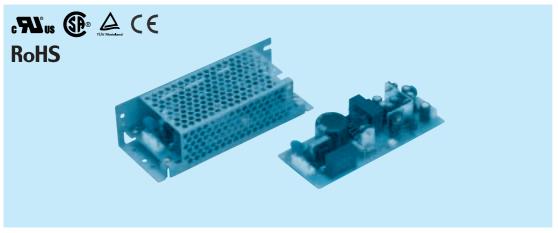
15 F



①Series name ②Multiple output

- ③Output wattage
- 4 Universal input
- ⑤Output voltage combination

  (B) Optional \*4

  C: with Coating

- G :Low leakage current
- S :with Chassis SN:with Chassis & cover Y :with Potentiometer

LDC

MODEL		LDC15F-1	LDC15F-2	
	V1	+5V 2.0(Peak 3.0)A	+5V 2.0(Peak 3.0)A	
DC OUTPUT	V2	+12V 0.3(Peak 0.6)A	+15V 0.3(Peak 0.6)A	
	V3	-12V 0.2(Peak 0.3)A	-15V 0.2(Peak 0.3)A	

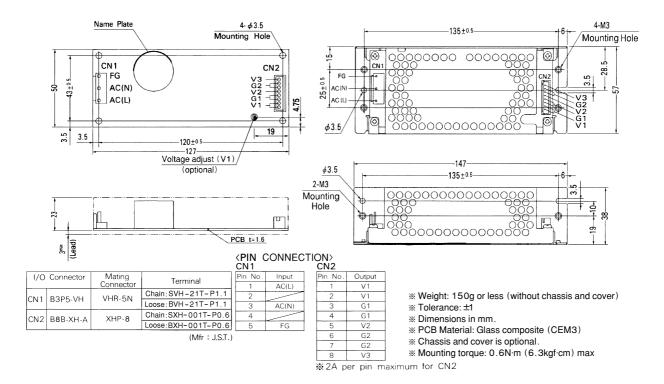
# **SPECIFICATIONS**

	MODEL		LDC15F-1						
	VOLTAGE[V]		AC85 - 264 1 φ or DC110 - 370						
	CURRENT[A] ACIN 100V		0.4typ (lo=100%)						
	FREQUENCY[Hz]		47 - 440 or DC						
INPUT	EFFICIENCY[%]	ACIN 100V	70typ (lo=100%)					_	
			25typ (lo=100%)						
			50typ (lo=100%)						
	LEAKAGE CURREN	T[mA]	0.75max (60Hz, Ad	ccording to UL, CSA	, VDE and DEN-Al	۷)			
	VOLTAGE[V]		+5						
	CURRENT[A]	*1	0 - 2.0 (Peak 3.0)	- 2.0 (Peak 3.0) 0 - 0.3 (Peak 0.6) 0 - 0.2 (Peak 0.3) 0 - 2.0 (Peak 3.0) 0 - 0.3 (Peak 0.6) 0 - 0.2 (Peak					
	LINE REGULATION[	mV]	20max	48max	48max	20max	60max	60max	
	LOAD REGULATION	[mV]	100max	120max	120max	100max	150max	150max	
	RIPPLE[mVp-p]	0 to +50°C *2	100max	120max	120max	100max	120max	120max	
	nirrec[iiivp-p]	-10 - 0℃ *2	140max	160max	160max	140max	160max	160max	
	RIPPLE NOISE[mVp-p]	0 to +50°C *2	120max	150max	150max	120max	150max	150max	
OUTPUT	HIFFEE NOISE[IIIVP-P]	-10 - 0℃ *2	160max	180max	180max	160max	180max	180max	
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	350max	350max	50max	350max	350max	
	TEMPERATURE REGULATION[IIIV]	-10 to +50℃	60max	420max	420max	60max	420max	420max	
	DRIFT[mV] *3		20max			20max			
	START-UP TIME[ms]		100max (ACIN 85V, Io=100%)						
	HOLD-UP TIME[ms]		10typ (ACIN 85V, Io=100%), 20typ (ACIN 100V, Io=100%), 100typ (ACIN 200V, Io=100%)						
	OUTPUT VOLTAGE ADJUSTMENT	FRANGE[V]	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	
	OUTPUT VOLTAGE SET		4.9 to 5.3	11.4 to 12.6	-11.4 to -12.6	4.9 to 5.3	14.25 to 15.75	-14.25 to -15.75	
	OVERCURRENT PROT	ECTION							
PROTECTION	OVERVOLTAGE PROTI		0 7 1 0 7						
	OPERATING INDICA	TION	Not provided						
OTHERS	REMOTE SENSING		Not provided						
	REMOTE ON/OFF		Not provided						
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)						
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)						
	OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)						
	OUTPUT-OUTPUT(V1-V2,V3)								
ENVIRONMENT			-10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet)						
	STORAGE TEMP.,HUMID.AND ALTITUDE		\$ 10 ft 10 f						
	VIBRATION		10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis  196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis						
	IMPACT	_							
SAFETY AND NOISE	AGENCY APPROVAL	_S				-1 Complies with DE	N-AN and IEC6095	50-1	
REGULATIONS	CONDUCTED NOISE			C-B, CISPR22-B, El					
OTHERS	CASE SIZE/WEIGHT			W × H × D) /150g m	ax (without chassis	and cover)			
	COOLING METHOD		Convection						

- Peak load for 10sec. or less is acceptable if the total wattage is less than the rated wattage(-1: 16W, -2: 17.5W). When the load of +5V is OA, other output can be drawn by 80% of rated current. Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN:RM101).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C with the input voltage held constant at the rated input/output.
- Please contact us about safety approvals for the model with option. Avoid prolonged use under over-load.
- Derating is required when operated with chassis and cover.

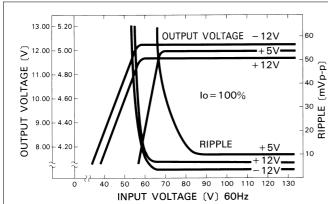


# **External view**

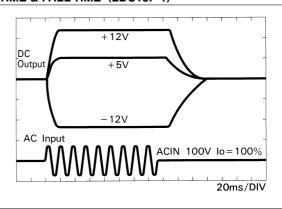


#### Performance data

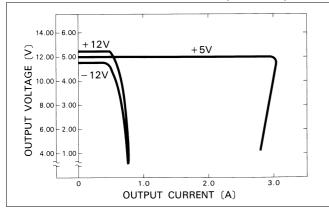
#### ■STATIC CHARACTERISTICS (LDC15F-1)



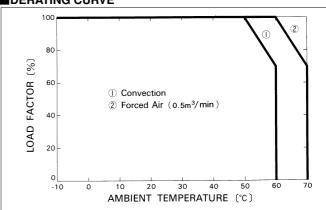
# ■RISETIME & FALLTIME (LDC15F-1)

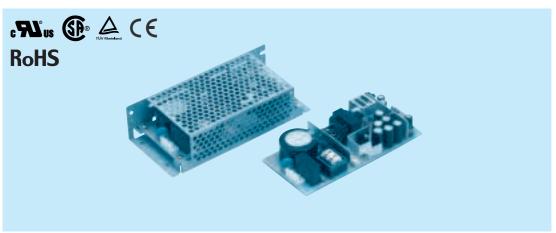


# **■**OVERCURRENT CHARACTERISTICS (LDC15F-1)



#### **DERATING CURVE**





- ①Series name ②Multiple output
- ③Output wattage 4 Universal input
- ⑤Output voltage combination
- Optional \*4
   C :with Coating
- G :Low leakage current
- S :with Chassis SN:with Chassis & cover Y :with Potentiometer

LDC

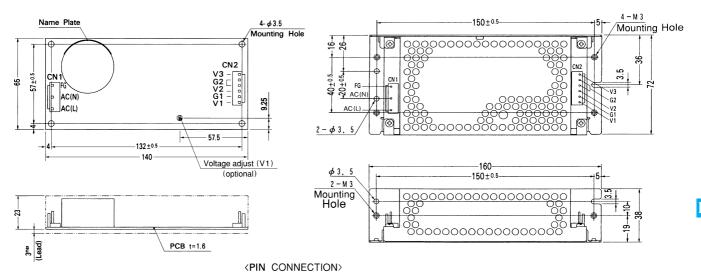
MODEL		LDC30F-1	LDC30F-2	
	V1	+5V 3.0(Peak 4.5)A	+5V 3.0(Peak 4.5)A	
DC OUTPUT	V2	+12V 1.2(Peak 2.0)A	+15V 1.0(Peak 2.0)A	
	V3	-12V 0.3(Peak 0.45)A	-15V 0.3(Peak 0.45)A	

# **SPECIFICATIONS**

LINE REGULATION[mV]   20max   48max   48max   20max   60max   60max   60max   120max   150max   120max   150max   120max   150max   120max   150max   120max   120		MODEL		LDC30F-1	DC30F-1 LDC30F-2					
INPUT		VOLTAGE[V]		AC85 - 264 1 φ or	· · · · · · · · · · · · · · · · · · ·					
INPUT		CURRENT[A] ACIN 100V		0.8typ (lo=100%)						
INRUSH CURRENT[A]   ACIN 100V   25typ (10=100%) (At cold start)		FREQUENCY[Hz]		47 - 440 or DC						
NATUSH CURRENT[A]   ACN 200V   50typ (10=100%) (At cold start)	INPUT	EFFICIENCY[%]	ACIN 100V	72typ (lo=100%)						
LEAKAGE CURRENT[ma]   0.75max (60Hz. According to UL. CSA. VDE and DEN-AN)		INRUSH CURRENT[A]		21 -						
VOLTAGE[V]				50typ (Io=100%) (At cold start)						
CURRENT[A]		LEAKAGE CURREN	T[mA]	0.75max (60Hz, Ad	cording to UL, CSA	A, VDE and DEN-AN	N)			
LINE REGULATION[mV]   20max   48max   48max   20max   60max   60max   60max		VOLTAGE[V]		+5	7.2					
COAD REGULATION[mV]   100max   120max   150max   100max   120max   120ma		CURRENT[A]	*1	0 - 3.0 (Peak 4.5)	3.0 (Peak 4.5) 0 - 1.2 (Peak 2.0) 0 - 0.3 (Peak 0.45) 0 - 3.0 (Peak 4.5) 0 - 1.0 (Peak 2.0) 0 - 0.3 (Peak 0.45)					
OUTPUT   RIPPLE(mVp-p)		LINE REGULATION[	mV]	20max	48max	48max	20max	60max	60max	
OUTPUT   RIPPLE NOISE[mVp-p]		LOAD REGULATION	[mV]	100max	120max	150max	100max	120max	150max	
OUTPUT   RIPPLE NOISE[mVp-p]		DIDDI E[mVn_n]	0 to +50°C *2	100max	120max	120max	100max	120max	120max	
OUTPUT   RIPPLE NOISE[mVp-p]   -10 - 00 ** 2 170max   180max   180max   170max   180max   180max   180max   350max   420max		nirrec[iiivp-p]	-10 - 0℃ *2	150max	160max	160max	150max	160max	160max	
TEMPERATURE REGULATION[mV]   0 to +50°C   50max   350max   350max   350max   350max   350max   350max   350max   350max   420max   420m		DIDDI E NOISEIMVa.ni	0 to +50°C *2	120max	150max	150max	120max	150max	150max	
TEMPERATURE REGULATION MV    -10 to +50°C   60 max   420 max	OUTPUT	HIFFEE NOISE[IIIVP-P]	-10 - 0℃ *2	170max	180max	180max	170max	180max	180max	
DRIFT[INV]   \$\sigma   20max   420max   420ma		TEMPEDATURE DECILI ATIONIMIZA	0 to +50℃	50max	350max	350max	50max	350max	350max	
START-UP TIME[ms]   100max (ACIN 85V, Io=100%)     HOLD-UP TIME[ms]   10typ (ACIN 85V, Io=100%), 20typ (ACIN 100V, Io=100%), 10typ (ACIN 200V, Io=100%)     00tput voltage adjustment rance[v]   Fixed   Fi		TEMPERATURE REGULATION[IIIV]	-10 to +50℃	60max	420max	420max	60max	420max	420max	
HOLD-UP TIME[ms]   10typ (ACIN 85V, Io=100%), 20typ (ACIN 100V, Io=100%), 100typ (ACIN 200V, Io=100%)		DRIFT[mV] *3		20max			20max			
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]   Fixed   Fixed   Fixed   Fixed   Fixed   Fixed   OUTPUT VOLTAGE SETTING[V]   4.9 to 5.3   11.4 to 12.6   -11.4 to -12.6   4.9 to 5.3   14.25 to 15.75   -14.25 to -15.		START-UP TIME[ms]		100max (ACIN 85V, Io=100%)						
OUTPUT VOLTAGE SETTING[V] 4.9 to 5.3 11.4 to 12.6 -11.4 to -12.6 4.9 to 5.3 14.25 to 15.75 -14.25 to -15.  OVERCURRENT PROTECTION Works over 105% of rating and recovers automatically  OVERVOLTAGE PROTECTION Works at 115 - 140% of rating (+5V only)  OPERATING INDICATION Not provided  REMOTE SENSING Not provided  REMOTE ON/OFF Not provided  INPUT-OUTPUT AC3.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)  INPUT-FG AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)  OUTPUT-OUTPUT(V1-V2,V3) AC100V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)  OPERATING TEMP.HUMID.AND ALTITUDE -20 to +75°C, 20 - 90%RH (Non condensing), 9.000m (30.000(feet))										
OVERCURRENT PROTECTION   Works over 105% of rating and recovers automatically		OUTPUT VOLTAGE ADJUSTMENT	range[v]				1			
PROTECTION   OVERVOLTAGE PROTECTION   Works at 115 - 140% of rating (+5V only)							4.9 to 5.3	14.25 to 15.75	-14.25 to -15.75	
Color of the co										
REMOTE SENSING   Not provided	PROTECTION	OVERVOLTAGE PROTI	ECTION		<u> </u>					
REMOTE ON/OFF   Not provided		OPERATING INDICA	TION							
INPUT-OUTPUT  AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)  INPUT-FG  AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)  OUTPUT-FG  AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)  OUTPUT-OUTPUT(V1-V2,V3)  AC100V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)  OPERATING TEMP.HUMID.AND ALTITUDE  -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet)  STORAGE TEMP.HUMID.AND ALTITUDE  -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet)	OTHERS	REMOTE SENSING								
INPUT-FG   AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)										
OUTPUT-FG  OUTPUT-OUTPUT(V1-V2,V3)  AC100V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)  OUTPUT-OUTPUT(V1-V2,V3)  AC100V 1minute, Cutoff current = 100mA, DC100V 10MΩ min (At Room Temperature)  OPERATING TEMP.HUMID.AND ALTITUDE  -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet)  STORAGE TEMP.HUMID.AND ALTITUDE  -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet)										
OUTPUT-FG  AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)  OUTPUT-OUTPUT(V1-V2,V3)  AC100V 1minute, Cutoff current = 100mA, DC100V 10MΩ min (At Room Temperature)  OPERATING TEMP.HUMID.AND ALTITUDE  -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet)  STORAGE TEMP.HUMID.AND ALTITUDE  -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet)	ISOLATION									
OPERATING TEMP.HUMID.AND ALTITUDE -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet)										
STORAGE TEMP. HUMID AND ALTITUDE -20 to +75°C, 20 - 90°RH (Non condensing), 9,000 m (30,000 feet)										
STORAGE TEMP.HUMD.AND ALTITUDE 1-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet)										
ENVIRONMENT		STORAGE TEMP.,HUMID.AND ALTITUDE		The state of the s						
VIBRATION 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis		VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis						
				196.1m/s² (20G), 11ms, once each X, Y and Z axis						
SAFETY AND NOISE UL60950-1, EN60950-1, EN50178, CSA C22.2 No.60950-1 Complies with DEN-AN and IEC60950-1	NOISE						-1 Complies with DE	EN-AN and IEC6095	50-1	
REGULATIONS   CONDUCTED NOISE   Complies with FCC-B, CISPR22-B, EN55022-B, VCCI-B	REGULATIONS									
OTHERS CASE SIZE/WEIGHT 65 x 26 x 140mm (W x H x D) / 220g max (without chassis and cover)	OTHERS				W×H×D) / 220g n	nax (without chassis	and cover)			
COOLING METHOD Convection		COOLING METHOD		Convection						

- Peak load for 10sec. or less is acceptable if the total wattage is less than the rated wattage(-1: 33W, -2: 34.5W). When the load of +5V is OA, other output can be drawn by 80% of rated current. Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN:RM101).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C with the input voltage held constant at the rated input/output.
- Please contact us about safety approvals for the model with option. Avoid prolonged use under over-load.
- Derating is required when operated with chassis and cover.

# **External view**



1/0	Connector	Mating Connector	Terminal	
CN1 CN2	B3P5-VH	VHR-5N	Chain: SVH - 21T - P1.1	
	D3F2-VII	VIIII-SIN	Loose: BVH-21T-P1.1	
	B6P-VH	VHR-6N	Chain:SVH-21T-P1.1	
	DOI - VII	VIIII-OIV	Loose:BVH-21T-P1.1	

(Mfr : J.S.T.)

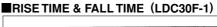
CN1	
Pin No.	Input
1	AC(L)
2	
3	AC(N)
4	
5	FG

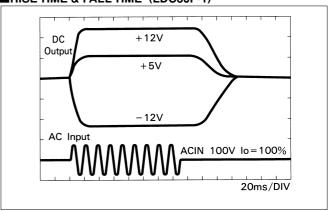
- CN2 Pin No. Output V3 G2 3 G2 4 V2 5 G1 6 V1
- \* Weight: 220g or less (without chassis and cover)
- \* Tolerance: ±1
- \* Dimensions in mm.
- PCB Material: Glass composite (CEM3)
- \* Chassis and cover is optional.
- \* Mounting torque: 0.6N·m (6.3kgf·cm) max

#### Performance data

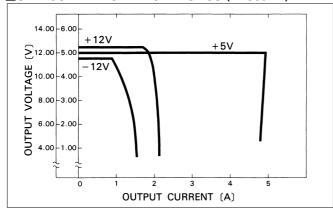
#### ■STATIC CHARACTERISTICS (LDC30F-1) 13.00 - 5.20 OUTPUT VOLTAGE - 12V **∑**12.00 - 5.00 +5V= +12V (d-d/m) VOLTAGE 40 lo = 100%30 4.60 щ 20 H OUTPUT 9.00 4 40 RIPPLE +5V 10 8.00 4.20 + 12V= - 12V 50 60 70 80 90 100 110 120 130

INPUT VOLTAGE (V) 60Hz

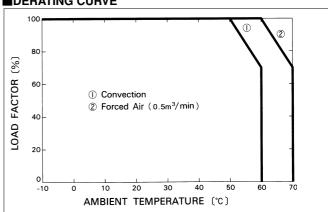


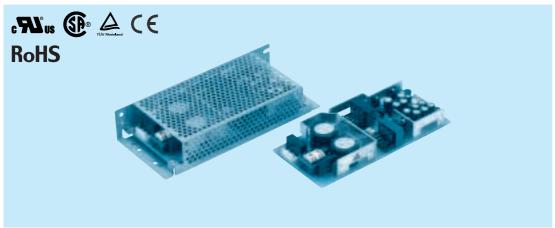


## **■**OVERCURRENT CHARACTERISTICS (LDC30F-1)



## **DERATING CURVE**





- ①Series name ②Multiple output
- ③Output wattage
- 4 Universal input ⑤Output voltage combina-
- tion

  (B) Optional \*4

  C: with Coating

- G :Low leakage current
- S :with Chassis SN:with Chassis & cover Y :with Potentiometer

LDC

MODEL		LDC60F-1	LDC60F-2	
	V1	+5V 5.0(Peak 7.0)A	+5V 5.0(Peak 7.0)A	
DC OUTPUT	V2	+12V 2.5(Peak 3.5)A	+15V 2.0(Peak 3.5)A	
	V3	-12V 0.5(Peak 0.7)A	-15V 0.5(Peak 0.7)A	

# **SPECIFICATIONS**

	MODEL		LDC60F-1	.DC60F-1 LDC60F-2					
	VOLTAGE[V]		AC85 - 264 1 φ or	DC110 - 370		"			
	CURRENT[A]	ACIN 100V	1.4typ (lo=100%)						
	FREQUENCY[Hz]		47 - 440 or DC						
INPUT	EFFICIENCY[%]	ACIN 100V	72typ (lo=100%)	2typ (Io=100%)					
	ACIN 100V		// 30typ (lo=100%) (At cold start)						
	INRUSH CURRENT[A]	ACIN 200V	60typ (Io=100%) (At cold start)						
	LEAKAGE CURREN	T[mA]	0.75max (60Hz, Ad	cording to UL, CSA	A, VDE and DEN-AN	۷)			
	VOLTAGE[V]		+5	+12	-12	+5	+15	-15	
	CURRENT[A]	*1	0 - 5.0 (Peak 7.0)	0 - 2.5 (Peak 3.5)	0 - 0.5 (Peak 0.7)	0 - 5.0 (Peak 7.0)	0 - 2.0 (Peak 3.5)	0 - 0.5 (Peak 0.7)	
	LINE REGULATION[	mV]	20max	48max	48max	20max	60max	60max	
	LOAD REGULATION	[mV]	100max	150max	150max	100max	150max	150max	
	RIPPLE[mVp-p]	0 to +50°C *2	100max	120max	120max	100max	120max	120max	
	nieereliiivb-bi	-10 - 0℃ *2	150max	160max	160max	150max	160max	160max	
	RIPPLE NOISE[mVp-p]	0 to +50°C *2	120max	150max	150max	120max	150max	150max	
OUTPUT	RIPPLE NOISE[IIIVP-P]	-10 - 0℃ *2	170max	180max	180max	170max	180max	180max	
	TEMPEDATURE RECUI ATION()/I	0 to +50℃	50max	350max	350max	50max	350max	350max	
	TEMPERATURE REGULATION[mV]	-10 to +50℃	60max	420max	420max	60max	420max	420max	
	DRIFT[mV] *		20max			20max			
	START-UP TIME[ms]		200max (ACIN 85V, Io=100%)						
	HOLD-UP TIME[ms]		10typ (ACIN 85V, Io=100%), 20typ (ACIN 100V, Io=100%), 100typ (ACIN 200V, Io=100%)						
	OUTPUT VOLTAGE ADJUSTMEN	T RANGE[V]	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	
	OUTPUT VOLTAGE SET	TTING[V]	4.9 to 5.3	11.4 to 12.6	-11.4 to -12.6	4.9 to 5.3	14.25 to 15.75	-14.25 to -15.75	
	DVERCURRENT PROTECTION Works over 105% of rating and recovers automatically								
PROTECTION	OVERVOLTAGE PROT	ECTION	Works over 115% of rating by zener diode clamping (only available with V1, V2)						
CIRCUIT AND	OPERATING INDICATION		Not provided						
OTHERS	REMOTE SENSING		Not provided						
	REMOTE ON/OFF		Not provided						
	<b>INPUT-OUTPUT</b> AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)								
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)						
	OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)						
	OUTPUT-OUTPUT(V1-V2,V3)								
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		3, t						
	STORAGE TEMP.,HUMID.AND ALTITUDE		3,7						
ENVINONMENT	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis						
	IMPACT		196.1m/s <sup>2</sup> (20G), 1	1ms, once each X,	Y and Z axis				
SAFETY AND NOISE	AGENCY APPROVA	LS	UL60950-1, EN609	950-1, EN50178, CS	SA C22.2 No.60950	-1 Complies with DE	EN-AN and IEC6095	50-1	
REGULATIONS	CONDUCTED NOISE			C-B, CISPR22-B, EN					
OTHERS	CASE SIZE/WEIGHT		83 × 26 × 185mm (	W×H×D) / 300g m	nax (without chassis	and cover)			
UITERS	COOLING METHOD		Convection						

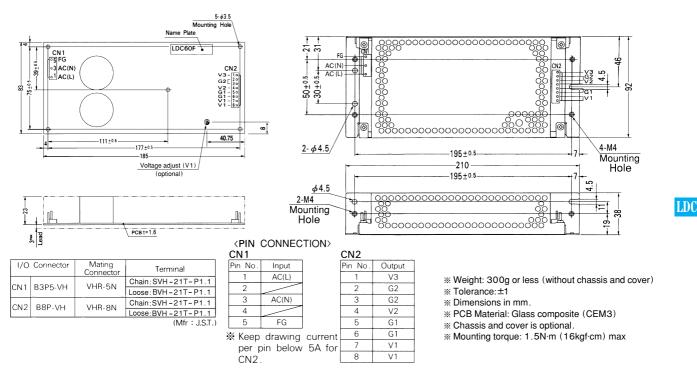
- Peak load for 10sec. or less is acceptable if the total wattage is less than the rated wattage(-1: 61W, -2: 62.5W). When the load of +5V is OA, other output can be drawn by 80% of rated current. Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN:RM101).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C with the input voltage held constant at the rated input/output.
- Please contact us about safety approvals for the model with option.

  Avoid prolonged use under over-load.

  Derating is required when operated with chassis and cover.

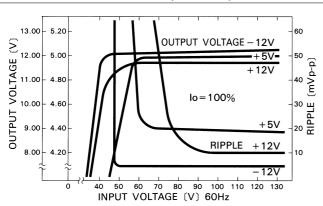


# **External view**

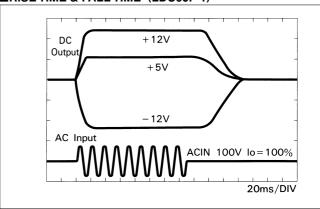


#### Performance data

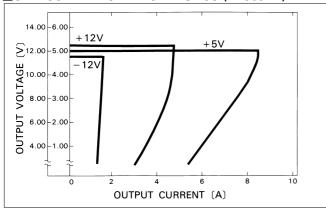
#### ■STATIC CHARACTERISTICS (LDC60F-1)



# ■RISETIME & FALLTIME (LDC60F-1)



## **■OVERCURRENT CHARACTERISTICS (LDC60F-1)**



#### **DERATING CURVE**

