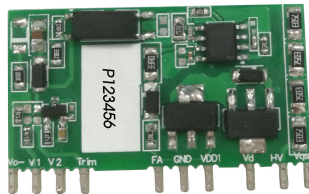
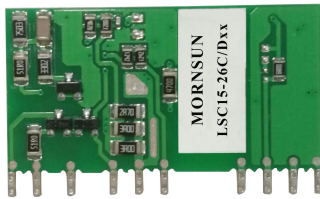


Three phase four wire special power supply core board scheme



CORE BOARD FEATURES

- Integrate 2 MOSFET inside, withstand voltage up to 1300V
- Integrate dedicated high-voltage start controller
- Controllable cost, flexibly select peripheral devices
- Flexible design, meet multiple output requirements
- Quality assurance, provide core control scheme, to improve product stability

SCHEME PRODUCT FEATURES

- Ultra wide input voltage range: 57 - 528VAC/80 - 745VDC
- Circuit can be powered by three-phase four-wire, or any two wires of them
- CE /RE: CISPR32/EN55032 CLASS B
- EFT, Surge: ±4KV Perf. Criteria B
- Output short circuit, over-current, over-voltage protection
- High efficiency, High reliability
- Low ripple & noise, Low standby power consumption

LSC15-26C/Dxx series —Ultra wide input voltage core board solution for electric power, provide the specific peripheral circuit for power supply design. It features ultra wide input voltage, output short circuit, over-current, over voltage protection, high efficiency and high reliability. It is particularly suitable for the electric power, industry control, smart home. EMC application circuit must be added if the products need to be applied to EMC harsh environment .

Selection Guide

Part No.	Output Power	Nominal Output Voltage and Current			Efficiency (230VAC, %/Typ.)	Max. Capacitive Load(μF)		
		(Vo1/Io1)	(Vo2/Io2)	(Vo3/Io3)		Vo1	Vo2	Vo3
LSC15-26C0512-04	14.6W	5VDC/1A	12VDC/0.4A	12VDC/0.4A	78	4000	1200	1200
LSC15-26D1212-03	15W	12VDC/0.95A	12VDC/0.3A	--		3000	1200	--
LSC15-26D0512-04		5VDC/1.8A	12VDC/0.4A	--		4000	1200	--
LSC15-26D0524-02		5VDC/1.8A	12VDC/0.25A	--		4000	600	--

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	57	--	528	VAC
	DC input	80	--	745	VDC
Input frequency		47	--	63	Hz
Input current	115VAC	--	--	0.5	A
	230VAC	--	--	0.23	
Inrush current	115VAC	--	25	--	
	230VAC	--	40	--	
Recommended External Input Fuse		3.15A/500VAC, slow fusing, necessary			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	balanced load	Primary output (Vo1)	--	±2	--	%
		Secondary output (Vo2/Vo3)	--	±4	--	
Line Regulation	Full load	Primary output (Vo1)	--	±0.5	--	
		Secondary output (Vo2/Vo3)	--	±1.5	--	
Load Regulation	10%-100% load	Primary output (Vo1)	--	±2	--	
		Secondary output (Vo2/Vo3)	--	±5	--	
Ripple & Noise*	20MHz bandwidth (peak-peak value)	Primary output (Vo1)	--	--	120	mV
		Secondary output (Vo2/Vo3)	--	--	200	
Temperature Coefficient	Primary output (Vo1)		--	±0.02	--	%/°C
	Secondary output (Vo2/Vo3)		--	±0.06	--	
Stand-by Power Consumption	230VAC		--	0.5	--	W
Short Circuit Protection			Hiccup, Continuous, self-recovery			
Over-current Protection **			130 - 350% Io self-recovery			
Over-voltage Protection	5V output		≤7.5V(Output voltage clamp)			
	12V output		≤20V(Output voltage clamp)			
	24V output		≤30V(Output voltage clamp)			
Min. Load			10	--	--	%
Hold-up Time	230VAC input, Io=100%		--	50	--	ms

Note* Ripple and noise are measured by "parallel cable" method, please see AC-DC Converter Application Notes for specific operation.
 **LSC15-26C0512-04 when the second output connect BUCK circuit, calculating according to overpower protection, after overcurrent protection of BUCK circuit.

General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output	Test time: 1min	4000	--	--	VAC
	output - output		4000	--	--	
Operating Temperature			-40	--	+70	°C
Storage Temperature			-40	--	+85	
Storage Humidity			--	--	95	%RH
Altitude			--	--	2000	m
Welding Temperature	Wave-soldering		260 ± 5°C; time: 5 - 10s			
	Manual-welding		360 ± 10°C; time: 3 - 5s			
Switching frequency			--	65	--	kHz
Power Derating	-40°C to -20°C		2.00	--	--	%/°C
	+55°C to +70°C		3.00	--	--	
	57VAC - 110VAC		1.13	--	--	%/VAC
	480VAC - 528VAC		0.83	--	--	
Safety Class			CLASS II			
MTBF			MIL-HDBK-217F@25°C ≥300,000 h			

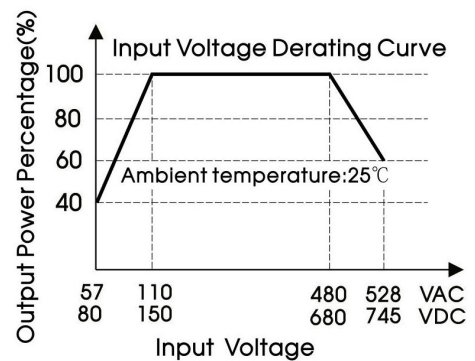
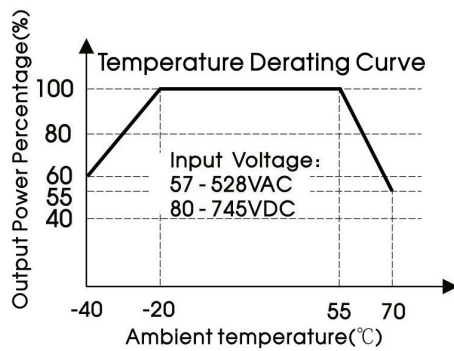
Physical Specifications

Dimension	37.00*20.00*4.60 mm
Weight	2.3g (Typ.)
Cooling method	Free air convection

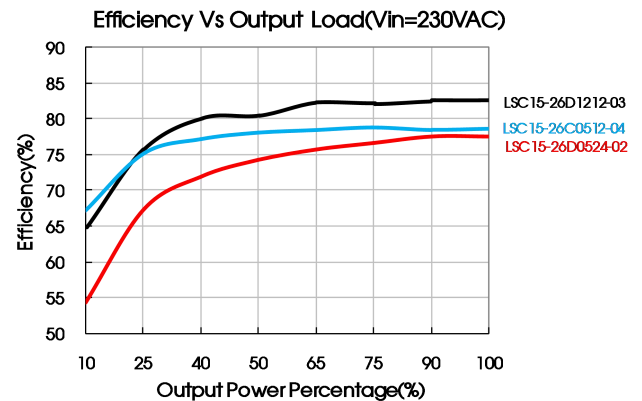
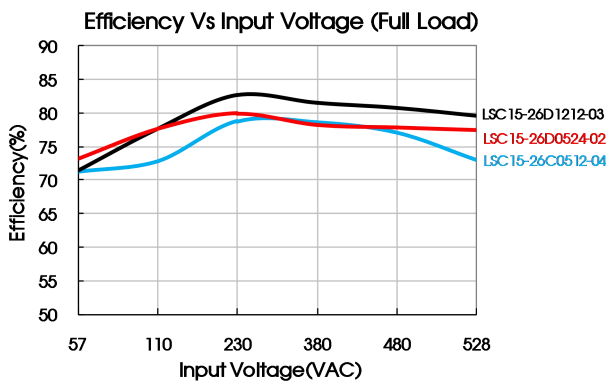
EMC Specifications

EMI	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
EMS	ESD	IEC/EN61000-4-2	Contact±8KV	Perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	perf. Criteria B
	Surge	IEC/EN61000-4-5	line to line±2KV	perf. Criteria B
		IEC/EN61000-4-5	line to line±4KV (See Fig. 3 or Fig. 4 for recommended circuit)	perf. Criteria B
	CS	IEC/EN61000-4-6	10Vr.m.s	perf. Criteria A
Voltage dips, short interruptions and voltage variations		IEC/EN61000-4-11	0%,70%	perf. Criteria B

Product Characteristic Curve

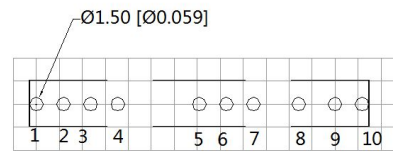
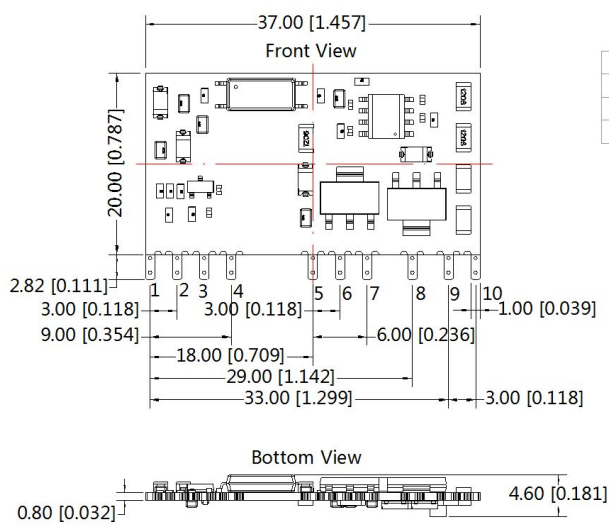


注: ①When input 57-110VAC/480-528VAC/80-150VDC/680-745VDC, it need to be voltage derated on basis of temperature derating;
②This product is suitable for use in natural air cooling environments, if in a closed environment, please contact our company's FAE.



Core board dimensions and Pin definition

THIRD ANGLE PROJECTION 



Note : Grid: 2.54*2.54mm

Pin-Out	
Pin	Funtion
1	Vo-
2	V1
3	V2
4	Trim
5	FA
6	GND
7	VDD1
8	Vd
9	HV
10	Vgs

Note :
Unit: mm[inch]
Pin diameter tolerances: $\pm 0.10[\pm 0.004]$
General tolerances: $\pm 0.50[\pm 0.020]$
The layout of the device is for reference only ,
please refer to the actual product

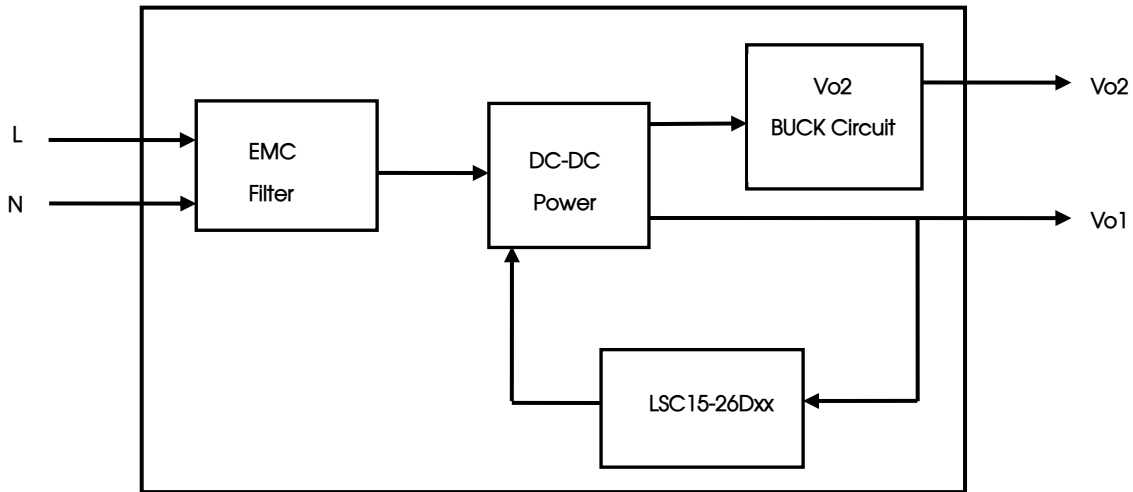
Core board pin function description

Pin	Pin Name	Function	Describe
1	Vo-	Secondary Side	Secondary Side GND
2	V1	Output Sampling	Output feedback sampling pin
3	V2	Input Feedback	Optocoupler and 431 power supply pin
4	Trim	Trim	Output voltage adjustable
5	FA	Input Voltage Detection	To provide voltage and timing feedback to the controller. The pin is connected to a voltage divider between an auxiliary winding and GND. The upper resistance value of the voltage divider can be used to adjust the line voltage compensation strength of the power supply, the ratio of upper and lower resistors can be used to adjust the output voltage stability.
6	GND	Primary Side	Primary Side GND
7	VDD1	VCC	Provide power to Chip terminal from the by-pass capacitor
8	Vd	Drain terminal	Drain terminal of power MOSFET
9	HV	High Voltage Input	High voltage input terminal, provide power to VDD shunt capacitor to start the controller, from the input voltage
10	Vgs	High Voltage Midpoint	Midpoint of the input capacitor voltage, to provides a reference voltage for the module

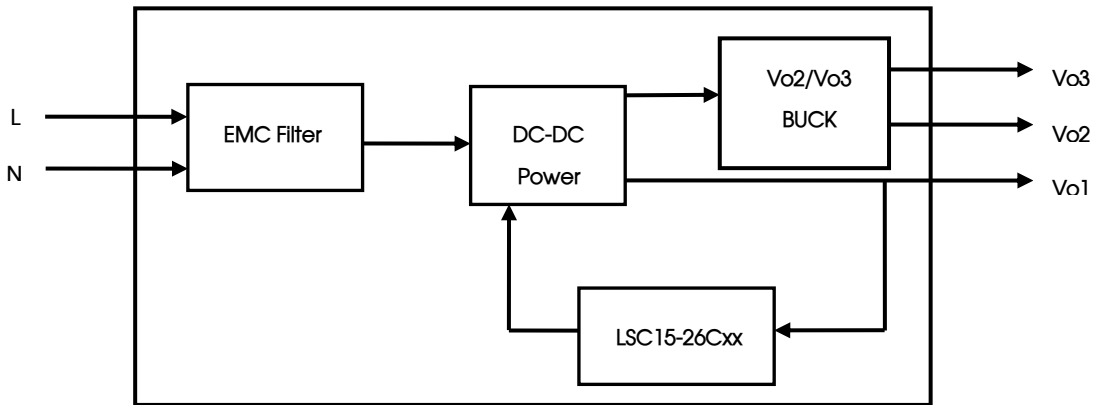
Electrical characteristic parameters

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Chip power supply terminal (VDD1)						
Offset power vol	VDD1	--	--	--	25	V
VDD1 shunt cap	--	--	--	--	20	uF
VUVLO_ON	VDD UVLO cancel (ON)	VDD low-to-high	--	16.1	--	V
VUVLO_OFF	VDD UVLO	VDD high-to-low	--	7.4	--	
VOVP_ON	VDD OVP trigger voltage	VDD 15V-to-21V	--	24.2	--	
VOVP_OFF	VDD OVP recovery voltage	VDD 21V-to-10V	--	16.1	--	
VOVP_Hys	VDD OVP backlash voltage		--	8.1	--	
VClamp	VDD clamp voltage	VDD current increases	--	35	40	
ISTL	VDD low limit charging current	VIN=40, VDD=0V	250	400	550	uA
ISTH	VDD high limit charging current	VIN=40, VDD=3.5V	0.8	2.5	4	mA
IVIN(OFF)	VIN shut off current	VIN=40,VDD=22V, delay 88ms	--	--	5	uA
IVDD	Operating current	IVIN=0,VDD=10V	40	--	150	uA
VCM	Limited charge voltage	CVDD=47nF	--	22	--	V
VDD (start)	Oscillator starting voltage		--	4.3	--	V
VDD (reset)	Startup circuit reset voltage		--	3.1	--	V
TOSC	Oscillator oscillating period	VDD=4.3V	--	22	--	us
		VDD=18V	--	3.1	--	
		VDD=22V	--	1.5	--	
TCH	High voltage power supply duration		--	49152	--	TOSC
IUVIN_ON	Input under voltage trigger current	RI=24K	--	167	--	uA
TUVIN1	Input under voltage protection trigger voltage retention time, startup	After trigger OVP	--	3	--	Pulses
TUVIN2	Input undervoltage protection trigger voltage retention time, working		--	2 ¹¹	--	Pulses
Analog signal basic reference (Vgs)						
Vgs	Analog signal basic reference		20	--	--	V
Startup circuit input terminal (HV)						
V _{HV}			85	--	745	V
Drain voltage (Vd)						
Vd	Drain voltage		--	--	1300	V
Output voltage fine adjust pin						
Trim	Output voltage fine adjust pin		--	2.5	--	V

Power design scheme diagram

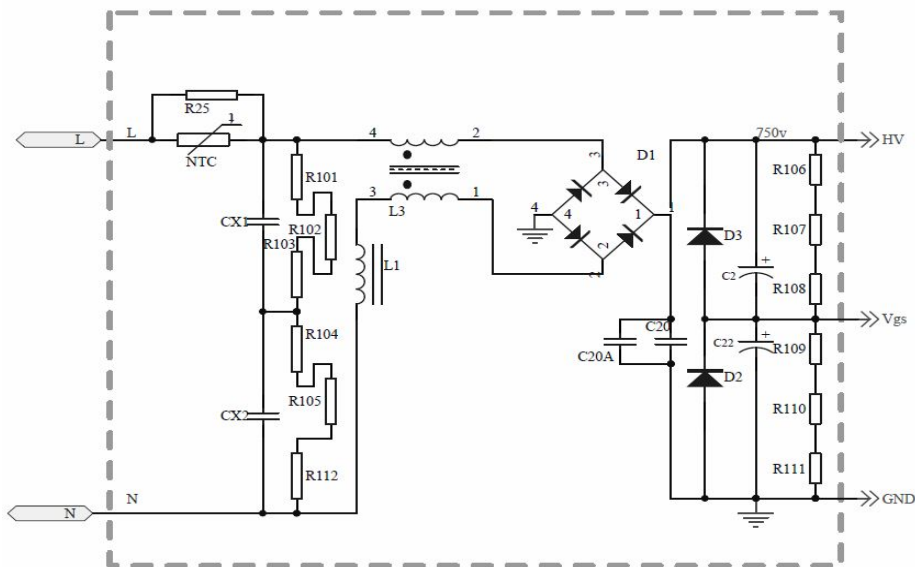


LSC15-26Dxx design diagram

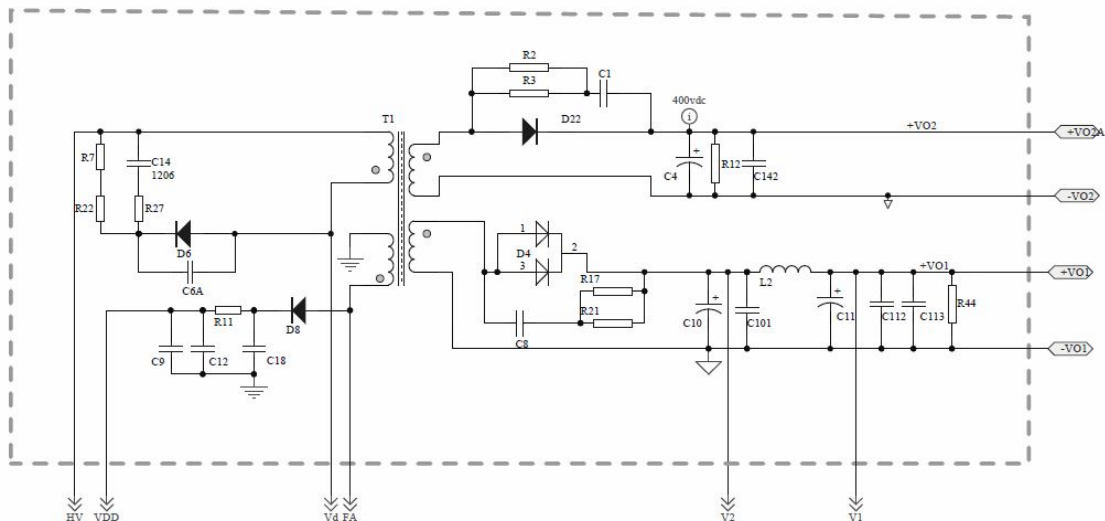


LSC15-26Cxx design diagram

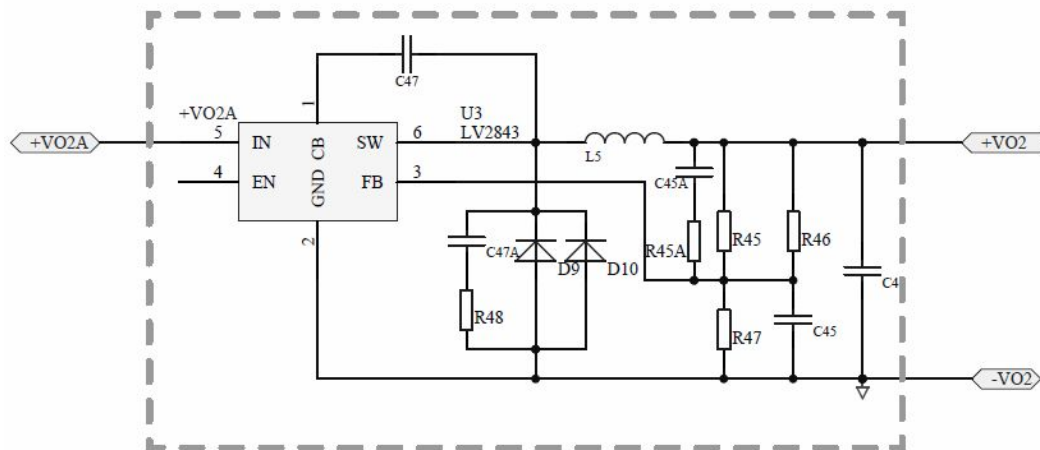
LSC15-26Dxx(Isolated double path) series power design scheme



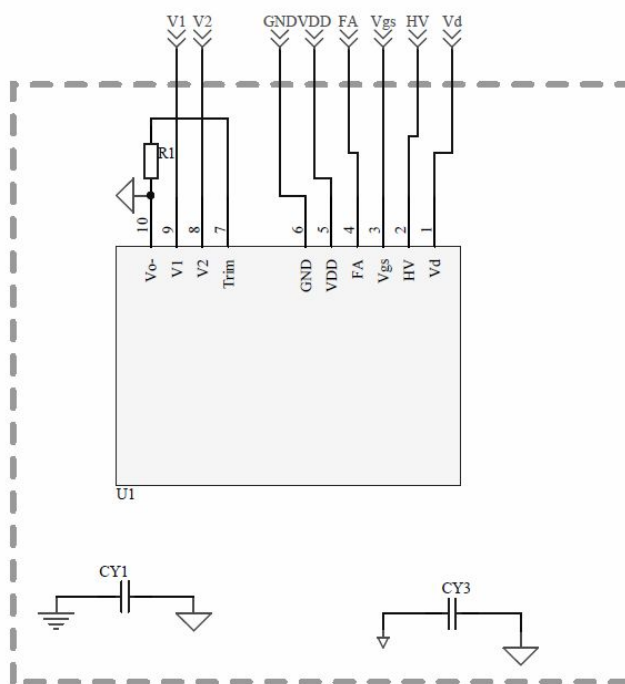
EMC rectifier filtering



DC-DC main board part

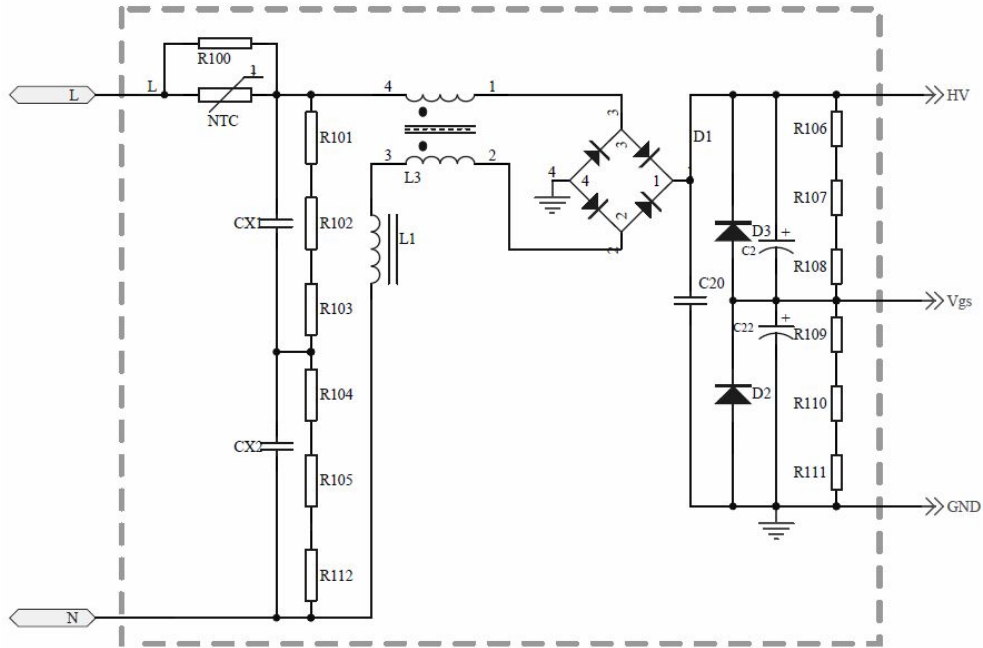


Output Vo2 Buck circuit

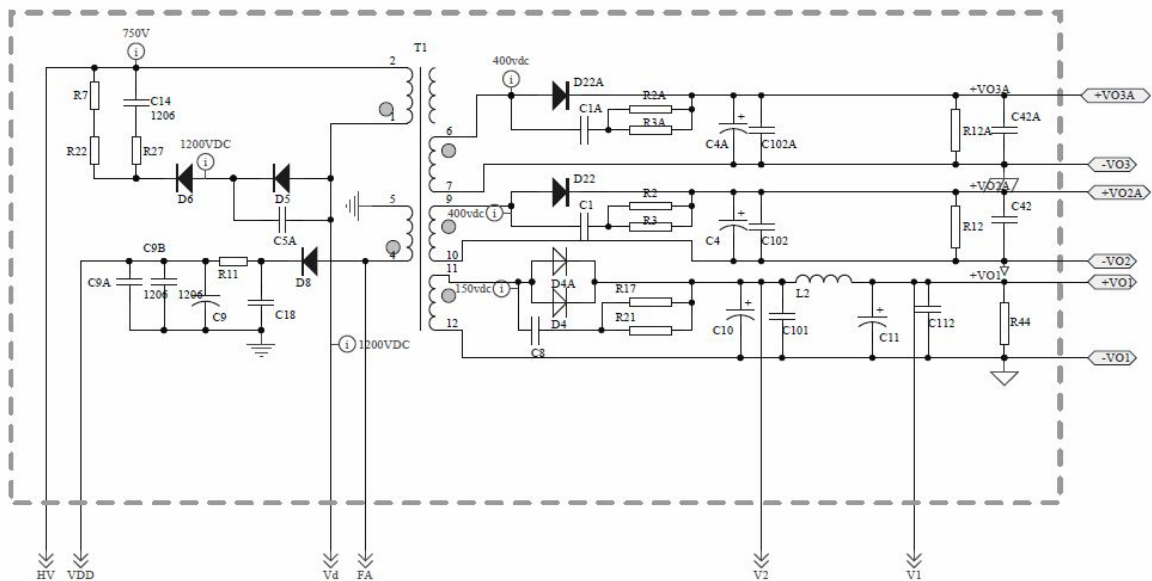


LSC15-26Dxx core board

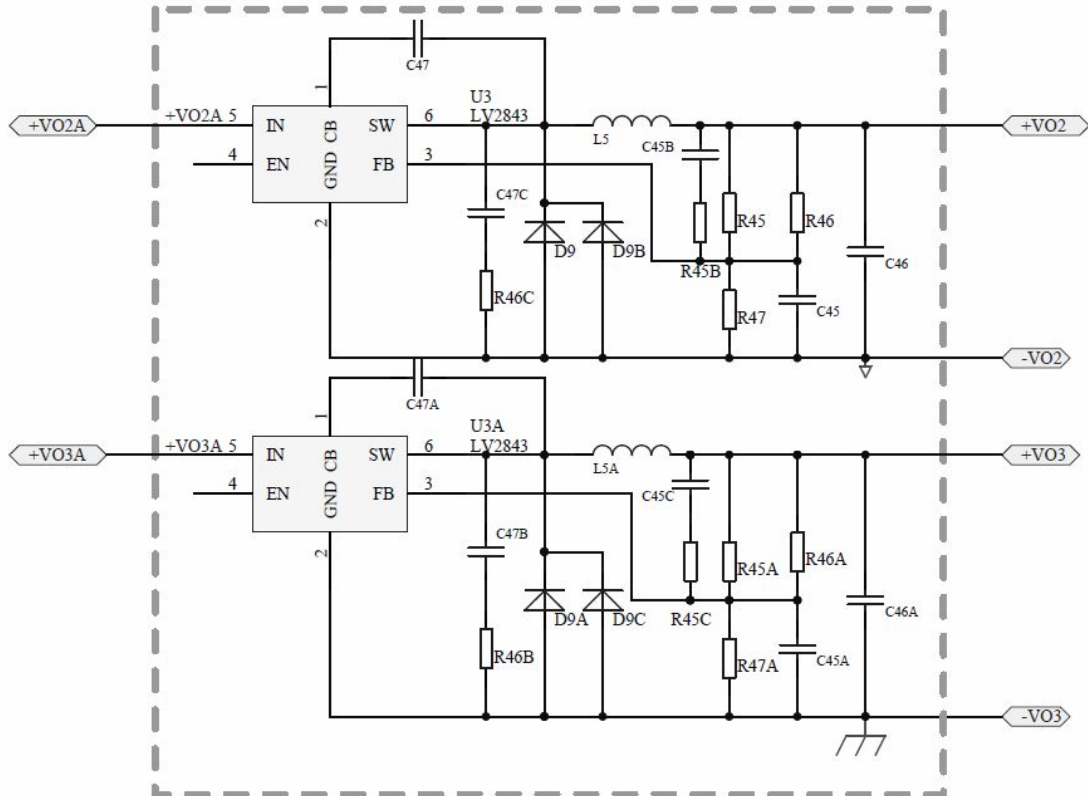
LSC15-26Cxx(Isolation triple) series power design scheme



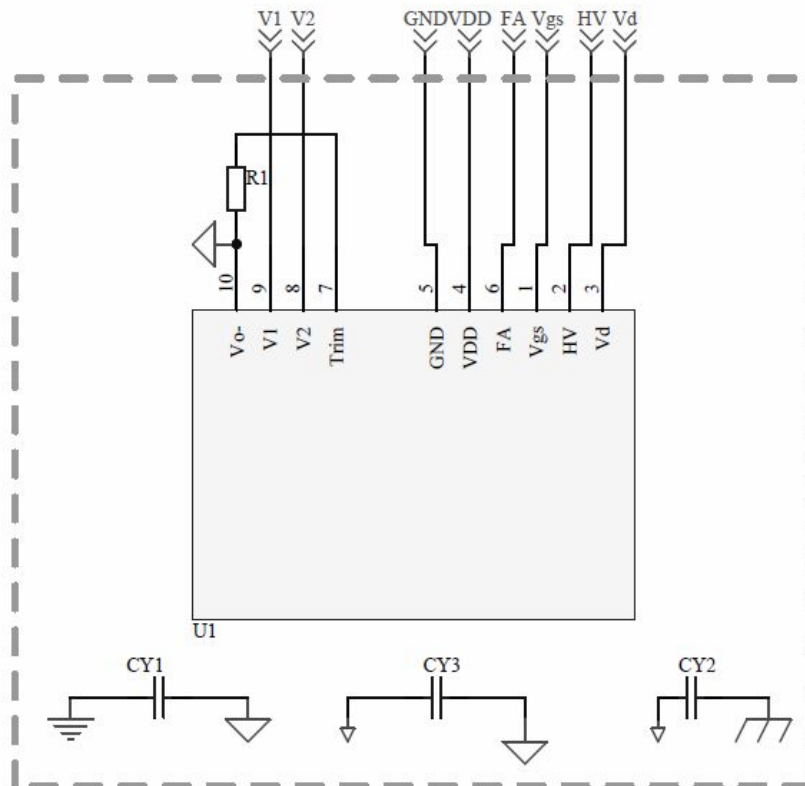
EMC rectifier filtering



DC-DC main board part



Output Vo2/Vo3 Buck circuit



LSC15-26Cxx core board

LSC15-26D0512-04 BOM Parameter

Items	Description	Notes
LSC15-26D0512-04 transformer (T1)	1.76mH	Refer to winding spec
NTC	5Ω/2.85A/9D	
L1	0608-1.2mH/4.0Ω/0.34A	
CX1、CX2	474K/275VAC P=15	
C2、C22	68uF/400V/Φ16*25.5/12000H/640mA@100KHz	
L3	18.5mH	
C4	390uF/25V/Φ8*16/8000H/1250mA@100KHz	
C11	100uF 35V Φ6.3*11 ZLH	
D4	100V/20A/TO-220AB	
C10	270uF/16V/Φ8*8/20000H/5000mA@100KHz	
L2	2.0uH/6.5A TS:0.5*12ts	
CY1、CY3	222M/400VAC P=10	
L5	0304-10uH/156mΩ/0.45A	Saturation current of this inductor must greater than 1.4A
L、N、+Vo1、-Vo1、+Vo2、-Vo2	4*Φ1.5/Φ3.0-4.3/9	
R25	12Ω 2W ±5%	
U3	LV2843DDDCR/TSOT-6L	
C47	104K 25V 0603 X7R	
R45、R46	97.6KΩ 1/10W/±1%/0603/	
R47	3.3KΩ 1/10W ±1% 0603	
C47A	271J/100V/0805/C0G	
R48	51Ω 1/8W ±1% 0805	
D9、D10	60V/1A SOD-123	
D1	1000V/2.0A/ABS	
R106、R107、R108、R109、R110、R111	1.5MΩ 1/4W ±1% 1206L	
D6、D8、D2、D3	1000V/1A eSGA	
R11	100Ω 1/4W ±1% 1206	
R7、R22	75KΩ 1/4W ±1% 1206	
R17、R21	33Ω 1/4W ±1% 1206	
R2、R3	51Ω 1/4W ±1% 1206	
C14、C20A	472K/1000V/1206/X7R	
R27	27Ω 1/4W ±1% 1206	
C42、C101	105K 50V 0805 X7R	
C1	221K/2000V/1206/X7R	
D22	400V/2A/SMB	
R12、R44	4.7KΩ 1/4W ±1% 1206	
C18	225K 25V 0805 X7R	
C113、C112	105K/25V/0603/X5R	
C8	102K/200V/1206/X7R	
C46、C9、C12	106K/25V/1206/X7R	
C45、C45A	104K/50V/0603/X7R	
R45A	390Ω 1/10W ±1% 0603	

LSC15-26D0524-02 BOM Parameter

Items	Description	Notes
LSC15-26D0524-02 transformer (T1)	1.76mH	Refer to winding spec
NTC	5 Ω /2.85A/9D	
L1	0608-1.2mH/4.0 Ω /0.34A	
CX1、CX2	474K/275VAC P=15	
C2、C22	68uF/400V/Φ 16*25.5/12000H/640mA@100KHz	
L3	18.5mH	
C4	220uF 35V Φ8*11.5 ZLH	
C11	100uF 35V Φ 6.3*11 ZLH	
D4	100V/20A/TO-220AB	
C10	270uF/16V/Φ 8*8/20000H/5000mA@100KHz	
L2	2.0uH/6.5A TS:0.5*12Ts	
CY1,CY3	222M/400VAC P=10	
L5	0304-10uH/156m Ω /0.45A	Saturation current of this inductor must greater than 1.4A
R25	12 Ω 2W ±5%	
U3	LV2843DDCR/TSOT-6L	
C47、C45A、C45	104K 25V 0603 X7R	
R45	100K Ω 1/10W ±1% 0603	
R47	3.3K Ω 1/10W ±1% 0603	
C47A	271J/100V/0805/C0G	
R48	51 Ω 1/8W ±1% 0805	
D9,D10	60V/1A SOD-123	
D1	1000V/2.0A/ABS	
R106、R107、R108、R109、R110、R111	1.5M Ω 1/4W ±1% 1206	
D6、D8、D2、D3	1000V/1A eSGA	
R11	100 Ω 1/4W ±1% 1206	
R7、R22	75K Ω 1/4W ±1% 1206	
R17、R21	33 Ω 1/4W ±1% 1206	
R2、R3	51 Ω 1/4W ±1% 1206	
C14、C20A	472K/1000V/1206/X7R	
R27	27 Ω 1/4W ±1% 1206	
C42、C101	105K 50V 0805 X7R	
C1	221K/2000V/1206/X7R	
D22	400V/2A/SMB	
R44	2K Ω 1/4W ±1% 1206	
C18	225K 25V 0805 X7R	
C113、C112	105K/25V/0603/X5R	
C8	102K/200V/1206/X7R	
C46、C9、C12	106K/25V/1206/X7R	
R45A	680 Ω 1/10W ±1% 0603	
R12	8.2K Ω 1/4W ±1% 1206	

LSC15-26D1212-03 BOM Parameter

Items	Description	Notes
LSC15-26D1212-03 transformer T1	1.76mH	Refer to winding spec
NTC	5 Ω /2.85A/9D	
L1	0608-1.2mH/4.0 Ω /0.34A	
CX1、CX2	474K/275VAC P=15	
C2、C22	68uF/400V/Φ 16*25.5/12000H/640mA@100KHz	
L3	18.5mH	
C4	390uF/25V/Φ 8*16/8000H/1250mA@100KHz	
C11	100uF 35V Φ 6.3*11 ZLH	
D4	200V/20A/ITO-220AB	
C10	270uF/16V/Φ 8*8/20000H/5000mA@100KHz	
L2	2.0uH/6.5A TS:0.5*12Ts	
CY1、CY3	222M/400VAC P=10	
L5	0304-10uH/156m Ω /0.45A	Saturation current of this inductor must greater than 1.4A
R25	12 Ω 2W ±5%	
L、N、+Vo1、-Vo1、+Vo2、-Vo2	4*Φ 1.5/Φ 3.0-4.3/9	
U3	LV2843DDDCR/TSOT-6L	
C47	104K 25V 0603 X7R	
R45、R46	97.6K Ω /1 / 10W/±1%/0603	
R47	3.3K Ω 1/10W ±1% 0603	
C47A	271J/100V/0805/C0G	
R48	51 Ω 1/8W ±1% 0805	
D9、D10	60V/1A SOD-123	
D1	1000V/2.0A/ABS	
R106、R107、R108、R109、R110、R111	1.5M Ω 1/4W ±1% 1206	
D6、D8、D2、D3	1000V/1A eSGA	
R11	100 Ω 1/4W ±1% 1206	
R7、R22	75K Ω 1/4W ±1% 1206	
R17、R21	15 Ω 1/4W ±1% 1206	
R2、R3	51 Ω 1/4W ±1% 1206	
C14、C20A	472K/1000V/1206/X7R	
R27	27 Ω 1/4W ±1% 1206	
C42、C101	105K 50V 0805 X7R	
C1	221K/2000V/1206/X7R	
D22	400V/2A/SMB	
R12、R44	4.7K Ω 1/4W ±1% 1206	
C18	225K 25V 0805 X7R	
C113、C112	105K/25V/0603/X5R	
C8	102K/200V/1206/X7R	
C46、C9、C12	106K/25V/1206/X7R	
C45	104K/50V/0603/X7R	
R45A	220 Ω /1 / 10W/±1%/0603	
C45A	473K/25V/0603/X7R	

LSC15-26C0512-04 BOM Parameter

Items	Description	Notes
LSC15-26C0512-04 transformer T1	1.47mH	Refer to winding spec
C2、C22	68uF/400V/Φ16*25.5/12000H/640mA@100KHz	
L1	0608-1.2mH/4.0Ω/0.34A	
NTC	5Ω/2.85A/9D	
R100	12Ω 2W ±5%	
CX1、CX2	474K/275VAC P=15	
L3	18.5mH	
C9	22uF/50V/Φ5*11/5000H/180mA@100KHz	
C4、C4A	390uF/25V/Φ8*16/8000H/1250mA@100KHz	
C10	270uF/16V/Φ8*8/20000H/5000mA@100KHz	
L5、L5A	0304-10uH/156mΩ/0.45A	Saturation current of this inductor must greater than 1.4A
L2	2.0uH/6.5A TS:0.5*12Ts	
C11	470uF/16V/Φ8*11.5/8000H/945mA@100KHz	
CY1、CY2、CY3	222M/400VAC P=10	
ACN、ACL、VO1+、VO1-、VO2+、VO2-、VO3+、VO3-	4*Φ1.5/Φ3.0-4.3/9	
D1	1000V/2A ABF	
R101、R102、R103、R104、R105、R112	1MΩ 1/4W ±1% 1206	
R106、R107、R108、R109、R110、R111	1.5MΩ 1/4W ±1% 1206	
D2、D3、D5、D6、D8	1000V/1A eSGA	
R11	150Ω 1/4W ±1% 1206	
R7、R22	75KΩ 1/4W ±1% 1206	
R3、R3A	100Ω 1/4W ±1% 1206	
R17、R21	33Ω 1/4W ±1% 1206	
C20	472K/1000V/1206/X7R	
C14	222K 1000V 1206 X7R	
R27	27Ω 1/4W ±1% 1206	
C42、C42A、C101	105K 50V 0805 X7R	
C1、C1A	221K/2000V/1206/X7R	
D22、D22A	400V/2A/SMB	
D4、D4A	100V/5A/SMB	
R44	1KΩ 1/4W ±1% 1206	
C47、C47A、C45B、C45C	104K/25V/0603/X7R	
C18	105K/50V/0805/X7R	
C8	102K/200V/1206/X7R	
U3、U3A	LV2843DDCR/TSOT-6L	
D9、D9A、D9B、D9C	60V/1A SOD-123	
R46B、R46C	27Ω 1/8W ±1% 0805	
C47B、C47C	271J/250V/0805/NPO	
R45、R45A、R46、R46A	97.6KΩ /1 / 10W/±1%/0603	
R47、R47A	3.3KΩ 1/10W ±1% 0603	
C46、C46A	226K/16V/1206/X5R	
C5A	220J/1000V/1206/C0G	
R45B、R45C	120Ω /1 / 10W/±1%/0603	
C45、C45A	224K/16V/0603/X7R	

LSC15-26D0512-04 Transformer Datasheet

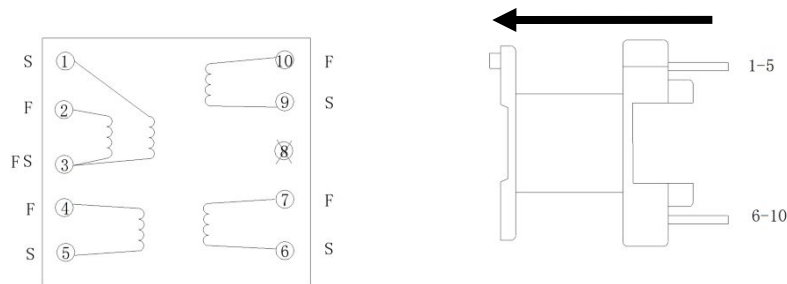
1. Winding description and requirements

Order	Terminal (S-F)	Rounds	Wire type and requirement	Insulated rubber tape between windings (W=11.5mm)
(1)	1-3	72	0.20mm*1 ply TEX-E	1 round
(2)	9-10	6	0.35mm*1 ply TEX-E	1 round
(3)	6-7	18	0.25mm*1 ply TEX-E	1 round
(4)	3-2	33	0.20mm*1 ply TEX-E	1 round
(5)	5-4	18	0.20mm*1 ply TEX-E	1 round

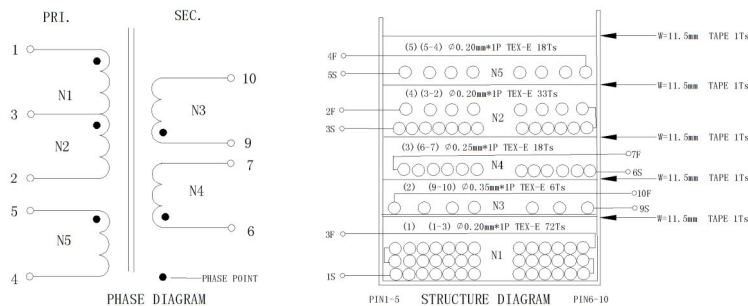
Notice: S--start F--finish , take out pin8

2. Operating process

(1) Phase and schematic diagram



(2) Phase and schematic



3. Electrical characteristics

Test item	Specification	Test condition
Inductance: between(1-2)	1.76±10% mH	10KHz,0.1V@25℃
Leakage inductance: between(1-2)	60uH MAX	10KHz,0.1V@25℃(short circuit 4,5,10,9,6,7)
Ratio: (1-2):(9-10)	105:6±0.5	20KHz,0.1V@25℃
Ratio: (1-2):(6-7)	105:18±0.5	20KHz,0.1V@25℃
Ratio: (1-2):(5-4)	105:18±0.5	20KHz,0.1V@25℃
Breakdown voltage: between primary side and secondary side (5-4) (1-2) : (9-10) (6-7)	5.0mA MAX	4000VAC @60S
Withstand Voltage: between secondary main circuit and auxiliary circuit (9-10) : (6-7)	5.0mA MAX	4000VAC @60S

4. Bill of materials

NO	Material	Description	Qty	Unit	UL#
1	Core	Transformer core P4EE2520(AL=160nH)	1	PAIR	NA
2	BOBBIN	BOBBIN EI-2507-1 (10Pin)PM-9820	1	PCS	E59481
3	Tape	Yellow tape #1350F-1 11.5mm 3M COMPANY	0.005	ROL	E17385
		Yellow tape #1350F-1 6.5mm 3M COMPANY	0.006	ROL	
4	Wire	Triple isolated wire Φ :0.20mm FURUKAWA ELECTRIC CO LTD	5.2	m	E206440
		Triple isolated wire Φ :0.25mm FURUKAWA ELECTRIC CO LTD	0.9	m	E206440
		Triple isolated wire Φ :0.35mm FURUKAWA ELECTRIC CO LTD	0.3	m	E206440
5	Alcoholic varnish	BC-346A	0.5	g	E316427
6	Glue	UB-3420	0.2	g	E250720
7	Scaling powder	Pb-free non-washing scaling powder ZP-800T3	0.02	g	---
8	Pb free Tin bar	99.3Sn0.7Cu	0.11	g	---

LSC15-26D0524-02 Transformer Datasheet

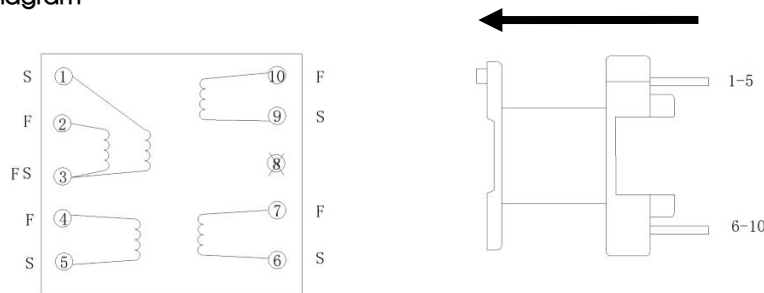
1. Winding description and requirements

Order	Terminal (S-F)	Rounds	Wire type and requirement	Insulated rubber tape between windings (W=11.5mm)
(1)	1-3	72	0.20mm*1 ply TEX-E	1 round
(2)	9-10	5	0.35mm*1 ply TEX-E	1 round
(3)	6-7	26	0.20mm*1 ply TEX-E	1 round
(4)	3-2	33	0.20mm*1 ply TEX-E	1 round
(5)	5-4	16	0.20mm*1 ply TEX-E	1 round

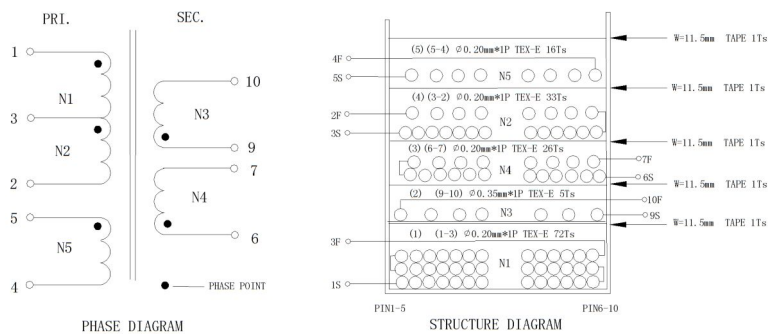
Notice: S--start F--finish , take out pin8

2. Operation process

(1) Phase and schematic diagram



(2) Phase and schematic



3. Electrical characteristics

Test item	Specification	Test condition
Inductance: between(1-2)	1.76±10% mH	10KHz,0.1V@25℃
Leakage inductance: between(1-2)	60uH MAX	10KHz,0.1V@25℃(short circuit 4,5,10,9,6,7)
Ratio: (1-2):(9-10)	105:5±0.5	20KHz,0.1V@25℃
Ratio: (1-2):(6-7)	105:26±0.5	20KHz,0.1V@25℃
Ratio: (1-2):(5-4)	105:16±0.5	20KHz,0.1V@25℃
Breakdown voltage: between primary side and secondary side (5-4) (1-2):(9-10) (6-7)	5.0mA MAX	4000VAC @60S
Withstand Voltage: between secondary main circuit and auxiliary circuit (9-10):(6-7)	5.0mA MAX	4000VAC @60S

4. Bill of materials

NO	Material	Description	Qty	Unit	UL#
1	Core	Transformer core P4EE2520(AL=160nH)	1	PAIR	NA
2	BOBBIN	BOBBIN EI-2507-1 (10Pin)PM-9820	1	PCS	E59481
3	Tape	Yellow tape #1350F-1 11.5mm 3M COMPANY	0.005	ROL	E17385
		Yellow tape#1350F-1 6.5mm 3M COMPANY	0.005	ROL	
4	Wire	Triple isolated wire Φ:0.20mm FURUKAWA ELECTRIC CO LTD	6.0	m	E206440
		Triple isolated wire Φ:0.35mm FURUKAWA ELECTRIC CO LTD	1.0	m	E206440
5	Alcoholic varnish	BC-346A	0.5	g	E316427
6	Glue	UB-3420	0.2	g	E250720
7	Scaling powder	Pb-free non-washing scaling powder ZP-800T3	0.02	g	--
8	Pb free Tin bar	99.3Sn0.7Cu	0.11	g	--

LSC15-26D1212-03Transformer Datasheet

1. Winding description and requirements

Order	Terminal (S-F)	Rounds	Wire type and requirement	Insulated rubber tape between windings (W=11.5mm)
(1)	1-2	105	0.20mm*1 ply TEX-E	1 round
(2)	9-10	12	0.35mm*1 ply TEX-E	1 round
(3)	6-7	15	0.20mm*1 ply TEX-E	1 round
(4)	5-4	18	0.20mm*1 ply TEX-E	1 round

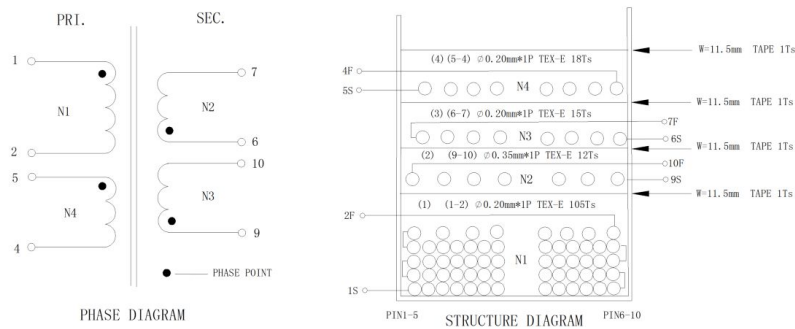
Notice: S--start F--finish , take out pin8

2. Operation process

(1) Phase and schematic diagram



(2) Phase and schematic



3. Electrical characteristics

Test item	Specification	Test condition
Inductance: between(1-2)	1.76±10% mH	10KHz,0.1V@25℃
Leakage inductance: between(1-2)	60uH MAX	10KHz,0.1V@25℃ (short circuit 4,5,10,9,6,7)
Ratio: (1-2):(9-10)	105:12±0.5	20KHz,0.1V@25℃
Ratio: (1-2):(6-7)	105:15±0.5	20KHz,0.1V@25℃
Ratio: (1-2):(5-4)	105:18±0.5	20KHz,0.1V@25℃
Breakdown voltage: between primary side and secondary side (5-4) (1-2):(9-10) (6-7)	5.0mA MAX	4000VAC@60S
Withstand Voltage: between secondary main circuit and auxiliary circuit (9-10):(6-7)	5.0mA MAX	4000VAC@60S

4. Bill of materials

NO	Material	Description	Qty	Unit	UL#
1	Core	Transformer core P4EE2520(AL=160nH)	1	PAIR	NA
2	BOBBIN	BOBBIN EI-2507-1 (10Pin)PM-9820	1	PCS	E59481
3	Tape	Yellow tape #1350F-1 11.5mm 3M COMPANY	0.005	ROL	E17385
		Yellow tape#1350F-1 6.5mm 3M COMPANY	0.006	ROL	
4	Wire	Triple isolated wire Φ:0.20mm FURUKAWA ELECTRIC CO LTD	5.2	m	E206440
		Triple isolated wire Φ:0.35mm FURUKAWA ELECTRIC CO LTD	0.9	m	E206440
5	Alcoholic varnish	BC-346A	0.5	g	E316427
6	Glue	UB-3420	0.2	g	E250720
7	Scaling powder	Pb-free non-washing scaling powder ZP-800T3	0.02	g	---
8	Pb free Tin bar	99.3Sn0.7Cu	0.11	g	---

LSC15-26C0512-04 Transformer Datasheet

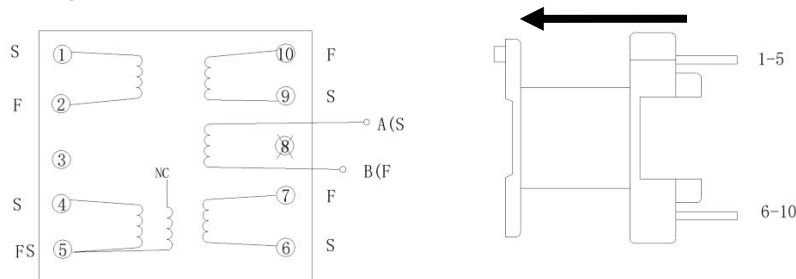
1. Winding description and requirements

Order	Terminal (S-F)	Rounds	Wire type and requirement	Insulated rubber tape between windings (W=11.5mm)
(1)	1-2	96	∅0.2mm*1 ply TEX-E	2 Rounds
(2)	A-B	6	∅0.4mm*1 ply TEX-E	2 Rounds
(3)	9-10	18	∅0.2mm*1 ply TEX-E	2 Rounds
	6-7			
(4)	4-5	18	∅0.2mm*1 ply TEX-E	2 Rounds
(5)	5-NC	22	∅0.2mm*1 ply TEX-E	2 Rounds

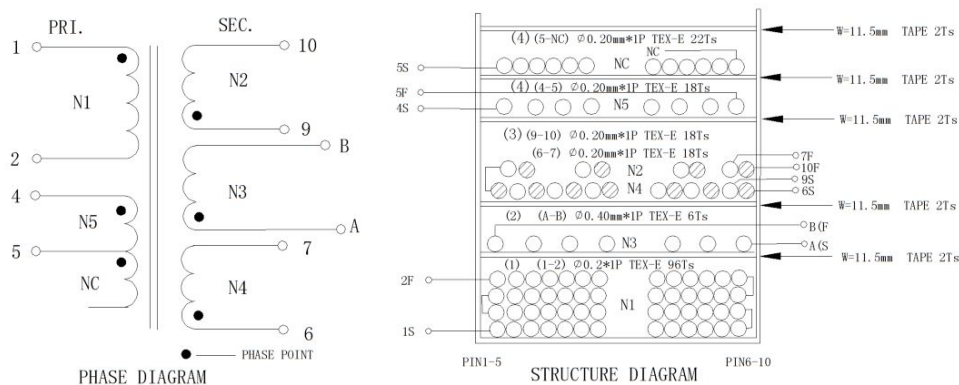
Notice: S--start F--finish , take out pin8

2. Operation process

(1) Phase and schematic diagram



(2) Phase and schematic



3. Electrical characteristics

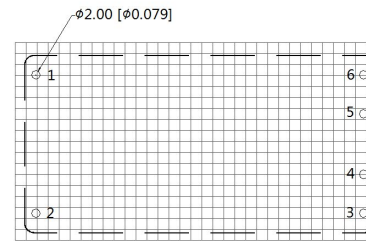
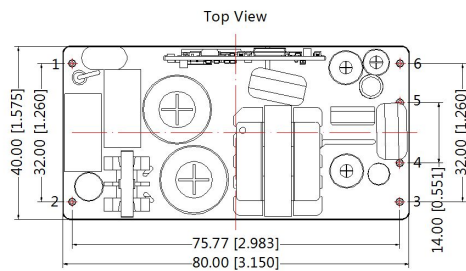
Test item	Specification	Test condition
Inductance: between(1-2)	1.47±10% mH	10kHz, 0.1V@25°C
Leakage inductance: between(1-2)	100uH MAX	10kHz, 0.1V@25°C (short circuit 4,5,6,7,9,10,A,B)
Ratio: (1-2) : (A-B)	96 : 6±0.5	20kHz, 0.1V
Ratio: (1-2) : (4-5)	96 : 18±0.5	20kHz, 0.1V
Ratio: (1-2) : (6-7) / (9-10)	96: 18±0.5	20kHz, 0.1V
Withstand Voltage: N1:N2, N3, N4	5.0mA MAX	4000VAC@60S
Withstand Voltage: N2:N3, N4	5.0mA MAX	4000VAC@60S
Withstand Voltage: N3:N4	5.0mA MAX	4000VAC@60S

4. Bill of materials

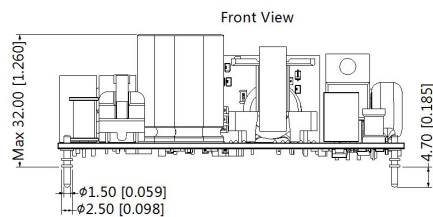
NO	Material	Description	Qty	Unit	UL#
1	Core	P4EE2519(AL=160nH)	1	PAIR	--
2	BOBBIN	EI-2507-1 10PIN T375J	1	PCS	E59481
3	Tape	Yellow tape#1350F-1 11.5mm	0.0076	ROL	E17385
		Yellow tape #1350F-1 6.8mm	0.0060	ROL	
4	Wire	Triple isolated wire Φ :0.20mm	7.27	m	E206440
		Triple isolated wire Φ :0.40mm	0.38	m	
5	Alcoholic varnish	BC-346A	0.5	g	E317427
6	Glue	UB-3420 epoxy glue	0.2	g	E250719
7	Scaling powder	Pb-free non-washing scaling powder ZP-800T3	0.02	g	--
8	Pb free Tin bar	Lead-free solder bar	0.11	g	--

LSC15-26Dxx Product Size Diagram of Typical Scheme

THIRD ANGLE PROJECTION



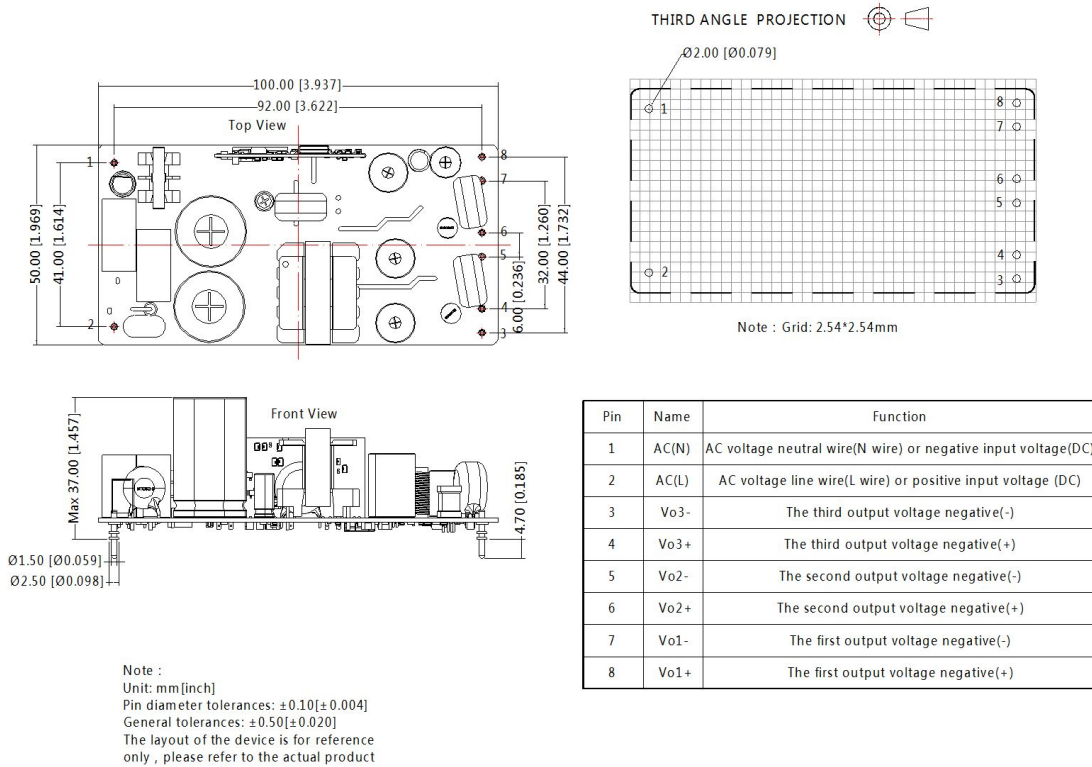
Note : Grid: 2.54*2.54mm



Pin	Name	Function
1	L	AC voltage line wire(L wire) or positive input voltage (DC)
2	N	AC voltage neutral wire(N wire) or negative input voltage(DC)
3	+Vo2	The second output voltage negative(+)
4	-Vo2	The second output voltage negative(-)
5	-Vo1	The first output voltage negative(-)
6	+Vo1	The first output voltage negative(+)

Note :
 Unit: mm[inch]
 Pin diameter tolerances: $\pm 0.10[\pm 0.004]$
 General tolerances: $\pm 0.50[\pm 0.020]$
 The layout of the device is for reference only , please refer to the actual product

LSC15-26Cxx Product Size Diagram of Typical Scheme



Product Typical Scheme Application Circuit

1. Typical application circuit

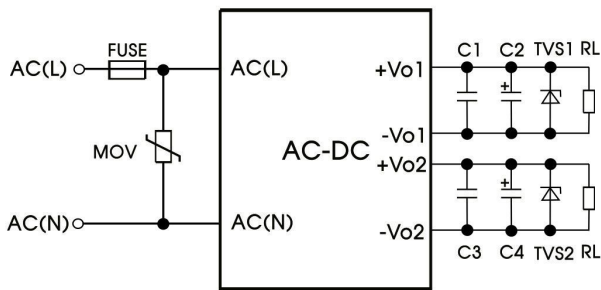


Fig. 1: LSC15-26Dxx (isolated double)

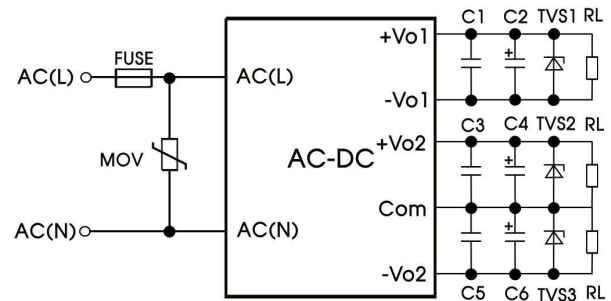


Fig. 2: LSC15-26Cxx (isolated triple)

Model	FUSE	MOV	C1/C3/C5	C2(μ F)	C4(μ F)	C6(μ F)	TVS1	TVS2	TVS3
LSC15-26C0512-04	3.15A/500VAC, slow fusing, necessary	20D102K	1 μ F	330	220	220	SMBJ7.0A	SMBJ20A	SMBJ20A
LSC15-26D1212-03				220	220	--	SMBJ20A	SMBJ20A	--
LSC15-26D0512-04				330	220	--	SMBJ7.0A	SMBJ20A	--
LSC15-26D0524-02				330	100	--	SMBJ7.0A	SMBJ30A	--

Note:

The output filter capacitor(C2、C4、C6) is electrolytic capacitor, high frequency and low resistance electrolytic capacitor is preferred, capacity and current refer to the technical specification provided by the manufacturers. Capacitance Withstand Voltage drop to at least 80%. Ceramic capacitors(C1、C3、C5) used to remove high frequency noise. TVS is a recommended component to protect post-circuits if converter fails.

2. EMC solution-recommended circuit

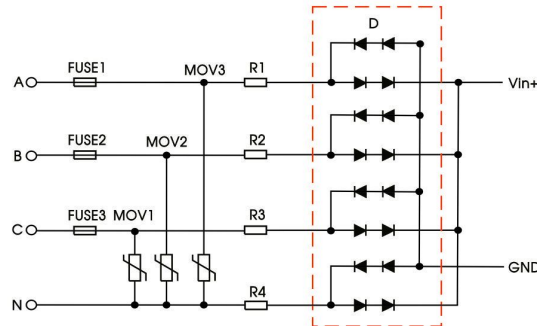


Fig3. Recommended circuit for applications which require 4.4kV differential-mode inrush standard (full-wave rectification)

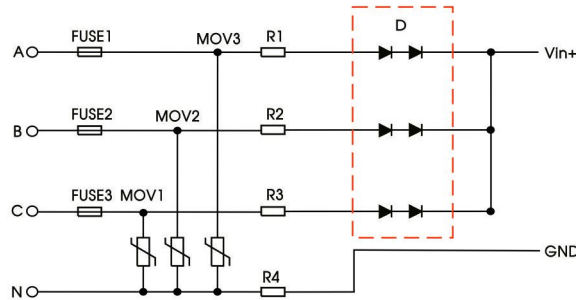


Fig. 4: Recommended circuit for applications which require 4.4kV differential-mode inrush standard (half-wave rectification)

Recommend Parameter For Higher EMC Standard Circuit	
Type	Recommended Value
MOV1、MOV2、MOV3	20D821K
D	2A/1000V
R1、R2、R3、R4	10Ω /5W
FUSE1、FUSE2、FUSE3	3.15A/500VAC, slow fusing, necessary

3. For more information Please find the application note on www.mornsun-power.com

Note:

- LSC15-26C/Dxx core board must be designed with recommend peripheral circuit;
- Packing information please refer to Product Packing Information which can be downloaded from www.mornsun-power.com .
Packing bag number: 58020024;
- If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75% with nominal Input-voltage and rated output load;
- All index testing methods in this datasheet are based on our Company's corporate standards;
- We can provide product customization service, please contact our technicians directly for specific information;
- Products are related to laws and regulations: see "Features" and "EMC";
- Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

MORNSUN Guangzhou Science & Technology Co., Ltd.

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