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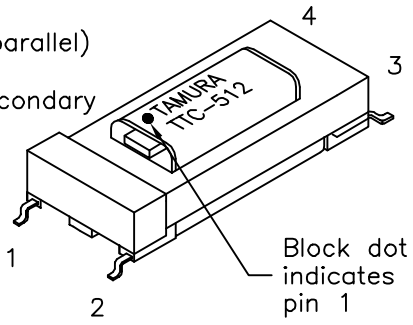
TELECOMMUNICATION DRY COUPLING SURFACE MOUNT TRANSFORMER

MODEL NUMBER **TTC–512**

A. Electrical specifications (@ 25° C)

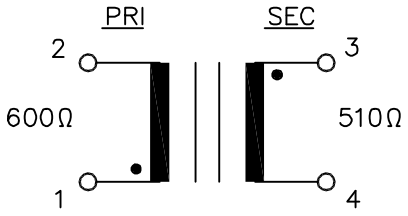
1. Pri source impedance; 600Ω
2. Sec load impedance; 510Ω
3. Maximum Power; +3.5dBm
4. Frequency response; ±0.5dB @ 300Hz, 1.0Vrms (1KHz as ref. frequency)
   ±0.3dB @ 3.5KHz, 1.0Vrms (1KHz as ref. frequency)
5. Return loss; 16dB MIN @ 300Hz to 3.5KHz, 1.0Vrms
6. Insertion loss; 1.25dB ±0.25dB @ 1KHz, 1.0Vrms
7. Longitudinal balance;
   60dB MIN @ 300Hz to 3.5KHz, 1.0Vrms
8. Inductance; 1.2H MIN @ 1KHz, 1Vrms (Lp, inductance in parallel)
   Measured (1–2)
9. Impedance; 600Ω ±10% @ 1KHz, 1Vrms, load 510Ω at secondary
   Measured (1–2)
10. DC resistance;
    (1–2)= 58Ω ±15%
    (3–4)= 70Ω ±15%
11. Turns ratio;
    (1–2) : (3–4) = 1 : 1.00 ±2%
12. Dielectric strength;
    1875Vrms 1 second @ Pri to Sec, Pri to Core
    625Vrms 1 second @ Sec to Core
13. Operating Temperature; –10 ~ +60°C
14. Storage Temperature; –20 ~ +65°C

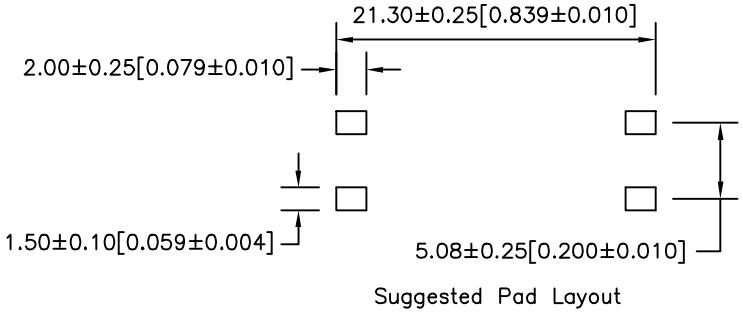


B. Marking; TTC–512, TAMURA, date code and country of origin

C. Safety; Complies with UL1950 3rd Edition, UL60950, EN60950

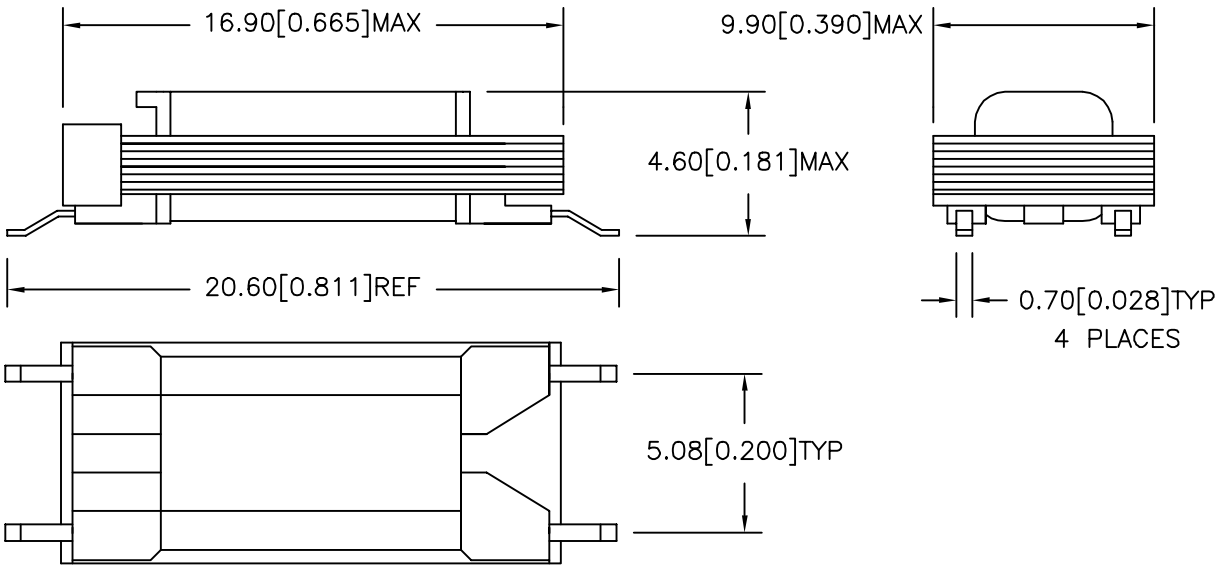
D. Schematic diagram;





Suggested Pad Layout

E. Mechanical Specifications;
All dimensions shown are nominal unless otherwise specified



PREPARED BY: D. Rund				
ENGINEER: M. Pitchai	DRAWING CONTROL NO. P–A1–12972 ACAD\TTC\A1129721.DWG	REV A	MODEL DESCRIPTION TELECOMMUNICATION SURFACE MOUNT DRY COUPLING TRANSFORMER	MODEL SPECIFICATION TTC–512
QUALITY CONTROL: J. Coleman	CONTENTS OF THIS DRAWING ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE		TAMURA CORPORATION OF AMERICA 43352 BUSINESS PARK DRIVE, TEMECULA, CA. 92590–6624 (909) 699–1270 FAX 9096769482	DIM: mm(In) SCL: 4/1 SH: 1 OF 4
APPROVED: Y. Sekiguchi	PROPRIETARY NOTICE: THIS DRAWING PRINT OR DOCUMENT AND SUBJECT MATTER DISCLOSED HEREIN ARE PROPRIETARY ITEMS TO WHICH TAMURA RETAINS THE EXCLUSIVE RIGHT OF DISSEMINATION, REPRODUCTION, MANUFACTURE AND SALE. THIS DRAWING, PRINT OR DOCUMENT IS SUBMITTED IN CONFIDENCE FOR CONSIDERATION BY THE RECIPIENT ALONE UNLESS PERMISSION FOR FURTHER DISCLOSURE IS EXPRESSLY GRANTED IN WRITING.			

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F. Reliability Test;

No.	Item	Condition	Specifications
1	Solderbility	Temperature: 230° ± 5°C Solder time: 3 ± 0.5 seconds Solder: H60A or H63A Flux: 75% Methanol and 25% Rosin	After that the sample shall be covered by solder uniformly at more than 90% of circumference.
2	Resistance to Soldering heat	Temperature: 260° ± 5°C Solder time: 10 ± 1 seconds Solder: H60A or H63A Flux: 75% Methanol and 25% Rosin	Sample shall not show any unusual appearance.
3	Resistance to soldering heat (hand soldering)	Temperature: 350° ± 10°C Solder time: 3 ± 1 seconds	Sample shall not show any unusual appearance.
4	Thermal cycle test	JIS C 0025 10 cycles Temperature -10°C 30 min 25°C 5 min 70°C 30 min	After that sample shall be replaced in normal ambient for 60 min., it shall not show any unusual appearance and should meet the requirement of dielectric strength and insulation resistance no less than 10MΩ
5	Heat test	JIS C 0021 Temperature: 100°C Time: 96 hours	After that sample shall be replaced in normal ambient for 60 min., it shall not show any unusual appearance and should meet the requirement of dielectric strength and insulation resistance no less than 10MΩ
6	Cold test	JIS C 0020 Temperature: -25°C Time: 96 hours	After that sample shall be replaced in normal ambient for 60 min., it shall not show any unusual appearance and should meet the requirement of dielectric strength and insulation resistanc e no less than 10MΩ
7	Humidity Test	JIS C 0022 Temperature: 40°C Humidity: 90~95% Time: 96 hours	After that sample shall be replaced in normal ambient for 60 min., it shall not show any unusual appearance and should meet the requirement of dielectric strength and insulation resistance no less than 10MΩ
8	Vibration test	JIS C 0040 Frequency: 10~55Hz Amplitude (total excursion) 1.5mm Transverse time: 5 min. Direction Time: XYZ each 50 min.	After that sample shall be replaced in normal ambient for 60 min., it shall not show any unusual appearance and should meet the requirement of dielectric strength and insulation resistance no less than 10MΩ
9	Terminal strength	JIS C 0051.2.5 5N 10 seconds	No breakage of magnet wire, etc.

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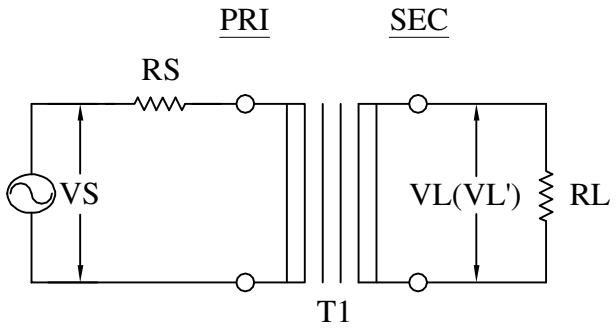
G. Test Methods;

1. Frequency Response:

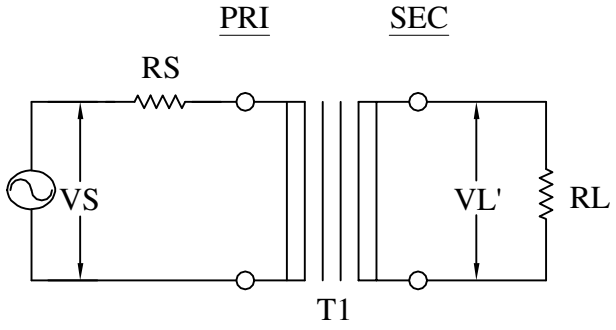
$$FR=20 \text{ LOG } \left|\frac{VL}{VL'}\right| \text{ (dB)}$$



VS: Constant input voltage (V)
VL: Output voltage at any other frequency (V)
VL: Output voltage at reference frequency, 1KHz (V)
RS: Primary source impedance (Ω)
RL: Secondary load impedance (Ω)
T1: Transformer under test

2. Insertion Loss:

$$IL=10 \text{ LOG } \left|\frac{VS^2 \text{ x } RL}{4\ VL^2 \text{ x } RS}\right| \text{ (dB)}$$



VS: Input voltage (V)
VL: Output voltage at frequency, 1KHz (V)
RS: Primary source impedance (Ω)
RL: Secondary load impedance (Ω)
T1: Transformer under test

DRAWING CONTROL NO. P–A1–12972 ACAD\TTC\A1129723.DWG	REV A	MODEL DESCRIPTION TELECOMMUNICATION SURFACE MOUNT DRY COUPLING TRANSFORMER	MODEL SPECIFICATION TTC–512	
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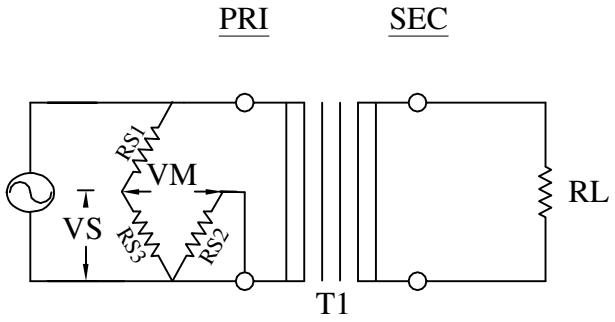
G. Test Methods;

3. Return Loss:

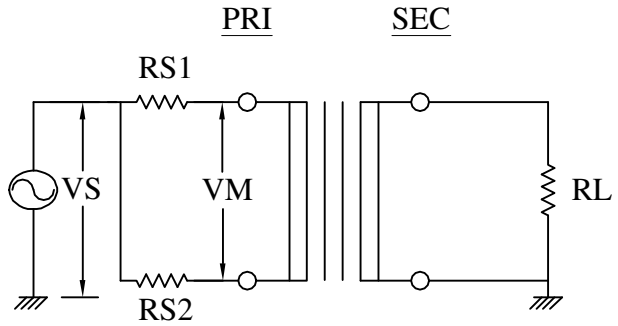
$$RL=20 \text{ LOG} \left| \frac{VS}{VM} \right| \text{ (dB)}$$



VS: Divided input voltage (V)
VM: Unbalanced voltage (V)
RS1, RS2, RS3: Primary source impedance (Ω)
RL: Secondary load impedance (Ω)
T1: Transformer under test

4. Longitudinal Balance:

$$LB=20 \text{ LOG} \left| \frac{VS}{VM} \right| \text{ (dB)}$$



VS: Input voltage (V)
VM: Longitudinal unbalanced voltage (V)
RS1, RS2: Half of primary source impedance (Ω)
RL: Secondary source impedance (Ω)
T1: Transformer under test

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