

Isolation Power Transformers

Toroid Platform SMD - PH9385.XXXNLT and PM2155.XXXNLT



- Push Pull Converter Transformer
- IEC 60950 and 61558 basic insulation
- Compliant, 12mm creepage
4KVrms isolation (600Vrms continuous)
- Patented:** US Patent 9,646,755

Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

Part Number		Inductance (1-4) (μH ±35%)	Leakage Inductance (1-4) with (5-8) shorted (μH MAX)	Capacitance (1, 4) to (5, 8) (pF MAX)	DCR (1-4) (Ω MAX)	DCR (5-8) (Ω MAX)	ET (1-4) ¹ (V-μsec Max)	Turns Ratio (1:4) (8:5)	Isolated Voltage ² (Vrms)
Commerical	Automotive ⁸								
PH9385.011NLT	PM2155.011NLT	3200	6.0	36	1.10	1.00	109	1CT : 1CT	4000
PH9385.045NLT	PM2155.045NLT	3200	4.0	36	1.10	1.25	109	4CT : 5CT	
PH9385.034NLT	PM2155.034NLT	2600	3.0	36	1.00	1.50	98	3CT : 4CT	
PH9385.012NLT	PM2155.012NLT	2600	3.0	40	1.00	1.90	98	1CT : 2CT	
PH9385.038NLT	PM2155.038NLT	2600	3.0	40	1.00	2.20	98	3CT : 8CT	
PH9385.013NLT	PM2155.013NLT	2600	3.0	40	1.00	2.75	98	1CT : 3CT	
PH9385.027NLT	PM2155.027NLT	2600	3.0	40	1.00	3.00	98	2CT : 7CT	
PH9385.015NLT	PM2155.015NLT	1350	3.0	30	0.80	3.20	70	1CT : 5CT	

Notes:

- The ET Max is calculated to limit the core loss and temperature rise at 200KHz based on a bipolar flux swing of 180mT Peak.
- For Push-Pull topology, where the voltage is applied across half the primary winding turns, the ET needs to be derated by 50% for the same flux swing.
- The applied ET may need to be further derated for higher frequencies based on the temperature rise which results from the core and copper losses
 - To calculate total copper loss (W), use the following formula:

$$\text{Copper Loss (W)} = I_{rms_Primary}^2 * DCR_Primary + I_{rms_Secondary}^2 * DCR_Secondary$$
 - To calculate total core loss (W), use the following formula:

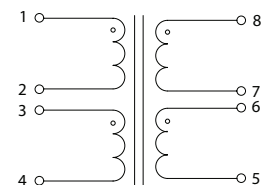
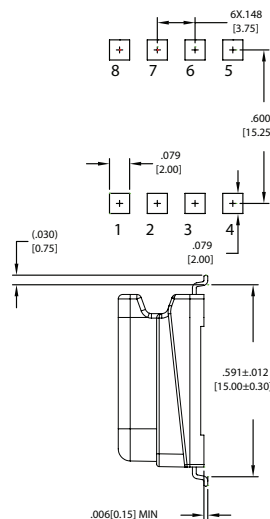
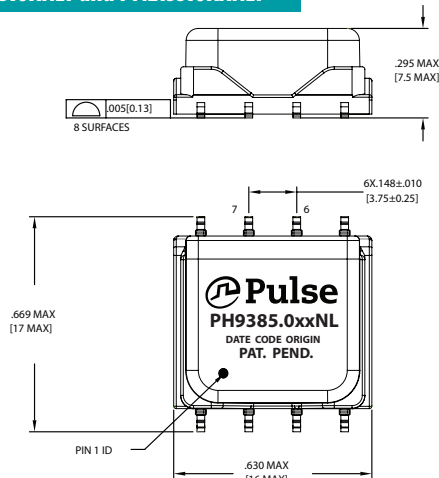
$$\text{Core Loss (W)} = 3.93E-10 * (\text{Frequency in kHz})^{1.7} * (180 * [ET/ET\ Max])^{2.17}$$
 Where ET is the applied Volt Second, ET Max is the rated Volt Second for 180mT flux swing
 - To calculate temperature rise, use the following formula:

$$\text{Temperature Rise (°C)} = 100 * (\text{Core Loss (W)} + \text{Copper Loss (W)})$$
- The AEC-Q200 temperature and humidity operational life testing was completed using a dielectric strength test of 4000Vdc.
- Optional Tape & Reel packing can be ordered by adding a "T" suffix to the part number (i.e. PH9385.011NLT becomes PH9385.011NLT). Pulse complies to industry standard tape and reel specification EIA481.
- The "NL" suffix indicates an RoHS-compliant part number.
- Continuous isolation voltage confirmed by 125°C/1000hrs accelerated aging with the bias voltage applied between primary and secondary windings.
- The PM2155.XXXNLT part numbers are AEC-Q200 and IATF16949 certified. The mechanical dimensions are 100% tested in production but do not necessarily meet a product capability index (Cpk) >1.33 and therefore may not strictly conform to PPAP.

Mechanical

Schematic

PH9385.0XXNLT and PM2155.0XXNLT



Weight2.5/grams
 Tray80/tray

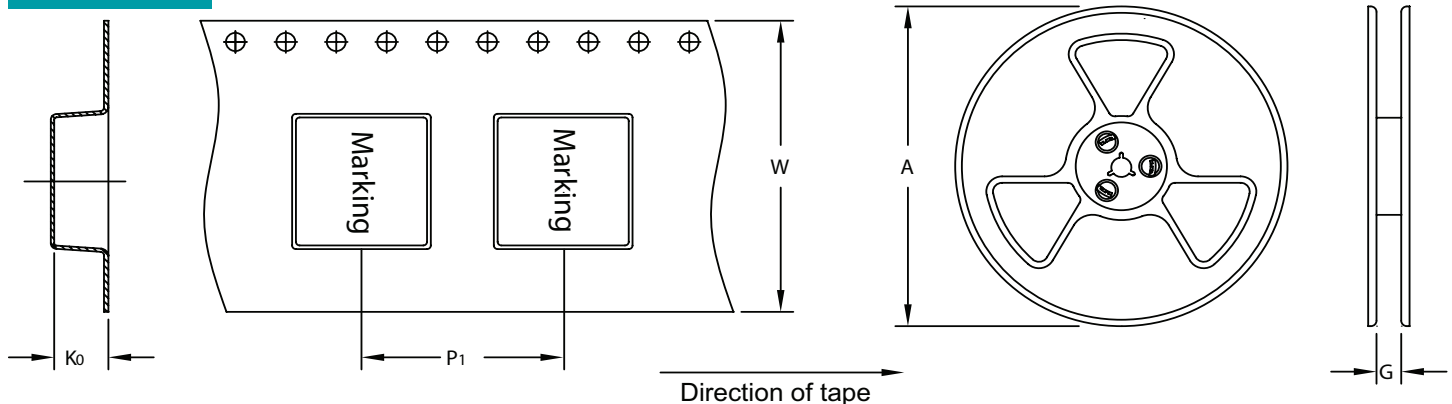
Dimensions: Inches
 mm

Unless otherwise specified,
 all tolerances are ± .010
 0,25

Isolation Power Transformers

Toroid Platform SMD - PH9385.XXXNLT and PM2155.XXXNLT

TAPE & REEL INFO

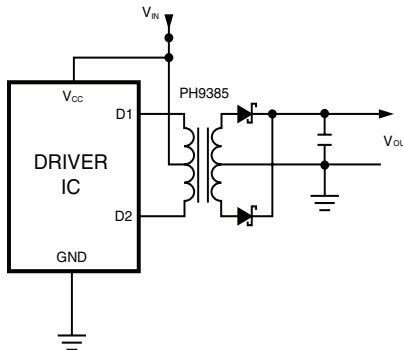


SURFACE MOUNTING TYPE, REEL/TAPE LIST

PART NUMBER	REEL SIZE (mm)		TAPE SIZE (mm)			QTY PCS/REEL
	A	G	P ₁	W	K ₀	
PH9385.XXXNLT/PM2155.XXXNLT	Ø330	32.4	24	32	8.3	300

APPLICATION

PH9385.XXXNLT is a series of high isolation power supply transformer drivers. Intended to operate in a fixed duty cycle Push Pull topology, it is a part of a low cost solution for delivering lower power (up to 2.5W) from a low voltage source. A typical implementation would be an isolated RS-485 power supply driver circuit, the design is compatible with the MAXIM™ MAX253 IC. Other IC's include Texas SN6501 UCC2808, Analog ADuM4070, ADuM447x. A schematic diagram for the Push Pull converter topology is given below.



For a fixed 50% duty cycle mode of operation, the output voltage is simply determined by the input voltage and turns ratio. So, with the available turns ratios, a variety of output voltages can be selected. This range can be extended by implementing different topologies such as forward or bridge and can be used with controllers offered by different IC vendors for a number of different applications.

For More Information

Pulse Worldwide Headquarters

15255 Innovation Drive Ste 100
San Diego, CA 92128
U.S.A.

Pulse Europe

Pulse Electronics GmbH
Am Rottland 12
58540 Meinerzhagen
Germany

Pulse China Headquarters

Pulse Electronics (ShenZhen) CO., LTD
D708, Shenzhen Academy of
Aerospace Technology,
The 10th Keji South Road,
Nanshan District, Shenzhen,
P.R. China 518057

Pulse North China

Room 2704/2705
Super Ocean Finance Ctr.
2067 Yan An Road West
Shanghai 200336
China

Pulse South Asia

3 Fraser Street
0428 DUO Tower
Singapore 189352

Pulse North Asia

1F., No.111 Xiyuan Rd
Zhongli City
Taoyuan City 32057
Taiwan (R.O.C)

Tel: 858 674 8100
Fax: 858 674 8262

Tel: 49 2354 777 100
Fax: 49 2354 777 168

Tel: 86 755 33966678
Fax: 86 755 33966700

Tel: 86 21 62787060
Fax: 86 2162786973

Tel: 65 6287 8998
Fax: 65 6280 0080

Tel: 886 3 4356768
Fax: 886 3 4356820

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners. © Copyright, 2019. Pulse Electronics, Inc. All rights reserved.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9