ENERGY STORAGE INNOVATOR
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Energy Storage Innovator

ENERGY STORAGE INNOVATOR

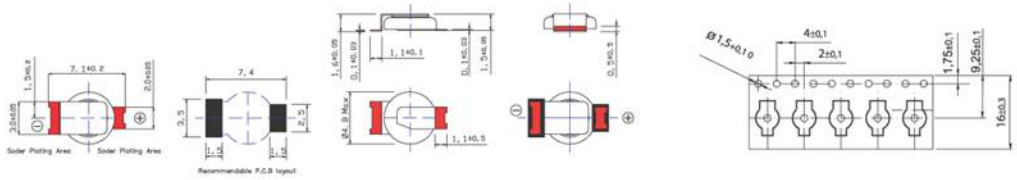
STARCAP

Electric Double Layer Capacitor

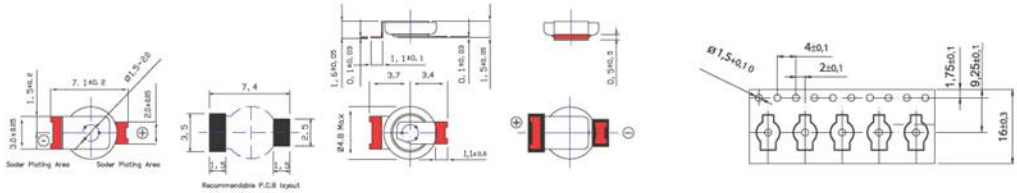
ENERGY STORAGE INNOVATOR
STARCAP

SM series (Reflow available at 260℃)

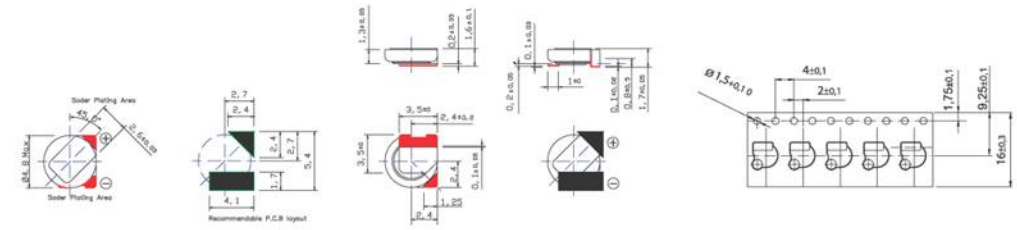
H01



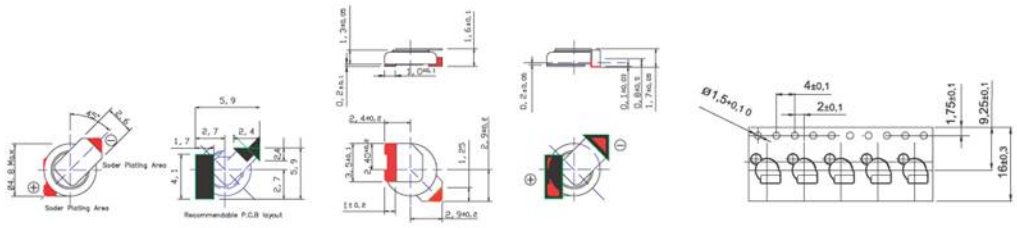
H02



T01



T02

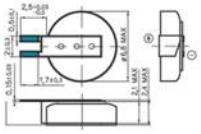


Part number	Operating voltage (V)	Capacitance (F)	ESR (Ω, @1kHz)	ΦD×L (mm)
SM 2R5 104	2.5	0.10	≤100	Φ4.8×1.4
SM 2R8 104	2.8	0.10	≤100	Φ4.8×1.4
SM 3R3 703	3.3	0.07	≤100	Φ4.8×1.4

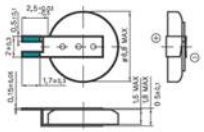
DM/DMS(R)* series

DM

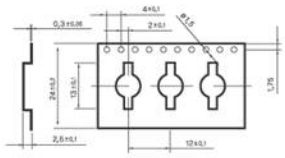
DMS(R)



DM



DMS(R)



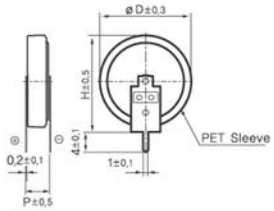
Taping dimension for DMS(R)

Part number	Operating voltage (V)	Capacitance (F)	ESR (Ω, @1kHz)	ΦD×L (mm)
DM 2R5 334	2.5	0.33	≤100	Φ6.8 × 2.1
DM 2R8 334	2.8	0.33	≤100	Φ6.8 × 2.1
DM 2R8 474	2.8	0.47	≤200	Φ6.8 × 2.1
DM 3R3 224	3.3	0.22	≤200	Φ6.8 × 2.1
DMS 2R8 254	2.8	0.25	≤100	Φ6.8 × 1.4
DMS 3R3 204	3.3	0.20	≤200	Φ6.8 × 1.4
DMSR* 3R3 204	3.3	0.20	≤200	Φ6.8 × 1.4

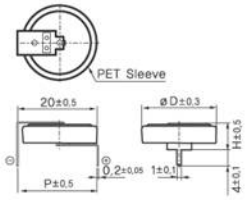
R*) Reflow available at 240℃

DCL series

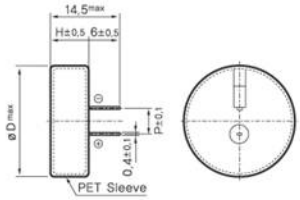
V-TYPE H-TYPE C-TYPE



V-TYPE



H-TYPE

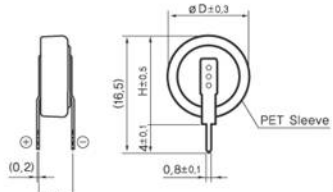


C-TYPE

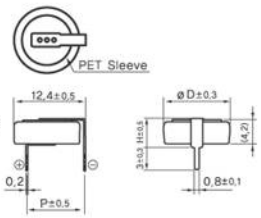
Part number	Operating voltage (V)	Capacitance (F)	ESR (Ω, @1kHz)	V type(mm)			H type(mm)			C type(mm)		
				ΦD	H	P	ΦD	H	P	ΦD	H	P
DCL 5R5 105	5.5	1.0	≤ 30	19.0	19.5	5.0	19.0	6.5	20.0	21.5	7.5	5.0
DCL 5R5 155		1.5	≤ 30	19.0	19.5	5.0	19.0	6.5	20.0	21.5	7.5	5.0

DCS series

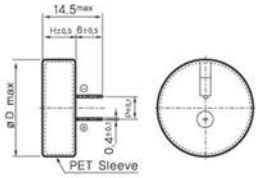
V-TYPE H-TYPE C-TYPE



V-TYPE



H-TYPE

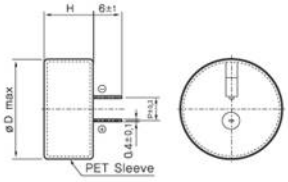


C-TYPE

Part number	Operating voltage (V)	Capacitance (F)	ESR (Ω, @1kHz)	V type(mm)			H type(mm)			C type(mm)		
				ΦD	H	P	ΦD	H	P	ΦD	H	P
DCS 5R5 473	5.5	0.047	≤ 120	11.5	12.5	5.0	11.5	5.5	10.0	13.5	6.5	5.0
DCS 5R5 104		0.10	≤ 75	11.5	12.5	5.0	11.5	5.5	10.0	13.5	6.5	5.0
DCS 5R5 224		0.22	≤ 75	11.5	12.5	5.0	11.5	5.5	10.0	13.5	6.5	5.0
DCS 5R5 334		0.33	≤ 50	11.5	12.5	5.0	11.5	5.5	10.0	13.5	6.5	5.0
DCS 5R5 474		0.47	≤ 50	11.5	12.5	5.0	11.5	5.5	10.0	13.5	6.5	5.0

DCLH / DCLT* series

5.5V 1.0F



Part number	Operating voltage (V)	Capacitance (F)	ESR (Ω, @1kHz)	ΦD×H×P (mm)
DCLH 6R3 474	6.3	0.47	≤ 50	Φ21.5×9.5×5.0
DCLH 6R3 684	6.3	0.68	≤ 50	Φ21.5×9.5×5.0
DCLH 6R3 105	6.3	1.0	≤ 30	Φ21.5×9.5×5.0
DCLT 5R5 474	5.5	0.47	≤ 50	Φ21.5×9.5×5.0
DCLT 5R5 684	5.5	0.68	≤ 50	Φ21.5×9.5×5.0
DCLT 5R5 105	5.5	1.0	≤ 30	Φ21.5×9.5×5.0

* DCLT series is designed for higher temperature applications up to 85℃

ENERGY STORAGE INNOVATOR
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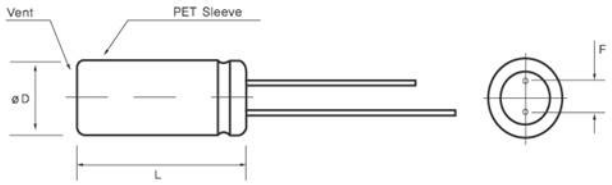
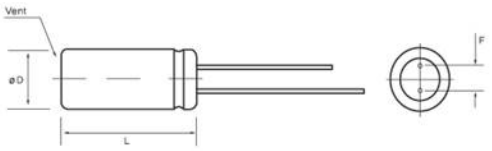
DR / HP series



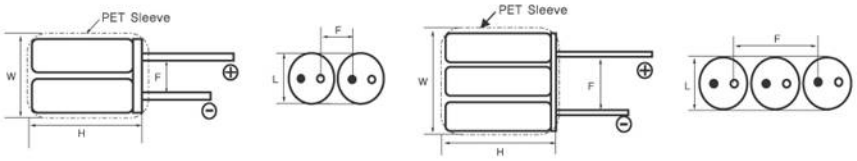
DR Part number	Capacitance (F)	ESR (Ω, @1kHz)	**HP** Part number	Capacitance (F)	ESR (Ω, @1kHz)	Operating voltage (V)	ΦD×L(mm)	F(mm)
DR 2R3 206	20	≤ 0.050				2.3	Φ10×25	5.5
DR 2R3 306	30	≤ 0.035					Φ12.5×25	5.5
DR 2R3 506	50	≤ 0.025					Φ16×25	8.0
DR 2R3 706	70	≤ 0.022					Φ16×35	8.0
DR 2R3 127	120	≤ 0.020					Φ18×40	8.0
DR 2R5 105	1	≤ 0.300				2.5	Φ8×13	4.0
DR 2R5 305	3	≤ 0.150	HP 2R5 155	1.5	≤ 0.100		Φ8×20	4.0
DR 2R5 335	3.3	≤ 0.150					Φ8×20	4.0
DR 2R5 335	3.3	≤ 0.070					Φ12.5×23	5.5
DR 2R5 505	5	≤ 0.120	HP 2R5 205	2	≤ 0.080		Φ8×25	4.0
DR 2R5 705	7	≤ 0.100	HP 2R5 305	3	≤ 0.060		Φ10×20	5.5
DR 2R5 106	10	≤ 0.070	HP 2R5 505	5	≤ 0.050		Φ10×25	5.5
DR 2R5 106	10	≤ 0.070	HP 2R5 605	6	≤ 0.040		Φ12.5×20	5.5
DR 2R5 156	15	≤ 0.050	HP 2R5 106	10	≤ 0.030		Φ12.5×25	5.5
DR 2R5 256	25	≤ 0.030	HP 2R5 156	15	≤ 0.025		Φ16×25	8.0
DR 2R5 356	35	≤ 0.025	HP 2R5 206	20	≤ 0.020		Φ16×35	8.0
DR 2R5 706	70	≤ 0.020	HP 2R5 306	30	≤ 0.015		Φ18×40	8.0
DR 2R7 105	1	≤ 0.200				2.7	Φ8×13	4.0
DR 2R7 305	3	≤ 0.075	HP 2R7 155	1.5	≤ 0.050		Φ8×20	4.0
DR 2R7 335	3.3	≤ 0.075					Φ8×20	4.0
DR 2R7 335	3.3	≤ 0.035					Φ12.5×23	5.5
DR 2R7 505	5	≤ 0.060	HP 2R7 205	2	≤ 0.040		Φ8×25	4.0
DR 2R7 705	7	≤ 0.050	HP 2R7 305	3	≤ 0.035		Φ10×20	5.5
DR 2R7 106	10	≤ 0.035	HP 2R7 505	5	≤ 0.030		Φ10×25	5.5
DR 2R7 106	10	≤ 0.035	HP 2R7 605	6	≤ 0.030		Φ12.5×20	5.5
DR 2R7 156	15	≤ 0.030	HP 2R7 106	10	≤ 0.025		Φ12.5×25	5.5
DR 2R7 256	25	≤ 0.020	HP 2R7 156	15	≤ 0.020		Φ16×25	8.0
DR 2R7 356	35	≤ 0.018	HP 2R7 206	20	≤ 0.018		Φ16×35	8.0
DR 2R7 706	70	≤ 0.016	HP 2R7 306	30	≤ 0.015		Φ18×40	8.0

SR series



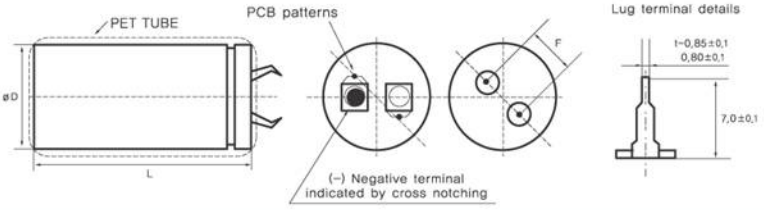
Part number	Operating voltage (V)	Capacitance (F)	ESR (Ω, @1kHz)	ΦD×L(mm)	F(mm)
SR 2R5 154	2.5	0.15	≤ 10	Φ4.0×7.0	1.5
SR 2R5 304		0.30	≤ 2	Φ5.2×12.0	2.0
SR 2R7 154	2.7	0.15	≤ 5	Φ4.0×7.0	1.5
SR 2R7 304		0.30	≤ 1	Φ5.2×12.0	2.0

DRM / HPM series



DRM Part number	Capacitance (F)	ESR (Ω, @1kHz)	**HPM** Part number	Capacitance (F)	ESR (Ω, @1kHz)	Operating voltage(V)	Operating temperature	W×L×H (mm)	F(mm)
DRMH 5R0 504	0.5	≤ 0.600				5.0V	-25~70℃	16.5 X 8.0 X 14.0	4.5/11.8
DRMH 5R0 155	1.5	≤ 0.300	HPMH 5R0 504	0.5	≤ 0.200			16.5 X 8.0 X 21.0	4.5/11.8
DRMH 5R0 255	2.5	≤ 0.240	HPMH 5R0 105	1.0	≤ 0.160			16.5 X 8.0 X 26.0	4.5/11.8
DRMH 5R0 355	3.5	≤ 0.200	HPMH 5R0 155	1.5	≤ 0.120			20.5 X 10.0 X 21.0	5.5
DRMH 5R0 505	5.0	≤ 0.150	HPMH 5R0 205	2.0	≤ 0.100			20.5 X 10.0 X 26.0	5.5
DRMH 5R0 505	5.0	≤ 0.150	HPMH 5R0 305	3.0	≤ 0.080			25.5 X 12.5 X 21.0	7.5
DRMH 5R0 755	7.5	≤ 0.100	HPMH 5R0 355	3.5	≤ 0.060			25.5 X 12.5 X 26.0	7.5
DRML 5R0 504	0.5	≤ 0.400					-40~60℃	16.5 X 8.0 X 14.0	4.5/11.8
DRML 5R0 155	1.5	≤ 0.150	HPML 5R0 504	0.5	≤ 0.100			16.5 X 8.0 X 21.0	4.5/11.8
DRML 5R0 255	2.5	≤ 0.120	HPML 5R0 105	1.0	≤ 0.080			16.5 X 8.0 X 26.0	4.5/11.8
DRML 5R0 355	3.5	≤ 0.100	HPML 5R0 155	1.5	≤ 0.070			20.5 X 10.0 X 21.0	5.5
DRML 5R0 505	5.0	≤ 0.070	HPML 5R0 205	2.0	≤ 0.060			20.5 X 10.0 X 26.0	5.5
DRML 5R0 505	5.0	≤ 0.070	HPML 5R0 305	3.0	≤ 0.060			25.5 X 12.5 X 21.0	7.5
DRML 5R0 755	7.5	≤ 0.060	HPML 5R0 355	3.5	≤ 0.050			25.5 X 12.5 X 26.0	7.5
DRMH 7R5 504	0.5	≤ 0.900				7.5V	-25~70℃	25.0 X 8.0 X 14.0	14.0
DRMH 7R5 105	1.0	≤ 0.450	HPMH 7R5 504	0.5	≤ 0.300			25.0 X 8.0 X 21.0	14.0
DRMH 7R5 155	1.5	≤ 0.360	HPMH 7R5 754	0.75	≤ 0.240			25.0 X 8.0 X 26.0	14.0
DRMH 7R5 205	2.0	≤ 0.300	HPMH 7R5 105	1.0	≤ 0.180			31.0 X 10.0 X 21.0	17.0
DRMH 7R5 305	3.0	≤ 0.250	HPMH 7R5 155	1.5	≤ 0.150			31.0 X 10.0 X 26.0	17.0
DRMH 7R5 305	3.0	≤ 0.250	HPMH 7R5 205	2.0	≤ 0.120			38.5 X 12.5 X 21.0	20.5
DRMH 7R5 505	5.0	≤ 0.150	HPMH 7R5 255	2.5	≤ 0.090			38.5 X 12.5 X 26.0	20.5
DRML 7R5 504	0.5	≤ 0.600					-40~60℃	25.0 X 8.0 X 14.0	14.0
DRML 7R5 105	1.0	≤ 0.225	HPML 7R5 504	0.5	≤ 0.150			25.0 X 8.0 X 21.0	14.0
DRML 7R5 155	1.5	≤ 0.180	HPML 7R5 754	0.75	≤ 0.120			25.0 X 8.0 X 26.0	14.0
DRML 7R5 205	2.0	≤ 0.150	HPML 7R5 105	1.0	≤ 0.100			31.0 X 10.0 X 21.0	17.0
DRML 7R5 305	3.0	≤ 0.100	HPML 7R5 155	1.5	≤ 0.070			31.0 X 10.0 X 26.0	17.0
DRML 7R5 305	3.0	≤ 0.100	HPML 7R5 205	2.0	≤ 0.070			38.5 X 12.5 X 21.0	20.5
DRML 7R5 505	5.0	≤ 0.090	HPML 7R5 255	2.5	≤ 0.060			38.5 X 12.5 X 26.0	20.5

DL series



Part number	Operating voltage (V)	Capacitance (F)	ESR (Ω, @AC 1kHz)	ESR (Ω, DC)	Emax (Wh/kg)	Irated (Amp.)	Φ D x L x F (mm)
DL 2R5 107	2.5	100	≤ 0.018	≤ 0.018	3.72	11	22 x 45 x 10
DL 2R5 207	2.5	200	≤ 0.016	≤ 0.016	3.69	20	25 x 70 x 10
DL 2R5 407	2.5	400	≤ 0.015	≤ 0.015	4.56	30	35 x 60 x 10
DL 2R7 107	2.7	100	≤ 0.014	≤ 0.014	4.82	20	22 x 45 x 10
DL 2R7 207	2.7	200	≤ 0.013	≤ 0.013	4.87	40	25 x 70 x 10
DL 2R7 407	2.7	400	≤ 0.010	≤ 0.010	5.87	50	35 x 60 x 10

ENERGY STORAGE INNOVATOR
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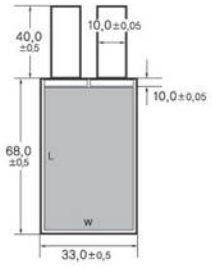
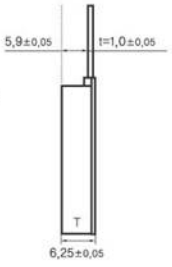
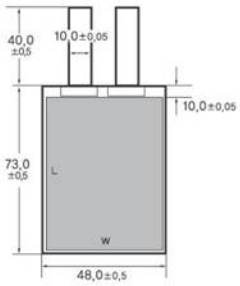
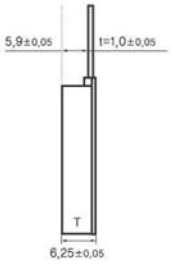
DTL series





DTLS





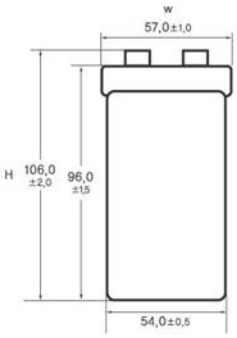
DTLB

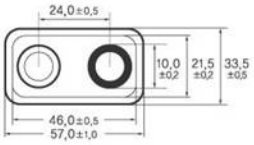
Part number	Operating voltage (V)	Capacitance (F)	ESR		Emax (Wh/kg)	Irated (Amp.)	W x L x T (mm)
			(Ω, @AC 1kHz)	(Ω, DC)			
DTLS 2R5 157	2.5	150	≤ 0.010	≤ 0.010	7.6	20	33 x 68 x 6.25
DTLS 2R7 157	2.7	150	≤ 0.007	≤ 0.007	8.9	25	33 x 68 x 6.25
DTLB 2R5 207	2.5	200	≤ 0.007	≤ 0.007	6.2	30	48 x 73 x 6.25
DTLB 2R7 207	2.7	200	≤ 0.005	≤ 0.005	8.8	40	48 x 73 x 6.25

*Order-base production available for DTL series (Specifications examples below)

Part number	Operating voltage (V)	Capacitance (F)	ESR		W(mm)	L(mm)	T(mm) max.
			(Ω, @AC 1kHz)	(Ω, DC)			
DTLS 2R5 XXX	2.5	75~150	0.010~0.017	0.010~0.017	33	68	6.25
DTLS 2R7 XXX	2.7	75~150	0.007~0.013	0.007~0.013	33	68	6.25
DTLB 2R5 XXX	2.5	100~200	0.007~0.013	0.007~0.013	48	73	6.25
DTLB 2R7 XXX	2.7	100~200	0.005~0.011	0.005~0.011	48	73	6.25

DLM series





Part number	Operating voltage (V)	Capacitance (F)	ESR		Emax (Wh/kg)	Irated (Amp.)	W x L x H (mm)
			(Ω, @AC 1kHz)	(Ω, DC)			
DLM 2R5 907	2.5	900	0.003	0.003	4.7	150	57 x 33.5 x 96
DLM 2R7 907	2.7	900	0.002	0.002	5.5	220	57 x 33.5 x 96

STARCAP Modules

Part number	Operating voltage (V)	Capacitance (F)	ESR (Ω, DC)	Emax (Wh/kg)
MOD 015-656	15	65	0.1	3.4
MOD 015-157	15	150	0.03	3.3
MOD 030-336	30	33	0.2	3.1
MOD 030-756	30	75	0.06	3.4
MOD 050-206	50	20	0.33	2.7
MOD 050-456	50	45	0.1	3.2

General STARCAP Application Matrix

STARCAP (ENERGY STORAGE INNOVATOR)	Memory or RTC Back-up Power	Sub Power with other Power Sources	Main Power
Extra Small Size	Mobile Phone, MP3P, PMP, GPS, Cordless Phone, Digital Camera Digital Photo Frame , PDA	Motor Drive, Pulse Power	Small Motor Drive, Pulse Power
	SM / DM / DMSR Series 2.5V, 2.8V, 3.3V 0.07F~0.47F	SR / DTS Series 2.5V, 2.7V 0.01F~0.3F	SR Series 2.5V, 2.7V 0.15F, 0.3F
Small Size	AV, VCR, DVD Drive, Rice Cooker, Printer, Digital Photo Frame	RF Devices, Gas or Water Meter	Bike Tail Lamp, Flash Lights
	DA / DCS / DCL Series 5.5V 0.022F~1.5F	DCS / DCL / DCLH / DCLT / DP Series 2.6V, 5.5V 0.047F~7.0F	DCS / DCL Series 5.5V 0.047F~1.5F
Medium Size		AMR, RF Devices, Gas or Water Meter, Tax Controller, Car Amplifier, VDSL Modem	Toys, Solar Brick, Road Sign
		DR / DRM / HPM Series 2.5V, 2.7V, 5.0V, 7.5V 0.5F~70F	DR / HP / DRM / HPM Series 2.5V, 2.7V, 5.0V, 7.5V 0.5F~70F
Large Size		Wind Energy, Solar System, Copier, Relay / Solenoid Starter, HEV, EV	Motor Starter, Solar System, EV, UPS, SAG Protector, AVR
		DTL / DL / DLM Series, Modules 2.5V, 2.7V 100F and above	DTL / DL / DLM Series, Modules 2.5V, 2.7V 100F and above

※ **Operation voltages and capacitances may vary in modules.**

※ **This Product Catalog is Released on October 15, 2007**
Specifications may be changed without notification for technical improvement.

ENERGY STORAGE INNOVATOR
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