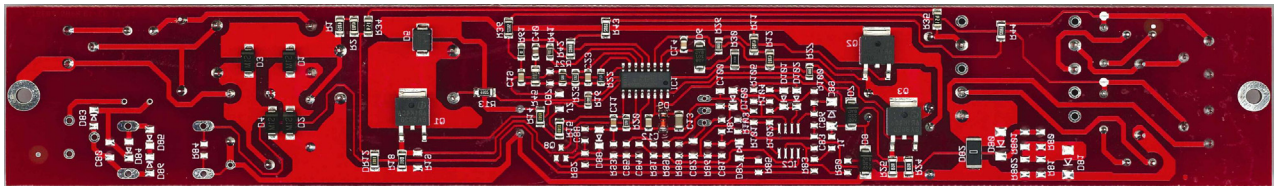
Date: 12.05.2016
Version: 1.1

Board-description: Demoboard 1x54W T5 - VM - 180VAC to 270VAC - ICB2FL03G

	Demoboard 1x54W T5
Design	Voltage Mode preheating
IC Type	ICB2FL03G

Name	short	rated value	unit	comment
Input voltage	V_{IN_AC}	230	V_{RMS}	$180V_{AC}$ to $270V_{AC}$
Input current	I_{IN}	257	mA_{RMS}	@$230V_{AC}$
Input Power	P_{IN}	59,1	W	@$230V_{AC}$
Power factor	PF	> 0,99		@$230V_{AC}$
A_{THD}	Athd	< 4	%	@$230V_{AC}$
efficiency		> 93	%	@$230V_{AC}$
Bus voltage	V_{BUS}	410	V_{RMS}	Elko voltage
Preheating frequency	f_{PH}	106	kHz	
Run frequency	f_{RUN}	45,5	kHz	
preheating time	t_{PH}	1000	ms	
Lamp voltage	V_{Lamp}	118	V_{RMS}	
Lamp current	I_{Lamp}	460	mA_{RMS}	
Ignition voltage	V_{IGN}	> 620	V_{RMS}	
EOL1 threshold	V_{EOL1}	500	V_{PP}	Factor: 1,5 of V_{Lamp}
EOL2 threshold	P_{EOL2}	5	W	

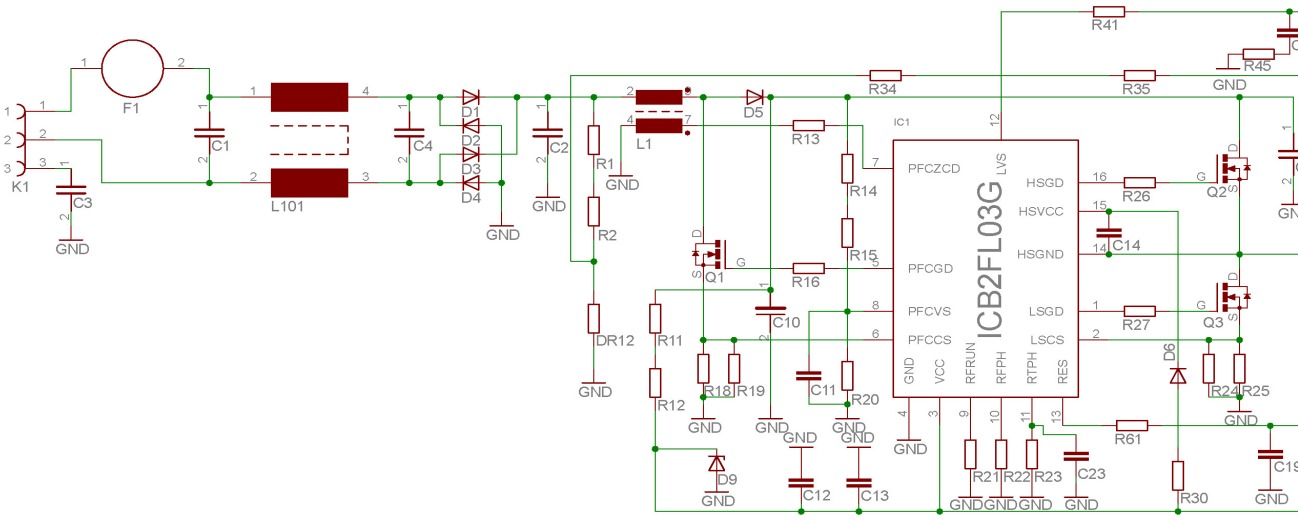


More information:

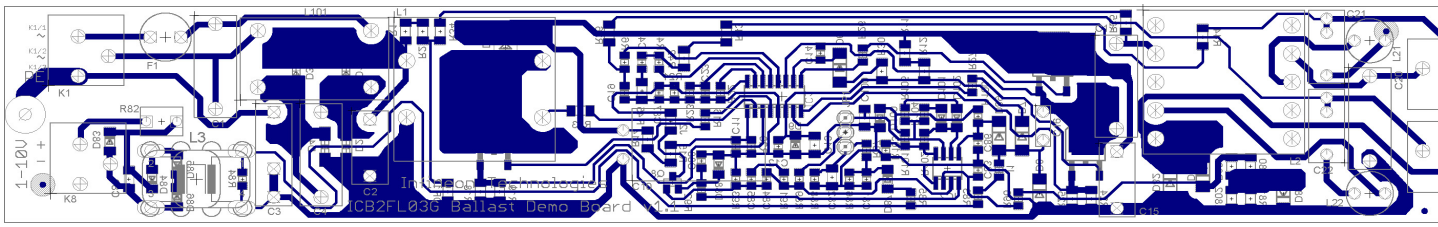
http://www.infineon.com/smartlighting

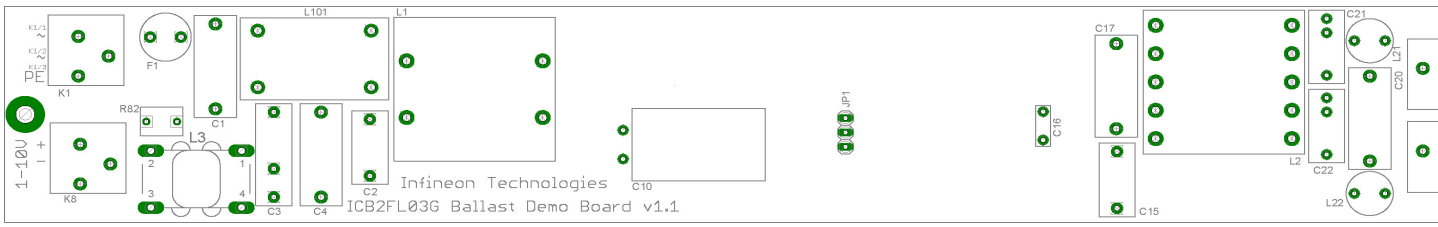
http://www.infineon.com/CoolMOS

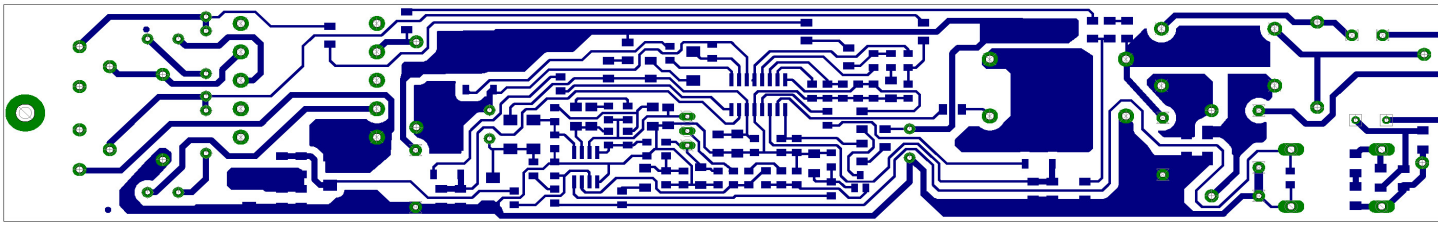
Schematic: Demoboard 1x54W T5 - VM - 180VAC to 270VAC - ICB2FL03G

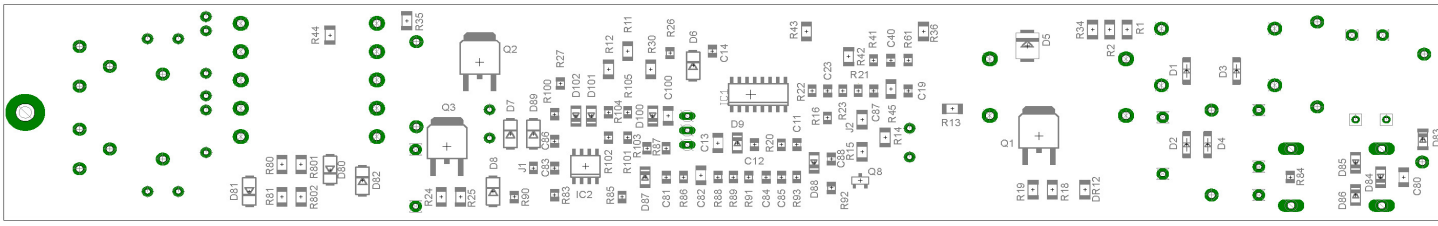


Layout: Demoboard 1x54W T5 - VM - 180VAC to 270VAC - ICB2FL03G









Date: 12.05.2016
Version: 1.1

BOM: Demoboard 1x54W T5 - VM - 180VAC to 270VAC - ICB2FL03G

					ICB2FL03G		
	Input voltage = 180VAC to 270VAC				VBUS = 410 VRMS		
				Package			Package
F1	Fuse 1A fast	Wickmann	Typ 370		R1	470kΩ	.1206
					R2	470kΩ	.1206
K1/1	AC Input	WAGO 250-203			R11	470kΩ	.1206
K1/2	AC Input				R12	470kΩ	.1206
K1/3	PE				R13	33kΩ	.1206
K2/1	not connected	WAGO 250-203			R14	820kΩ	.1206
K2/2	High Side Filament				R15	820kΩ	.1206
K2/3	High Side Filament				R16	10Ω	.0805
K3/1	Low Side Filament	WAGO 250-203			R18	1Ω	.1206
K3/2	Low Side Filament				R19	not assembled	.1206
K3/3	not connected				R20	10kΩ	.0805
IC1	ICB2FL03G	Infineon		SO-16	R21	11kΩ	.0805
Q1	IPD60R1k4C6	Infineon		D-Pack	R22	8.2kΩ	.0805
Q2	IPD60R1k4C6	Infineon		D-Pack	R23	10kΩ	.0805
Q3	IPD60R1k4C6	Infineon		D-Pack	R24	0.68Ω	.1206
D1…4	S1M	Fairchild	(1000V/1A/2µs)	DO-214AC	R25	0.68Ω	.1206
D5	MURS160T3	ON Semi	(600V/1A/75ns)	SMB	R26	10Ω	.0805
D6	BYG20J	Philips	(600V/1,5A/75ns)	SOD124	R27	10Ω	.0805
D7	BYG22D	Philips	(200V/1A/25ns)	DO214	R30	33Ω	.1206
D8	BYG22D	Philips	(200V/1A/25ns)	DO214	R34	150kΩ	.1206
D9	BZV55-C16	NXP		SOD-80C	R35	150kΩ	.1206
DR12	110kΩ			.1206	R36	56kΩ	.1206
D82	0Ω			.2512	R41	68kΩ	.0805
					R42	68kΩ	.1206
L101	2x68mH/0.6A	Epcos	B82732F2601B001		R43	68kΩ	.1206
L1 PFC	1.58mH	Wuerth	750315271	EFD25/13/9	R44	68kΩ	.1206
L 2	1.46mH	Wuerth	750315259	EFD25/13/9	R45	6,8kΩ	.1206
L 21	100µH/760mA	Epcos	B82144B1104J000	RM5	R61	0Ω	.0805
L 22	100µH/760mA	Epcos	B82144B1104J000	RM5			
C1	220nF/X2/305V	Epcos	B32922C3224M000	RM15			
C2	33nF/630V/MKT	Epcos	B32521N8333K000	RM10			
C3	3,3nF/Y2/300V	Epcos	B32021A3332K000	RM10			
C4	220nF/X2/305V	Epcos	B32922C3224M000	RM15			
C10	10µF/450V	Epcos	B43888C5106M000	single ended			
C11	2,2nF/50V	X7R		.0805			
C12	100nF/50V	X7R		.0805			
C13	1µF/25V	X7R		.1206			
C14	68nF/50V	X7R		.0805			
C15	22nF/630V/MKT	Epcos	B32621A6223K000	RM10			
C16	1nF/630V/MKT	Epcos	B32529C8102K000	RM5			
C17	100nF/630V/MKP	Epcos	B32612A6104K008	RM15			
C19	22nF/50V	X7R		.0805			
C20	4,7nF/1600V/MKP	Epcos	B32612-J1472J008	RM15			
C21	22nF/400V/MKP	Epcos	B32620A4223J000	RM7,5			
C22	22nF/400V/MKP	Epcos	B32620A4223J000	RM7,5			
C23	10nF/50V	X7R		.0805			
C40	220nF/50V	X7R		.0805			

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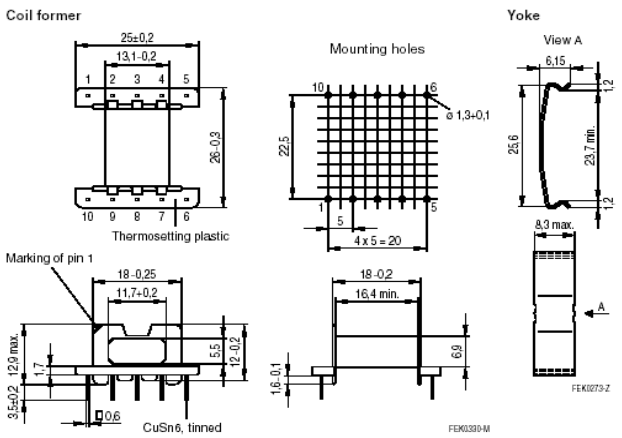
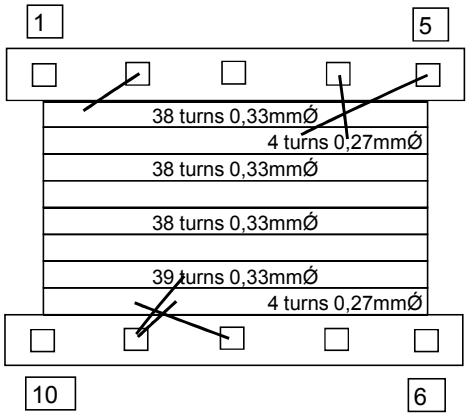
L-Design - Inverter: Demoboard 1x54W T5 - VM - 180VAC to 270VAC - ICB2FL03G

Coil former					Ordering code
Sections	A_N mm²	l_N mm	A_R value μΩ	Pins	
1	40,7	50	42,3	10	B66422-B1010-D1 B66422-W1010-D1
Yoke (ordering code per piece, 2 are required)					B66422-B2000





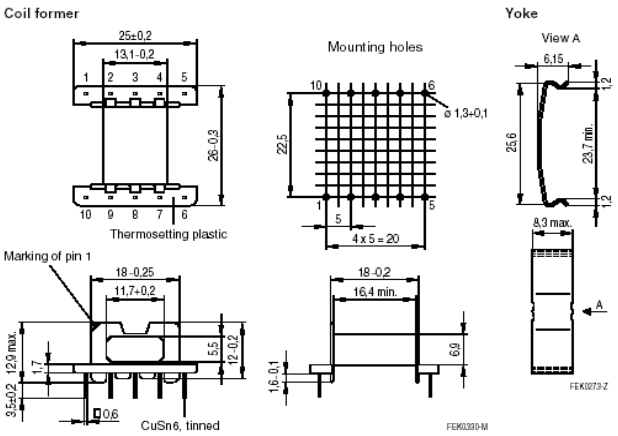
EFD 25/13/9; N87; (total gap= 2,0mm)
L=1,46mH
View at pin-side of the coil former

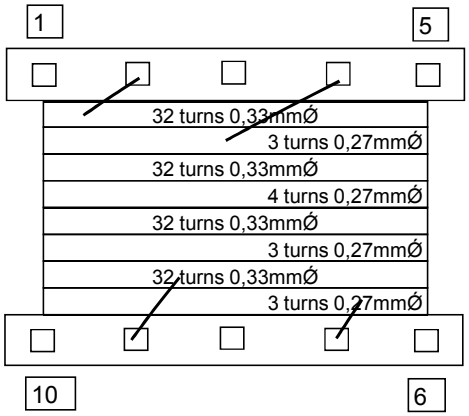
Wind windings (Pin 2 to Pin 9) first
then the others for preheating on top

Wuerth Part # 750315259

L-Design - PFC: Demoboard 1x54W T5 - VM - 180VAC to 270VAC - ICB2FL03G

Coil former					Ordering code
Sections	A_N mm²	l_N mm	A_R value μΩ	Pins	
1	40,7	50	42,3	10	B66422-B1010-D1 B66422-W1010-D1
Yoke (ordering code per piece, 2 are required)					B66422-B2000





EFD 25/13/9; N87; (total gap= 1,1mm)
L=1,58mH
View at pin-side of the coil former

Wind windings (Pin 2 to Pin 9) first
then the others on top

Wuerth Part # 750315271

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