4000VAC isolation test voltage, EFD25, flyback transformer

RoHS

FEATURES

- 85 ~ 264VAC wide input voltage range
- EFD25 Bobbin
- Meets UL/EN 62368 standards

TTLHE25-20BxxD transformer series feature with 4000VAC primary to secondary isolation, an operating ambient temperature range of -40℃ ~ +110℃. It can be used with our control IC SCM1710ASA to achieve flyback power supply design with wide input volatge range and various protection functions and superior EMI performance.

Selection Guide

Part No.	Input Voltage (VAC)	Output Voltage (VDC)	Output Current (mA)	Auxiliary Voltage (VDC)	Auxiliary Current (mA)	Typical Power (W)	Typical Operating Frequency (kHz)
TTLHE25-20B12D	85 ~ 264	12	2100	19.68	20	25	65

Note: Refer to Schematic for pins and phase points of the transformers.

Electrical Specifications

Part No.	Inductance①(uH)		DCR(mΩ) Typ.			K (Flux Density Factor) (Gauss/A)
	Input Inductance	Leakage Inductance Max.	N1	N2	N3	
TTLHE25-20B12D	1440.00±10%	100.00	782	32	820	3143

Notes: ①The test signal of the inductance are 10kHz and 100mV, test the leakage inductance of N1 based on N2 and N3 are shorted;
②To ensure the transformer will not saturate in all of the applications and conditions, the peak flux density(Bm) should remain below 3000Gauss. Use the following formula to calculate the peak flux density: Bm=K*Ipk, Ipk stands for the peak current of input, which unit is A;
③Approximate transformer core loss(Pcv) can be calculated as following formula: $Pcv=3.9E-14*f^{1.82}*\triangle B^{2.59}$, the unit of Pcv is W, f stands for operating frequency, which unit is kHz, △B is the operating flux density, which unit is Gauss. △B can be calculated as: △B=K*△I.

General Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Isolation	N1, N3 to N2	Electric Strength Test for1 minute, leakage current <5mA	4000	--	--	VAC
	N1 to N3	Electric Strength Test for1 minute, leakage current <1mA	1000	--	--	VDC
Operating Temperature①			-40	--	+110	℃
Storage Temperature②			-40	--	+110	
Storage Humidity		Non-condensing	--	--	95	%RH
Soldering Temperature		Wave-soldering	260 ± 5℃; time: 5 - 10s			
		Manual-welding	360 ± 10℃; time: 3 - 5s			
Creepage Distance			7.0	--	--	mm
Clearance			6.4	--	--	

Notes: ①The temperature of the transformer (ambient plus temperature rise) should be within the operating temperature range;
②The storage temperature of the transformer only.
③The isolation strap of the peripheral is designed to meet the clearance and creepage distance.

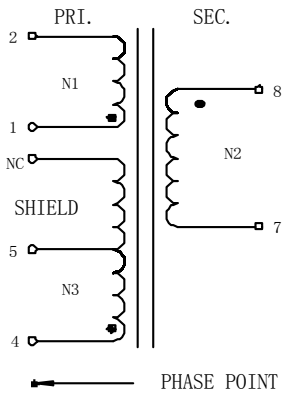
Mechanical Specifications

Weight	TTLHE25-20B12D	25.20g (Typ.)

Material Certification

Material	UL No.
Bobbin	E41429
Tape	E17385
Wire 1	E196072
Wire 2	E234867
Wire 3	E206440
Varnish	E317427
Glue	E250719

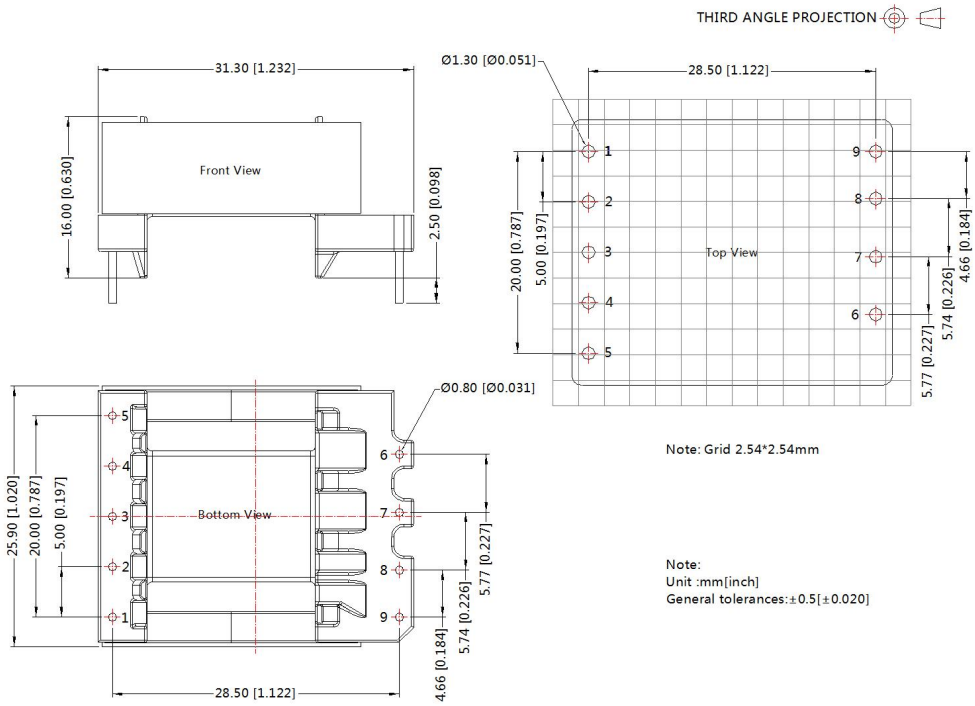
Schematic



Turns Ratio	TTLHE25-20B12D
N1：N2：N3	7.82：1：1.64

Note: Input: N1, output: N2, auxiliary: N3, shield: 5-NC.

Dimensions and Recommended Layout



Notes:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220096;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%, 10kHz and 100mV;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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