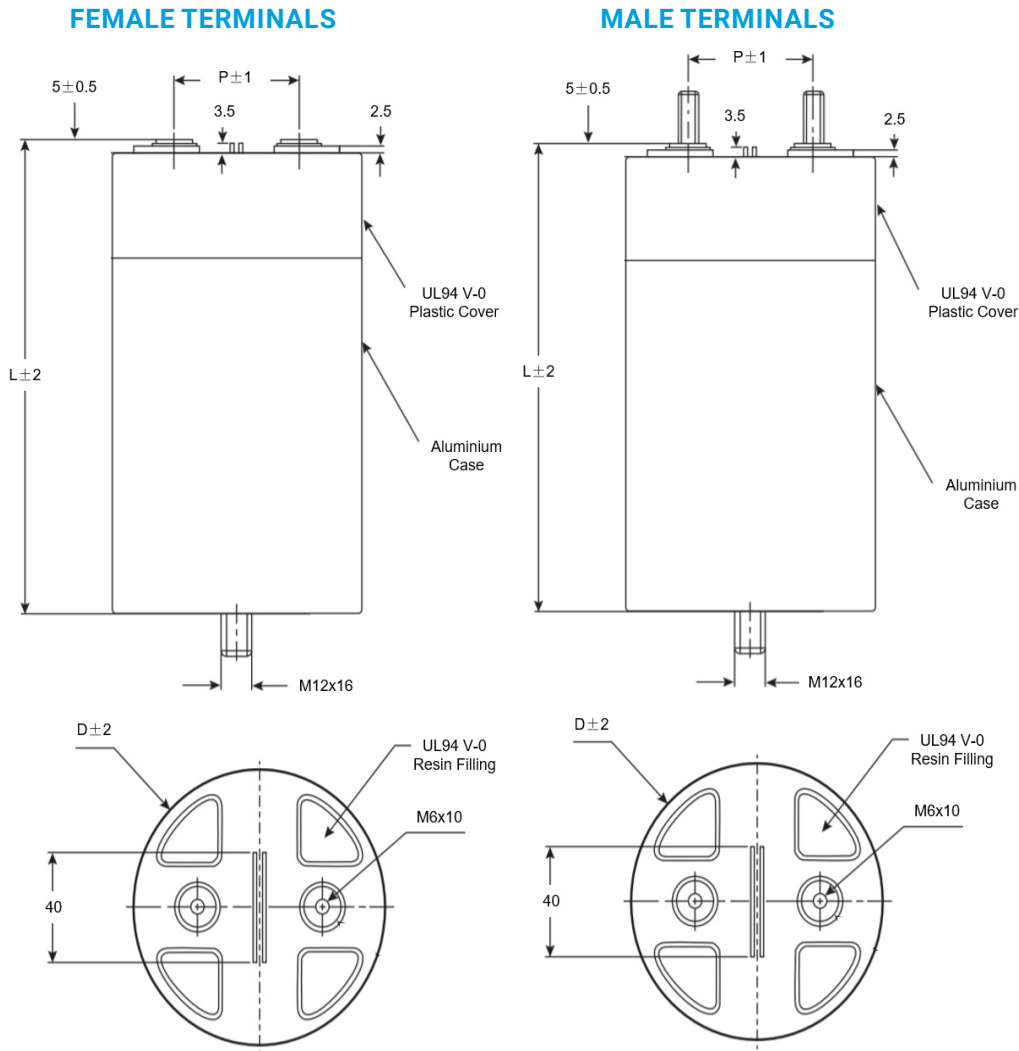
LIFETIME EXPECTANCY VS HOT SPOT TEMPERATURE AND VOLTAGE



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DIMENSIONS



D (mm)	86	100	116	136
P (mm)	32	50	50	50
Dt (mm)	12	15	15	15
Hc (mm)	30	40	40	40

	Max Torque (Nm)
M6	4.5
M8	8.5
M12	15

D (mm)	Distance terminal to terminal (mm)		Distance terminal to case (mm)	
	Creepage	Clearance	Creepage	Clearance
76	35	20	48	46
86	35	20	52	50
100	50	35	59	57
116	50	35	67	65
136	50	35	77	75

MECHANICAL MOUNTING

Capacitors enclosure presents a M12 x 16 bolt in order to fix the capacitor. Over height (H) more than 1.5 x D (diameter of tube), we recommend to clamp (constraint < 35daN), just below the plastic cover, the capacitor in order to limit oscillations in case of potential Shock&Vibration stress.

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RATINGS AND PART NUMBER REFERENCE

C (μF)	Un (V)	PN	Voltage Code	Dimensions			Irms	Peak	ESR	ESL	Thermal Res	dv/dt	SPQ	MOQ
				D	L	P	10KHz	Current	1KHz					
				mm	mm	mm	A	A	mΩ					
650	600	FFLR6Q0657K**	Q	86	105	32	70	3900	1.2	60	5	6	8	240
800	600	FFLR6Q0807K**	Q	86	142.5	32	75	6400	1.5	60	3.6	8	8	240
1000	600	FFLR6Q0108K**	Q	86	161	32	60	7500	1	65	3.7	8	8	240
220	700	FFLR6A0227K**	A	76	80	32	50	3080	2.6	40	7.2	14	12	360
300	700	FFLR6A0307K**	A	86	80	32	55	4200	2.4	40	6.5	14	8	240
420	700	FFLR6A0427K**	A	86	105	32	58	2940	2.5	50	4.2	7	8	240
450	700	FFLR6A0457K**	A	86	126	32	65	3150	2.3	50	4.6	7	8	240
550	700	FFLR6A0557K**	A	86	142.5	32	65	3300	2.5	60	4.1	6	8	240
290	800	FFLR6B0297K**	B	76	105	32	50	3045	4	60	4	11	12	360
300	800	FFLR6B0307K**	B	86	105	32	60	2550	2.5	60	3.8	9	8	240
390	800	FFLR6B0397K**	B	86	105	32	62	3315	2.9	60	3.6	9	8	240
450	800	FFLR6B0457K**	B	86	142.5	32	65	3600	2.4	60	3.2	8	8	240
460	800	FFLR6B0467K**	B	86	151	50	70	3680	2.3	50	3.4	8	8	240
850	800	FFLR6B0857K**	B	86	205	50	60	4250	1.8	50	3.6	5	8	240
1000	800	FFLR6B0108K**	B	116	155	50	65	7000	1.8	60	2.6	7	5	150
1600	800	FFLR6B0168K**	B	116	180	50	75	9600	3	65	3.4	6	5	150
480	900	FFLR6C0487K**	C	86	142.5	32	65	4080	2	50	4.2	9	8	240
1000	900	FFLR6C0108K**	C	116	155	50	68	7000	1.6	80	3	7	5	150
1500	900	FFLR6C0158K**	C	116	185	50	60	12000	2	65	4.8	8	5	150
1800	900	FFLR6C0188K**	C	116	235	50	100	14400	0.8	60	2.4	8	5	150
900	1000	FFLR6K0907K**	K	116	155	50	72	10800	2.9	85	2.6	12	5	150
1300	1000	FFLR6K0138K**	K	116	230	50	100	9750	1.5	100	2.4	8	5	150
1600	1000	FFLR6K0168K**	K	116	230	50	100	8000	1.5	75	2.1	5	5	150
170	1100	FFLR6L0177K**	L	76	105	32	50	1700	3.2	60	3.8	10	12	360
240	1100	FFLR6L0247K**	L	86	105	32	55	3000	1.7	50	3.8	13	8	240
300	1100	FFLR6L0307K**	L	86	142.5	32	58	2550	2	60	2.7	9	8	240
330	1100	FFLR6L0337K**	L	86	142.5	32	60	2805	3	60	3.3	9	8	240
400	1100	FFLR6L0407K**	L	86	142.5	32	60	3400	2.8	60	3.3	9	8	240
420	1100	FFLR6L0427K**	L	86	142.5	32	58	3570	2.3	85	3	9	8	240
500	1100	FFLR6L0507K**	L	86	180	32	72	6000	1.5	80	3	12	8	240
600	1100	FFLR6L0607K**	L	86	225	32	65	6300	2.5	60	2	11	8	240
720	1100	FFLR6L0727K**	L	116	155	50	69	9360	3.2	85	2.6	13	5	150
800	1100	FFLR6L0807K**	L	116	170	50	80	8800	1.5	55	2.4	11	5	150
1000	1100	FFLR6L0108K**	L	116	205	50	85	10000	2.2	50	2.5	10	5	150
1100	1100	FFLR6L0118K**	L	116	230	50	90	9900	1.3	60	2.1	9	5	150
1600	1100	FFLR6L0168K**	L	116	340	50	100	12000	2.3	100	2.4	8	5	150
1700	1100	FFLR6L0178K**	L	136	235	50	110	10200	1.5	60	1.7	6	2	60
2000	1100	FFLR6L0208K**	L	136	265	50	120	12000	1.2	60	1.3	6	2	60
2200	1100	FFLR6L0228K**	L	136	340	50	120	13200	1.2	60	1	6	2	60
420	1200	FFLR6P0427K**	P	86	180	32	60	4200	3	70	3.2	10	8	240
540	1200	FFLR6P0547K**	P	86	225	32	60	5400	2.5	85	3.3	10	8	240
950	1200	FFLR6P0957K**	P	116	235	50	90	9500	1.5	75	2.1	10	5	150
1000	1200	FFLR6P0108K**	P	116	235	50	90	10000	1.5	75	2.1	10	5	150
1200	1200	FFLR6P0128K**	P	116	265	50	70	12000	0.8	50	1.5	10	5	150
250	1300	FFLR6V0257K**	V	86	142	32	40	2000	4	85	5.4	8	8	240
330	1300	FFLR6V0337K**	V	86	180	32	55	4950	2.6	80	3.4	15	8	240
420	1300	FFLR6V0427K**	V	116	105	32	50	6300	2.3	40	2.1	15	5	150
470	1300	FFLR6V0477K**	V	116	161	50	65	5640	1.5	80	7.1	12	5	150
1100	1300	FFLR6V0118K**	V	116	330	50	85	9900	2.7	200	2.1	9	5	150
250	1500	FFLR6R0257K**	R	86	155	32	51	3000	3.2	50	3.6	12	8	240

**Insert -- for male terminals or JE for female terminals

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RATINGS AND PART NUMBER REFERENCE

C (µF)	Un (V)	PN	Voltage Code	Dimensions			Irms 10KHz 50°C	Peak Current	ESR 1KHz	ESL	Thermal Res	dv/dt	SPQ	MOQ
				D	L	P								
				mm	mm	mm	A	A	mΩ	nH	*C/W	V/us	pcs	pcs
310	1500	FFLR6R0317K**	R	86	180	32	49	3720	3.8	60	3.3	12	8	240
370	1500	FFLR6R0377K**	R	100	155	50	62	4440	2.3	50	3.3	12	5	150
450	1500	FFLR6R0457K**	R	100	180	50	59	5400	2.7	60	3.1	12	5	150
510	1500	FFLR6R0517K**	R	116	155	50	74	6120	1.8	50	3.1	12	5	150
620	1500	FFLR6R0627K**	R	116	180	50	70	6200	2.1	60	2.9	10	5	150
700	1500	FFLR6R0707K**	R	116	240	50	92	7000	1.1	40	3.2	10	5	150
900	1500	FFLR6R0907K**	R	116	290	50	90	7200	1.3	50	2.9	8	5	150
1100	1500	FFLR6R0118K**	R	116	340	50	89	7700	1.5	60	2.5	7	5	150
185	1750	FFLR6S1856K**	S	86	155	32	48	2775	3.7	50	3.6	15	8	240
225	1750	FFLR6S2256K**	S	86	180	32	46	3375	4.4	60	3.3	15	8	240
270	1750	FFLR6S0277K**	S	100	155	50	58	4050	2.6	50	3.3	15	5	150
330	1750	FFLR6S0337K**	S	100	180	50	56	4950	3.1	60	3.1	15	5	150
370	1750	FFLR6S0377K**	S	116	155	50	69	5550	2	50	3.1	15	5	150
450	1750	FFLR6S0457K**	S	116	180	50	65	5850	2.4	60	2.9	13	5	150
520	1750	FFLR6S0527K**	S	116	240	50	89	5720	1.2	40	3.2	11	5	150
670	1750	FFLR6S0677K**	S	116	290	50	86	6030	1.4	50	2.9	9	5	150
820	1750	FFLR6S0827K**	S	116	340	50	85	6560	1.7	60	2.5	8	5	150
140	2000	FFLR6N0147K**	N	86	155	32	45	2520	4.2	50	3.6	18	8	240
170	2000	FFLR6N0177K**	N	86	180	32	43	3060	5	60	3.3	18	8	240
205	2000	FFLR6N2056K**	N	100	155	50	55	3690	3	50	3.3	18	5	150
250	2000	FFLR6N0257K**	N	100	180	50	52	4000	3.5	60	3.1	16	5	150
280	2000	FFLR6N0287K**	N	116	155	50	65	4480	2.3	50	3.1	16	5	150
350	2000	FFLR6N0357K**	N	116	180	50	62	5250	2.6	60	2.9	15	5	150
400	2000	FFLR6N0407K**	N	116	240	50	85	5600	1.3	40	3.2	14	5	150
510	2000	FFLR6N0517K**	N	116	290	50	82	6630	1.5	50	2.9	13	5	150
620	2000	FFLR6N0627K**	N	116	340	50	81	7440	1.8	60	2.5	12	5	150
110	2250	FFLR6T0117K**	T	86	155	32	43	1760	4.7	50	3.6	16	8	240
135	2250	FFLR6T1356K**	T	86	180	32	41	2160	5.5	60	3.3	16	8	240
160	2250	FFLR6T0167K**	T	100	155	50	52	2560	3.3	50	3.3	16	5	150
195	2250	FFLR6T1956K**	T	100	180	50	49	2925	4	60	3.1	15	5	150
220	2250	FFLR6T0227K**	T	116	155	50	62	3300	2.5	50	3.1	15	5	150
270	2250	FFLR6T0277K**	T	116	180	50	59	4050	3	60	2.9	15	5	150
310	2250	FFLR6T0317K**	T	116	240	50	81	4340	1.4	40	3.2	14	5	150
400	2250	FFLR6T0407K**	T	116	290	50	79	5200	1.7	50	2.9	13	5	150
490	2250	FFLR6T0497K**	T	116	340	50	78	6125	2	60	2.5	12.5	5	150
85	2500	FFLR6U0856K**	U	86	155	32	40	1530	5.2	50	3.6	18	8	240
105	2500	FFLR6U1056K**	U	86	180	32	39	1890	6.1	60	3.3	18	8	240
120	2500	FFLR6U0127K**	U	100	155	50	49	2160	3.8	50	3.3	18	5	150
150	2500	FFLR6U0157K**	U	100	180	50	47	2700	4.4	60	3.1	18	5	150
170	2500	FFLR6U0177K**	U	116	155	50	59	3400	2.8	50	3.1	20	5	150
210	2500	FFLR6U0217K**	U	116	180	50	56	4200	3.3	60	2.9	20	5	150
230	2500	FFLR6U0237K**	U	116	240	50	77	4600	1.6	40	3.2	20	5	150
300	2500	FFLR6U0307K**	U	116	290	50	75	5400	1.9	50	2.9	18	5	150
380	2500	FFLR6U0387K**	U	116	340	50	75	6460	2.2	60	2.5	17	5	150
70	2750	FFLR6W0706K**	W	86	155	32	39	1400	5.7	50	3.6	20	8	240
85	2750	FFLR6W0856K**	W	86	180	32	37	1700	6.8	60	3.3	20	8	240
100	2750	FFLR6W0107K**	W	100	155	50	47	2000	4.1	50	3.3	20	5	150
125	2750	FFLR6W1256K**	W	100	180	50	45	2500	4.8	60	3.1	20	5	150
140	2750	FFLR6W0147K**	W	116	155	50	56	2800	3	50	3.1	20	5	150

**Insert -- for male terminals or JE for female terminals

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C (μF)	Un (V)	PN	Voltage Code	Dimensions			Irms	Peak	ESR	ESL	Thermal Res	dv/dt	SPQ	MOQ
				D	L	P	10KHz 50°C	Current	1KHz					
				mm	mm	mm	A	A	mΩ					
170	2750	FFLR6W0177K**	W	116	180	50	53	3060	3.6	60	2.9	18	5	150
190	2750	FFLR6W0197K**	W	116	240	50	74	3230	1.7	40	3.2	17	5	150
250	2750	FFLR6W0257K**	W	116	290	50	73	4000	2	50	2.9	16	5	150
310	2750	FFLR6W0317K**	W	116	340	50	72	4960	2.4	60	2.5	16	5	150
58	3000	FFLR6X0586K**	X	86	155	32	37	1276	6.3	50	3.6	22	8	240
70	3000	FFLR6X0706K**	X	86	180	32	35	1540	7.6	60	3.3	22	8	240
85	3000	FFLR6X0856K**	X	100	155	50	45	2040	4.4	50	3.3	24	5	150
105	3000	FFLR6X1056K**	X	100	180	50	43	2520	5.2	60	3.1	24	5	150
115	3000	FFLR6X1156K**	X	116	155	50	54	2760	3.3	50	3.1	24	5	150
145	3000	FFLR6X1456K**	X	116	180	50	51	3480	3.9	60	2.9	24	5	150
160	3000	FFLR6X0167K**	X	116	240	50	72	3520	1.8	40	3.2	22	5	150
210	3000	FFLR6X0217K**	X	116	290	50	70	4620	2.1	50	2.9	22	5	150
260	3000	FFLR6X0267K**	X	116	340	50	69	5460	2.5	60	2.5	21	5	150
60	3500	FFLR6Y0606K**	Y	100	155	50	60	1500	2.5	50	3.3	25	5	150
75	3500	FFLR6Y0756K**	Y	100	180	50	58	1875	2.9	60	3.1	25	5	150
85	3500	FFLR6Y0856K**	Y	116	155	50	72	2210	1.9	50	3.1	26	5	150
105	3500	FFLR6Y1056K**	Y	116	180	50	68	2730	2.2	60	3	26	5	150
115	3500	FFLR6Y1156K**	Y	116	240	50	89	2875	1.2	40	3.3	25	5	150
150	3500	FFLR6Y0157K**	Y	116	290	50	88	3750	1.3	50	2.9	25	5	150
190	3500	FFLR6Y0197K**	Y	116	340	50	88	4560	1.6	60	2.5	24	5	150
53	3800	FFLR6Z0536K**	Z	100	155	50	59	1484	2.6	50	3.3	28	5	150
66	3800	FFLR6Z0666K**	Z	100	180	50	56	1848	3	60	3.1	28	5	150
72	3800	FFLR6Z0726K**	Z	116	155	50	69	2160	2	50	3.1	30	5	150
90	3800	FFLR6Z0906K**	Z	116	180	50	66	2700	2.3	60	3	30	5	150
100	3800	FFLR6Z0107K**	Z	116	240	50	88	2700	1.2	40	3.3	27	5	150
130	3800	FFLR6Z0137K**	Z	116	290	50	86	3380	1.4	50	2.9	26	5	150
165	3800	FFLR6Z1656K**	Z	116	340	50	87	4125	1.6	60	2.5	25	5	150

**Insert - - for male terminals or JE for female terminals