Revision 1.4

Broadband PLC Transformers

devolo
The Network Innovation

Broadband PLC Transformers:

devolo P/N	Model	Rev.	Turn Ratio PL:RX:TX	Overvoltage Category	Hi-Pot Test	Footprint	MOQ
81752	TMS61518CS (Tray)	F	1:1:1	II	3 kVac	SMD	567
83369	TMS61518CS (Tape & Reel)	F	1:1:1	II	3 kVac	SMD	1000
81025	TMS61088CT	D	1:1:1	II	3 kVac	PTH	160
82033	UTB01808S-A	A0	3:3:1	II	3.75 kVac	SMD	600
82977	UT11359	A0	1:5:4	II	3.75 kVac	PTH	2288
81246	TMS61290CT	C	1:1:1	III	5.6 kVac	PTH	1440
81099	TMS61158CT	B	1:1:1	IV	6 kVdc (10 kVdc safety tested)	PTH	432

Operating temperature range for all transformers: -40°C – 105°C

Recommended transformers for **dLAN® Green PHY Module** applications:

Mains coupling: 82977, 82033

Control Pilot coupling: 81752 / 83369, 81025

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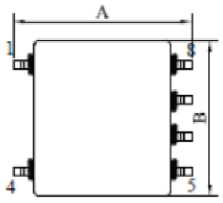
81752

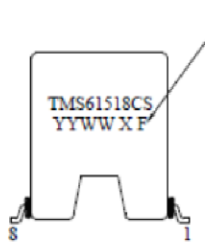
1. DIMENSIONS(UNIT:mm)



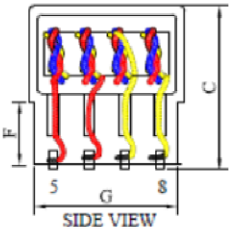
TOP VIEW

A: 12.5 ±0.5
B: 10.9 ±0.2
C: 11.5MAX
D: 2.5 ±0.3
E: 7.5 ±0.5
F: 4.4 ±0.2
G: 9.9 ±0.2

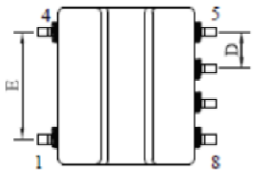
Marking:
YY: Year
WW: Week
X:Means as below content
A----Monday
B----Tuesday
C----Wednesday
D----Thursday
E----Friday
F----Saturday
G----Sunday



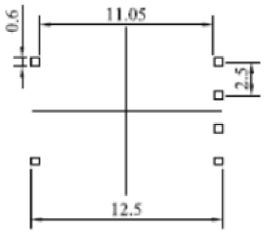
FRONT VIEW



SIDE VIEW

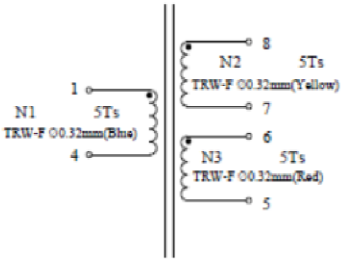


BOTTOM VIEW



PINS LAYOUT

2. SCHEMATIC:



• Mean start winding

3.ELECTRICAL CHARACTERISTIC: At 25°C

a).INDUCTANCE: @1KHz,1V
L(1-4): 10.9 uH ±30%
L(8-7): 10.9 uH ±30%
L(6-5): 10.9 uH ±30%

b).DC RESISTANCE:
DCR(1-4): 30.0 mOhm MAX
DCR(8-7): 30.0 mOhm MAX
DCR(6-5): 30.0 mOhm MAX

c).HI-POT:
PINS 1,4, TO 6,5,8,7: 5mA MAX @3.0KVac, 60sec, 60Hz

4. CONSTRUCTIONS:

NO.	Winding	Terminal	Wire	Turns	Remark
1	N1	1 - 4	TRW-F Ø0.32mm(Blue)	5Ts	Parallel Winding
2	N2	8 - 7	TRW-F Ø0.32mm(Yellow)	5Ts	
3	N3	6 - 5	TRW-F Ø0.32mm(Red)	5Ts	

5.MATERIAL LIST

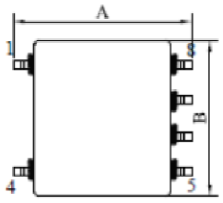
ITEM	DESCRIPTION	SUPPLIER	UL NO.
CORE	T9*5*3C TP5	TDG	N/A
WIRE	TRW-F Ø0.32mm(YELLOW)	GREAT LEOFLON	E211989
WIRE	TRW-F Ø0.32mm(BLUE)	GREAT LEOFLON	E211989
WIRE	TRW-F Ø0.32mm(RED)	GREAT LEOFLON	E211989
CASE	9.5*11*8.2 PM9630	SUMITOMO	E41429

6.NOTES:

Remove PIN2,3

83369

1. DIMENSIONS(UNIT:mm)



TOP VIEW

A: 12.5 ±0.5
B: 10.9 ±0.2
C: 11.5MAX
D: 2.5 ±0.3
E: 7.5 ±0.5
F: 4.4 ±0.2
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Marking:
YY: Year
WW: Week
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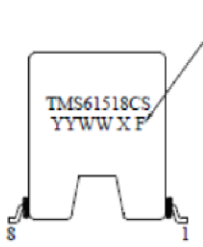
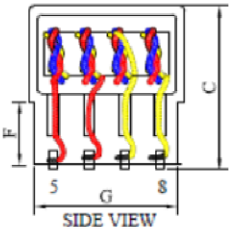
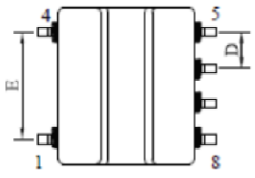


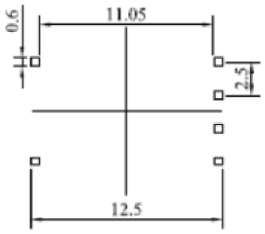
FRONT VIEW



SIDE VIEW

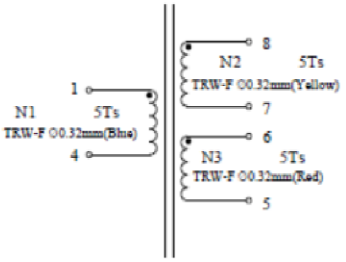


BOTTOM VIEW



PINS LAYOUT

2. SCHEMATIC:



• Mean start winding

3.ELECTRICAL CHARACTERISTIC: At 25°C

a).INDUCTANCE: @1KHz,1V
L(1-4): 10.9 uH ±30%
L(8-7): 10.9 uH ±30%
L(6-5): 10.9 uH ±30%

b).DC RESISTANCE:
DCR(1-4): 30.0 mOhm MAX
DCR(8-7): 30.0 mOhm MAX
DCR(6-5): 30.0 mOhm MAX

c).HI-POT:
PINS 1,4, TO 6,5,8,7: 5mA MAX @3.0KVac, 60sec, 60Hz

4. CONSTRUCTIONS:

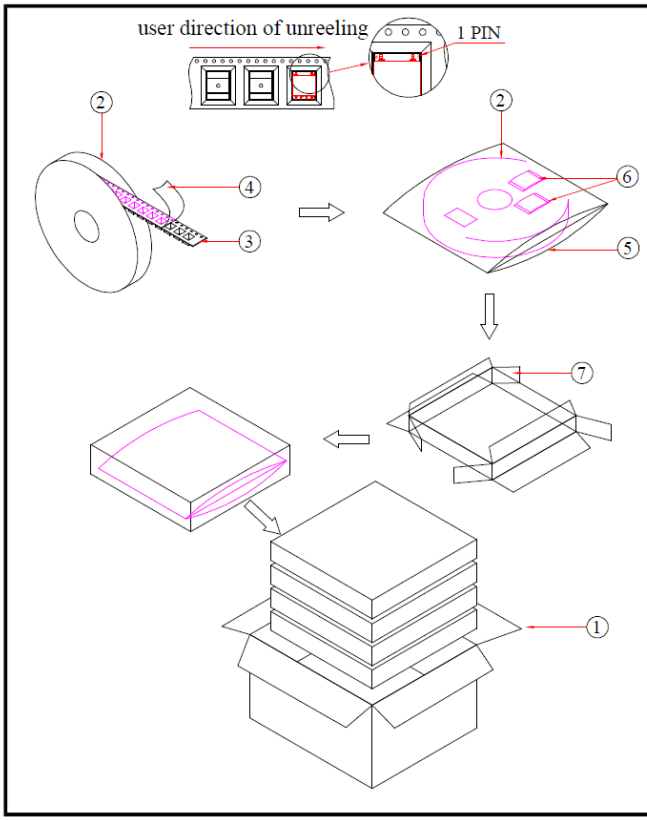
NO.	Winding	Terminal	Wire	Turns	Remark
1	N1	1 - 4	TRW-F Ø0.32mm(Blue)	5Ts	Parallel Winding
2	N2	8 - 7	TRW-F Ø0.32mm(Yellow)	5Ts	
3	N3	6 - 5	TRW-F Ø0.32mm(Red)	5Ts	

5.MATERIAL LIST

ITEM	DESCRIPTION	SUPPLIER	UL NO.
CORE	T9*5*3C TP5	TDG	N/A
WIRE	TRW-F Ø0.32mm(YELLOW)	GREAT LEOFLON	E211989
WIRE	TRW-F Ø0.32mm(BLUE)	GREAT LEOFLON	E211989
WIRE	TRW-F Ø0.32mm(RED)	GREAT LEOFLON	E211989
CASE	9.5*11*8.2 PM9630	SUMITOMO	E41429

6.NOTES:

Remove PIN2,3



REV.	ECO NO.	DESCRIPTION	DATE
A0	--	INITIAL RELEASE	07/05/2012

PACKING INSTRUCTION:
1.Put the products into the hole of carrier tape(S/N3) one by one, the first 10 holes are empty.
2.Paste with cover tape(S/N4). 250pcs/reel, the last 15pcs holes are empty.
3.Wrap 2Ts protect tape.
4.Put the reel full with products into foam bag(S/N5);and put two bags desiccant(S/N6).
5.Put foam bag with reel into inner box(S/N7);
6.Put 4 inner boxes into carton (S/N1), 1000pcs/carton.

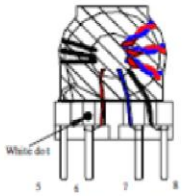
NOTES:
Fill with EPE or Polyfoam for redundant space.

7	INNER BOX	5001004000	A4:335*335*32mm(内尺寸):K3K	1/250
6	DESICCANT	5014015000	---	2/250
5	FOAM BAG	5006001000	350*400mm	1/250
4	COVER TAPE	5008003000	W:21.3mm	5.5/250
3	CARRIER TAPE	5009084000	TMS61518CS-1-F W=24 P=20	5.5/250
2	REEL	5007003000	330x24mm	1/250
1	CARTON	5001030000	C11:346*346*180mm	1/1000

81025

SPECIFICATION

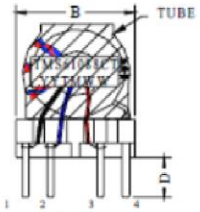
1. DIMENSIONS(UNIT:mm)



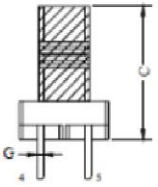
BACK VIEW

A=9.0 MAX
B=16.0 MAX
C=18.0 MAX
D=3.50 ±0.5
E=8.00 ±0.3
F=5.08 ±0.3
G=Ø0.50 ±0.1
H=2.54 ±0.3

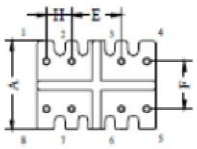
Marking:TMS61088CT
YYTMWW
YY:YEAR
WW:WEEK
TM:Transtek magnetics



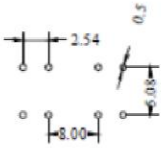
FRONT VIEW



SIDE VIEW

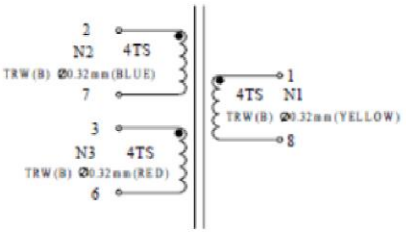


BOTTOM VIEW



PINS LAYOUT

2. SCHEMATIC:



● Mean start winding

3.ELECTRICAL CHARACTERISTIC: At 25°C

a).INDUCTANCE: @1KHz,1V
L(1-8): 7.0 uH ±30%
L(2-7): 7.0 uH ±30%
L(3-6): 7.0 uH ±30%
b).DC RESISTANCE:
DCR(1-8): 30.0 mOhm MAX
DCR(2-7): 30.0 mOhm MAX
DCR(3-6): 30.0 mOhm MAX
c).HI-POT:
WDGS TO CORE: 5mA MAX @3.0KVac, 1minute 60Hz
PINS 1,2,7,8 TO 3,6: 5mA MAX @3.0KVac, 1minute 60Hz

4. CONSTRUCTIONS:

NO.	Winding	Terminal	Wire	Turns	Remark
1	N1	1-8	TRW(B) Ø0.32mm(YELLOW)	4TS	
2	N2	2-7	TRW(B) Ø0.32mm(BLUE)	4TS	Parallel Winding
3	N3	3-6	TRW(B) Ø0.32mm(RED)	4TS	

5.MATERIAL LIST

ITEM	DESCRIPTION	SUPPLIER
CORE	T9*5*3C TP5	TDG
WIRE	TRW(B) Ø0.32mm(YELLOW)	Great holding
WIRE	TRW(B) Ø0.32mm(BLUE)	Great holding
WIRE	TRW(B) Ø0.32mm(RED)	Great holding
TUBE	heat shrink 11.0mm 125℃ black	CHANG BAO
BASE	VP-BASE-001 T375J	CHUANCHUN

82033

Material List:

1. CORE: FERRITE CORE

2. CASE: DAP AM-113, UL FILE NO.E41429
   (SUMITOMO BAKELITE CO., LTD.)
   OR: PHENOLIC PM-9630, UL FILE NO. E41429
   (SUMITOMO BAKELITE CO., LTD.)

3. WIRE: POLYURETHANE ENAMELED COPPER WIRE CLASS 180℃/SFHW,
   UL FILE NO.E174837
   (JUNG SHING WIRE CO., LTD.)

4. WIRE: CAT. NO. UTWA-3X FOR REINFORCED INSULATION, RATED 180°C (CLASS H),
   600 VOLTS PEAK FOR INFORMATION TECHNOLOGY, UL FILE NO.E211989
   (GREAT LEOFLON INDUSTRIAL CO., LTD.)

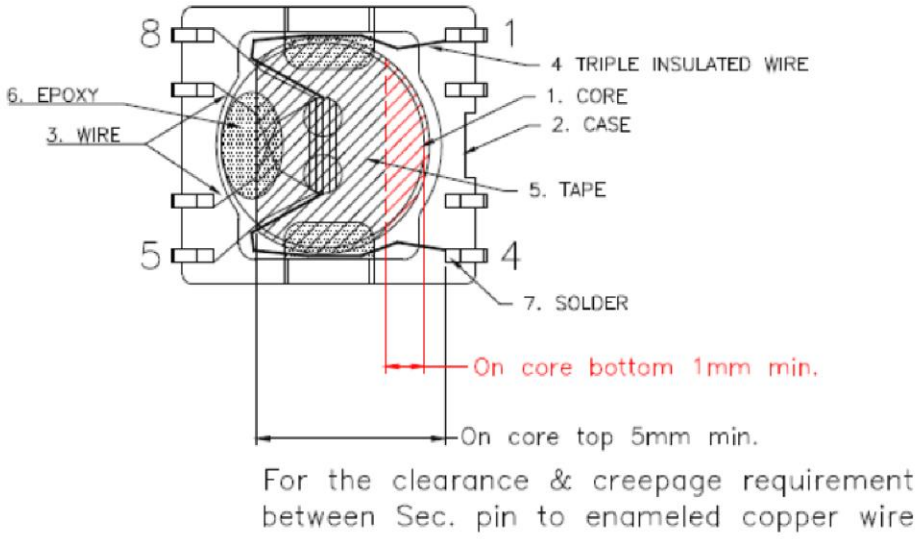
5. TAPE: POLYESTER FILM INSULATING TAPE, #74, CTI GROUP I, UL FILE NO.E17385
   (3M CO., LTD.)

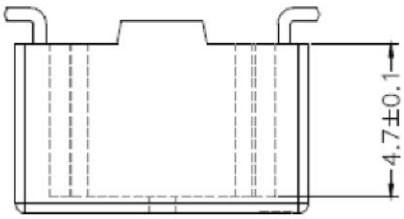
6. EPOXY: 471-5LL-HV , UL FILE NO. E100866
   (ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC)

7. SOLDER: Sn/Ag/Cu

8. INK: 112, WHITE
   (TSAUI MINING INDUSTRIAL CO., LTD.)

Constructions:





Electrical specification at 25°C:

1. TURN RATIO: 1:1, 1-4/8-7, 50KHz, 1V, 2.0%.
   3:1, 1-4/6-5, 50KHz, 1V, 2.0%.

2. INDUCTANCE: 14μH min, 1-4, 10KHz, 100mV, Ls.

3. LEAKAGE INDUCTANCE: 225nH max, 1-4 (tie 8-7-6-5), 1MHz, 100mV, Ls.

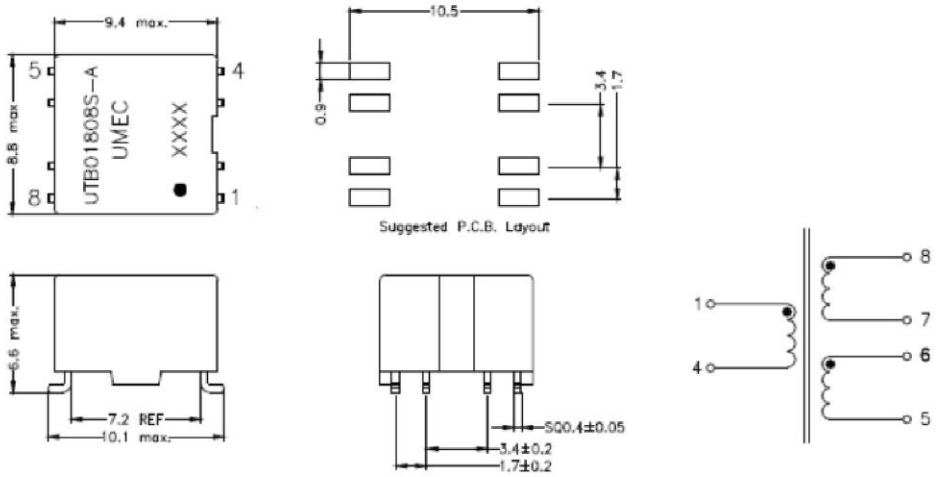
4. INTERWINDING CAPACITANCE: 6pF max, 1-8 (tie 7-6), 100KHz, 100mV, Cs.

5. DC RESISTANCE : 0.35Ω max., 1-4.
   0.30Ω max., 8-7.
   0.15Ω max., 6-5.

6. HI-POT: 3750VAC, 1-8 (tie 7-6), 1s, 500uA max.

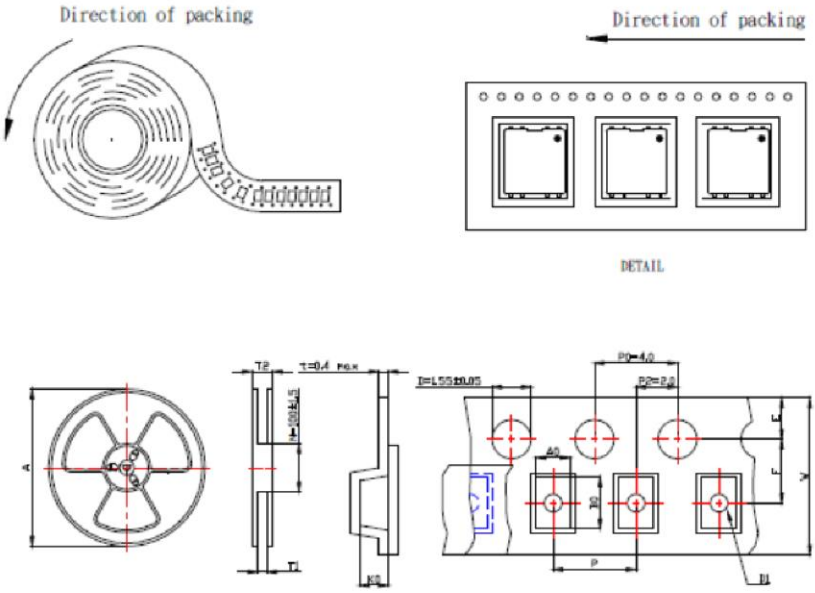
7. SAFETY: COMPLIES WITH IEC 60950-1, EN 60950-1, UL 60950-1, CAN/CSA-22.2 NO. 60950-1, AND AS/NZS 60950.1 REINFORCED INSULATION REQUIREMENTS AT WORKING VOLTAGES UP TO 250V.

Schematic diagram & Dimensions: (Unit: mm)



Note: For RoHS compliant products:
Date Code: XXXXCG OF CHINA MANUFACTURE, XXXXG OF TAIWAN MANUFACTURE,
Suffix to "G" for Green Product.

Transformers Packaging Information Tape And Reel : TBD



	CARRIER TAPE								PLASTIC REEL			PARTS PER REEL
ITEM NO.	W	A_0	B_0	K_0	E	F	P	D_1	A	T_1	T_2	
K8S-8P	24.0	8.8	11.0	6.55	1.75	11.5	16.0	1.5	330	25.4	30.4	600

Unit:mm

per weight: approx. 0.88g

NOTE:The packaging boxes would be marked with a green label that indicates that no lead (Pb) is present in the components and components are applicable to Lead-Free process.

Green Product

82977

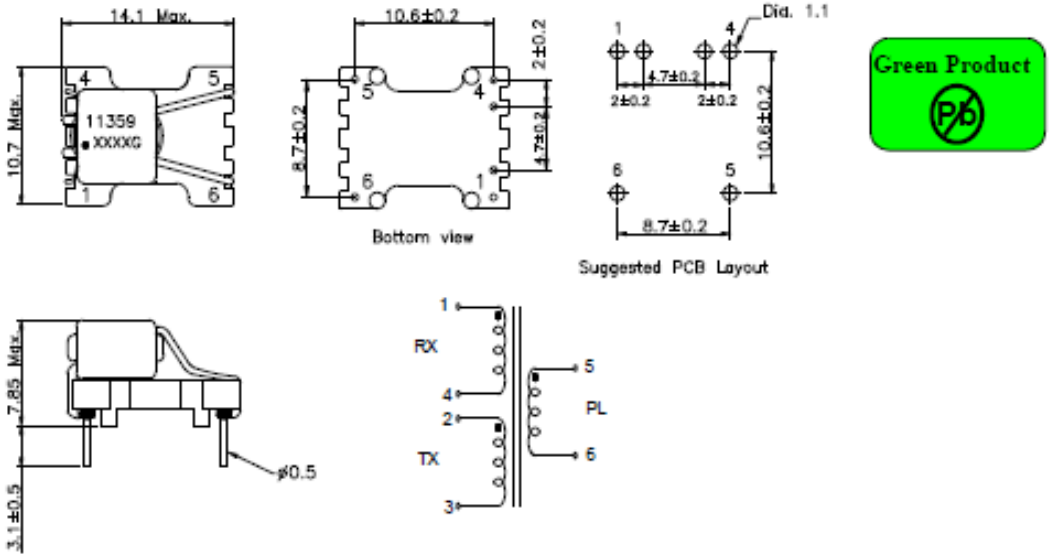
UM MODEL NO.:	SPECIFICATIONS	REV.	
UT11359	PLC Coupling Transformer For Qualcomm #QCA7000 (Doc. No.20005422)	A0	2012/16

Electrical specification at 25°C:

1. TURNS RATIO & POLARITY	1:5:4 ±5% ,at 50KHz 100mV, PIN(2-3):(1-4):(5-6)
2. TX INDUCTANCE	1.3uH Typ., 2MHz 100mV, PIN(2-3)
RX INDUCTANCE	34.7uH Typ., 2MHz 100mV, PIN(1-4)
PL INDUCTANCE	22.2uH Typ., 2MHz 100mV, PIN(5-6)
3. TX LEAKAGE INDUCTANCE	15nH Typ., 2MHz 100mV, PIN(2-3),(5-6)shorted
4. FREQUENCY RANGE	2 to 30 MHz
5. HI-POT	3750Vac, 2s, Leakage current 1mA max., Between Windings
6. SAFETY	Complies with IEC 60950-1, EN 60950-1, UL 60950-1, CAN/CSA-22.2 No. 60950-1, and AS/NZS 60950.1 Reinforced Insulation requirements at working voltages up to 250V.

ALL ELECTRICAL SPECIFICATIONS ARE AT 25°C UNLESS NOTED OTHERWISE.

Schematic diagram & Dimension:



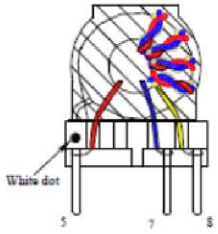
NOTE :1. For RoHS compliant products:
a.) Ordering code (Manufacturer Part Number): TG-UT11359
b.) Date Code suffix to "G" (xxxxG).
c.) Solder: Sn/Cu
2. Specifications are subject to change without prior notice.

UNIT : mm

Tolerances: ±0.25mm

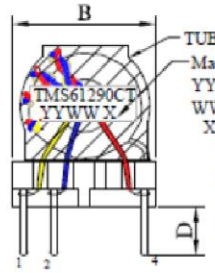
81246

1. DIMENSIONS(UNIT:mm)

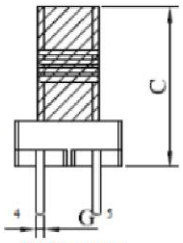


BACK VIEW

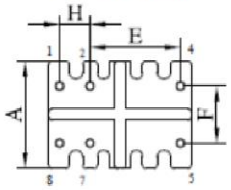
A: 9.0 MAX
B: 16.0 MAX
C: 18.0 MAX
D: 3.50 ±0.5
E: 10.54 ±0.5
F: 5.08 ±0.3
G: Ø0.50 ±0.1
H: 2.54 ±0.3



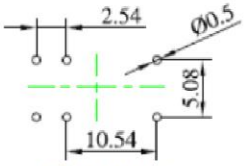
FRONT VIEW



SIDE VIEW

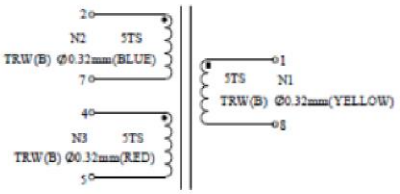


BOTTOM VIEW



PINS LAYOUT

2. SCHEMATIC:



● Mean start winding

3.ELECTRICAL CHARACTERISTIC: At 25°C

a).INDUCTANCE: @1KHz,1V
L(1-8): 10.9 uH ±30%
L(2-7): 10.9 uH ±30%
L(4-5): 10.9 uH ±30%
b).DC RESISTANCE:
DCR(1-8): 30.0 mOhm MAX
DCR(2-7): 30.0 mOhm MAX
DCR(4-5): 30.0 mOhm MAX
c).HI-POT:
WDGS TO CORE: 5mA MAX @3.0KVac, 60sec,60Hz
PINS 1,2,7,8 TO 4,5: 5mA MAX @5.6KVac,60sec, 60Hz

4. CONSTRUCTIONS:

NO.	Winding	Terminal	Wire	Turns	Remark
1	N1	1 -8	TRW(B) Ø0.32mm(YELLOW)	5TS	Parallel Winding
2	N2	2 - 7	TRW(B) Ø0.32mm(BLUE)	5TS	
3	N3	4 - 5	TRW(B) Ø0.32mm(RED)	5TS	

5.MATERIAL LIST

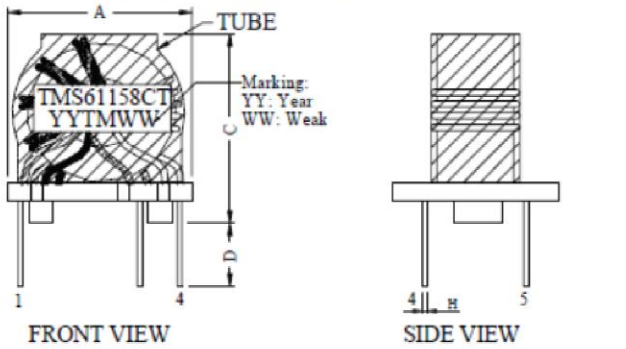
ITEM	DESCRIPTION	SUPPLIER	UL NO
CORE	T9*5*3C TP5	TDG	N/A
WIRE	TRW(B)ø 0.32mm(YELLOW)	Great holding	E211989
WIRE	TRW(B)ø 0.32mm(BLUE)	Great holding	E211989
WIRE	TRW(B)ø 0.32mm(RED)	Great holding	E211989
TUBE	heat shrink 11.0mm 125'C black	CHANGYUAN	E180908
BASE	VP-BASE-001 T375J	Chang Chun	E59481

6.NOTES:

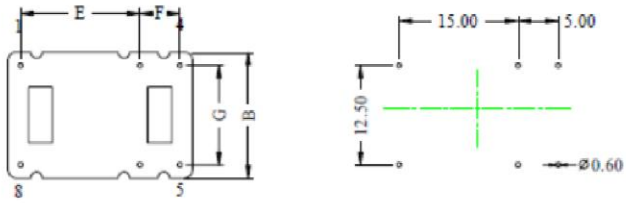
Removed pin3 and pin6.

81099

1.ASSEMBLY DRAWING:(Unit mm)



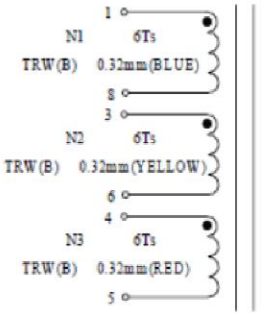
FRONT VIEW SIDE VIEW



BOTTOM VIEW PIN LAYOUT

A= 23.5 MAX
B= 16.0 MAX
C= 25.5 MAX
D= 3.5 ±0.5
E= 15.0 ±0.5
F= 5.0 ±0.5
G= 12.5 ±0.5
H= ☐0.6 ±0.08

2. SCHEMATIC:



All three wires have to be twisted together for the 6 turns.

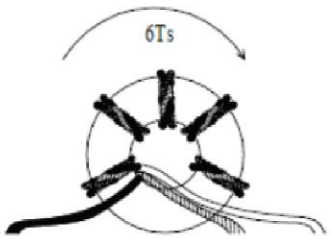
3.ELECTRICAL CHARACTERISTIC: At 25°C

a).INDUCTANCE: @1KHz,1V
L(1-8): 16.5 uH ±30%
L(3-6): 16.5 uH ±30%
L(4-5): 16.5 uH ±30%

b).DC RESISTANCE:
DCR(1-8): 41.0 mOhm MAX
DCR(3-6): 41.0 mOhm MAX
DCR(4-5): 41.0 mOhm MAX

c).HI-POT:
COIL TO CORE: 5mA MAX @6.0KVdc,1minute, 60Hz

4. CONSTRUCTIONS:



5.MATERIAL LIST

ITEM	DESCRIPTION	SUPPLIER	UL NO.
CORE	T9*5*3C TP5 ui1400±20%	TDG	N/A
BASE	23.2*15.8 T375J 6PINS	HOLD	E54705
WIRE	Ø0.32mm TRW(B) BLUE	GREAT LEOFLON	E211989
WIRE	Ø 0.32mm TRW(B) YELLOW	GREAT LEOFLON	E211989
WIRE	Ø0.32mm TRW(B) RED	GREAT LEOFLON	E211989
TUBE	heat shrink tube #11	GREAT HOLDING	E156256

6.NOTES: