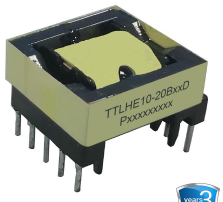
3000VAC isolation test voltage, EFD15, flyback transformer



RoHS

FEATURES

- 85 - 264VAC wide input voltage range
- EFD15 Bobbin
- Meets UL/EN 62368 standards

TTLHE10-20BxxD transformer series feature with 3000VAC primary to secondary isolation, an operating ambient temperature range of -40℃ to +110℃. It can be used with our control IC SCM1710ASA to achieve flyback power supply design with wide input voltage 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)
TTLHE10-20B05D	85 - 264	5	2000	20.00	20	10	65
TTLHE10-20B12D	85 - 264	12	900	18.36	20	10	65

Note: 1. Refer to Schematic for pins and phase points of the transformers.
2. The product picture is for reference only. For details, please refer to the actual product.

Electrical Specifications

Part No.	Inductance①(uH)		DCR(mΩ) Typ.			K (Flux Density Factor) (Gauss/A)
	Input Inductance	Leakage Inductance Max.	N1	N2	N3	
TTLHE10-20B05D	960.00±10%	60.00	2400	29	835	5299
TTLHE10-20B12D	960.00±10%	60.00	2400	113	682	5299

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	3000	--	--	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, Max. 10 seconds	255	260	265	℃
		Manual-welding, Max. 5 seconds	350	360	370	

Notes: ①The temperature of the transformer (ambient plus temperature rise) should be within the operating temperature range;
②The storage temperature of the transformer only.
③To meet the safety requirements, you need to use glue.

Mechanical Specifications

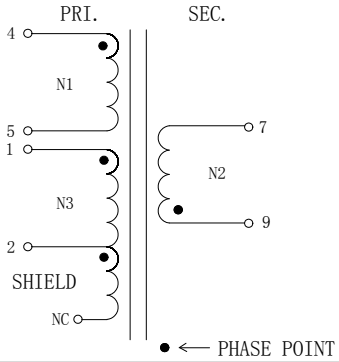
Weight	TTLHE10-20B05D	5.20g (Typ.)
	TTLHE10-20B12D	

Material Certification

Material	UL No.
Bobbin	E41429
Tape	E17385
Wire 1	E253843

Wire 2	E206440
Varnish	E317427
Glue	E250719

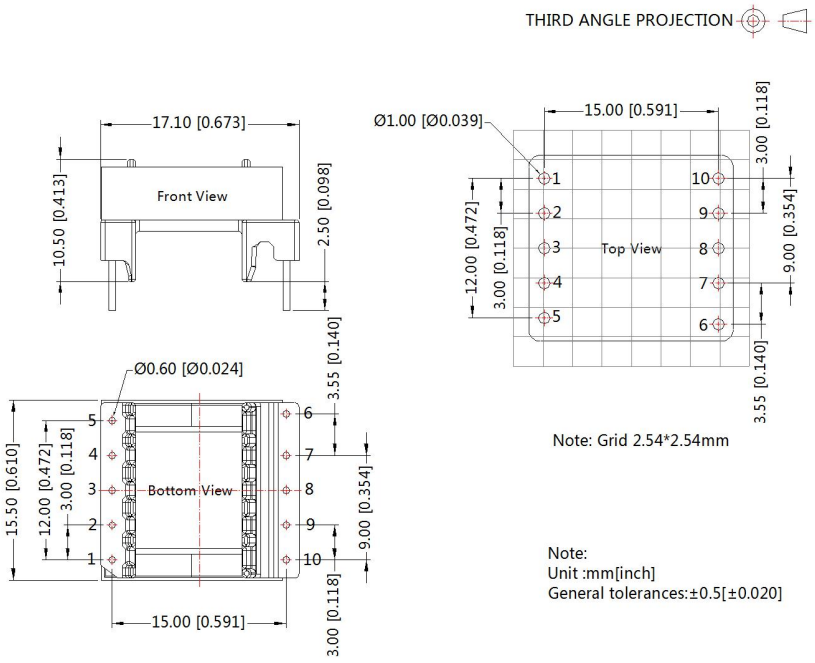
Schematic



Turns Ratio	TTLHE10-20B05D	TTLHE10-20B12D
N1：N2：N3	15.38：1：4.00	7.24：1：1.53

Note: Input: N1, output: N2, auxiliary: N3, shield: 2-NC.

Dimensions and Recommended Layout



Notes:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220095;
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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