Hammond Mfg. Co. Ltd., Electronics Division

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1140-LU-D

CHASSIS MOUNT LINE OUTPUT TRANSFORMER

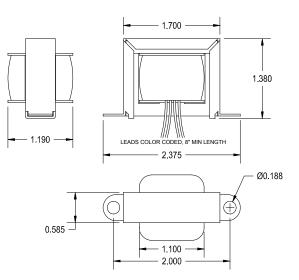
This transformer is designed with bi-filar windings and a 49% Ni core, which gives low distortion levels and good output levels.

It can drive 600Ω loads up to +24dbu @ 20Hz.

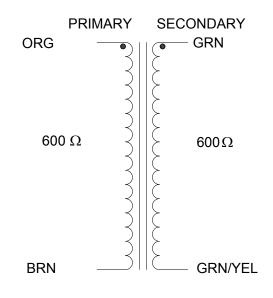
Due to the properties of the Ni core, the drive signal should have no DC component and the source impedance should be as low as possible.

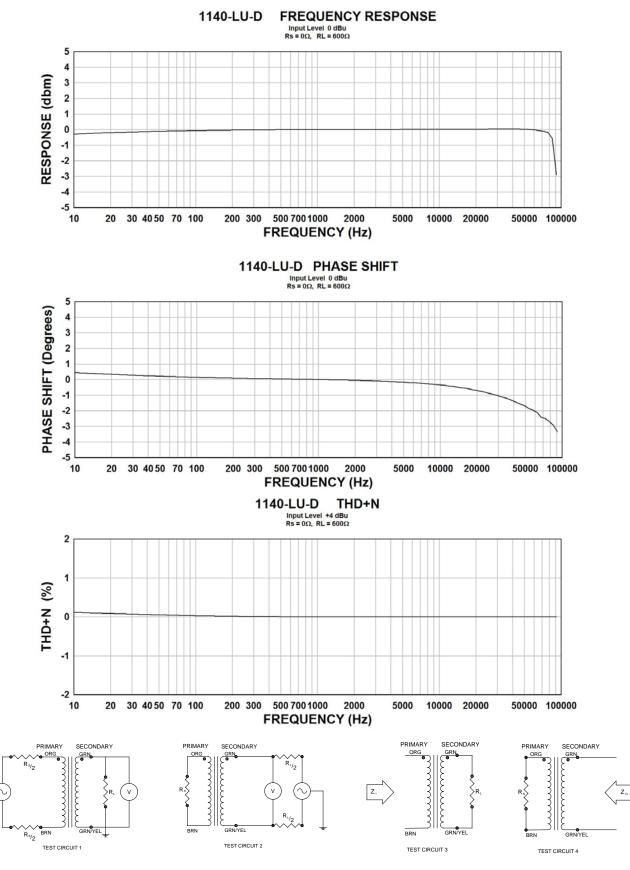
ELECTRICAL SPECIFICATIONS

| CharacteristicConditionsTypicalInput Impedance600 ΩOutput Impedance1kHz 0dbuPrimary Input Impedance1kHz 0dbuBecondary Output Impedance1kHz 0dbuMaximum input Level20Hz RL = 600ΩPrimary200°C40 ΩSecondary220°CPrimary220°C40 ΩSecondary220°CPrimary220°C40 ΩSecondary220°CPrequency Response20 kHz, 0 dbu, Test Circuit 3Turns ratio1:1Common Mode Rejection Level60 Hz, 0 dbu, Test Circuit 2THD1kHz 4 dbu Test Circuit 10.001%Phase Shift20 kHz Circuit 1CapacitancePrimary to Shield and CaseCapacitancePrimary to Shield and CaseDielectric Strength250 Vrms | | | |
|--|---------------------|-----------------------------------|----------------|
| Output Impedance600 ΩPrimary Input Impedance0 1kHz 0dbu Test Circuit 3680ΩSecondary Output Impedance0 1kHz 0dbu Test Circuit 480ΩMaximum input Level Primary0 20Hz RL = 600Ω+24 dbuDCR020°C40 ΩSecondary0 20°C40 ΩSecondary0 20°C40 ΩSecondary0 20°C40 ΩFrequency Response0 20 kHz, 0 dbu, Test Circuit 3-0.18dbTurns ratio1:1105dbCommon Mode Rejection Level60 Hz, 0 dbu, Test Circuit 2105dbTHD0 1kHz 4 dbu Test Circuit 20.001%THD0 20 Hz Rest Circuit 10.08%Phase Shift0 20 Hz Test Circuit 10.23°CapacitancePrimary to Shield and Case20nfSecondary to Shield and Case50pf | Characteristic | <u>Conditions</u> | <u>Typical</u> |
| Primary Input Impedance0 1kHz 0dbu Test Circuit 3680ΩSecondary Output Impedance0 1kHz 0dbu Test Circuit 480ΩMaximum input Level0 20Hz RL = 600Ω+24 dbuDCR00Primary0 20°C40 ΩSecondary0 20°C40 ΩFrequency Response0 20 Hz, 0 dbu, Test Circuit 3-0.18dbTurns ratio1:10.03dbCommon Mode Rejection Level60 Hz, 0 dbu, Test Circuit 2105dbTHD0 4kHz 4 dbu Test Circuit 10.001%THD0 20 Hz 20 Hz0.23°Capacitance0 20 kHz Primary 10 Shield and Case-0.7°CapacitancePrimary to Shield And Case20nf | Input Impedance | | 600 Ω |
| ImpedanceTest Circuit 3680ΩSecondary Output Impedance@ 1kHz Odbu Test Circuit 480ΩMaximum input Level@ 20Hz RL = 600Ω+24 dbuDCRPrimary@ 20°C40 ΩSecondary@ 20 Hz, 0 dbu, Test Circuit 3-0.18dbFrequency Response@ 20 kHz, 0 dbu, Test Circuit 3+0.03dbTurns ratio1:1Common Mode Rejection Level60 Hz, 0 dbu, Test Circuit 2105dbTHD@ 60 Hz, 0 dbu, Test Circuit 175dbTHD@ 20Hz 4 dbu Test Circuit 10.001%@ 20 Hz Test Circuit 10.23°THD@ 20 Hz Test Circuit 10.23°CapacitancePrimary to Shield and Case20nfSecondary to Shield and Case50pf | Output Impedance | | 600 Ω |
| ImpedanceTest Circuit 480ΩMaximum input Level@ 20Hz RL = 600Ω+24 dbuDCRPrimary@20°C40 ΩSecondary@20°C40 ΩFrequency Response@ 20 Hz, 0 dbu, Test Circuit 3-0.18db Common Mode Rejection Level@ 60 Hz, 0 dbu, Test Circuit 2+0.03dbTHD@ 60 Hz, 0 dbu, Test Circuit 2105dbTHD@ 1kHz 4 dbu Test Circuit 10.001%Phase Shift@ 20 kHz Circuit 10.23°CapacitancePrimary to Shield and Case20nfSecondary to Shield and Case50pf | Impedance | @ 1kHz 0dbu Test Circuit 3 | 680Ω |
| Maximum input Level $RL = 600\Omega$ 124 dbdDCR $Q20^{\circ}C$ 40Ω Secondary $Q20^{\circ}C$ 40Ω Frequency Response $Q20 Hz, 0 dbu,$ Test Circuit 3 $-0.18 db$ $Q20 KHz, 0 dbu,$ Test Circuit 3 $-0.18 db$ Turns ratio $020 KHz, 0 dbu,$ Test Circuit 2 $+0.03 db$ Turns ratio $1:1$ Common Mode | | | 80Ω |
| Primary@20°C40 ΩSecondary@20°C40 ΩFrequency Response@ 20 Hz, 0 dbu, Test Circuit 3-0.18db@ 20 kHz, 0 dbu, Test Circuit 3+0.03dbTurns ratio1:1Common Mode Rejection Level@ 60 Hz, 0 dbu, Test Circuit 2105dbTHD@ 1kHz 4 dbu Test Circuit 10.001%@ 20 Hz Rest Circuit 10.001%0.08%THD@ 20 Hz Test Circuit 10.23°CapacitancePrimary to Shield and Case20nfSecondary to Shield and Case50pf | Maximum input Level | | +24 dbu |
| Secondary@20°C40 ΩFrequency Response@ 20 Hz, 0 dbu, Test Circuit 3-0.18db@ 20 kHz, 0 dbu, Test Circuit 3+0.03dbTurns ratio1:1Common Mode Rejection Level@ 60 Hz, 0 dbu, Test Circuit 2105dbTHD@ 60 Hz, 0 dbu, Test Circuit 275dbTHD@ 1kHz 4 dbu Test Circuit 10.001%Phase Shift@ 20 Hz Test Circuit 10.23°CapacitancePrimary to Shield and Case20nfSecondary to Shield and Case50pf | DCR | | |
| Frequency Response@ 20 Hz, 0 dbu, Test Circuit 3-0.18db@ 20 kHz, 0 dbu, Test Circuit 3+0.03dbTurns ratio1:1Common Mode Rejection Level@ 60 Hz, 0 dbu, Test Circuit 2105db3kHz, 0 dbu, Test Circuit 275dbTHD@ 1kHz 4 dbu Test Circuit 10.001%@ 20Hz 4 dbu Test Circuit 10.08%Phase Shift@ 20 Hz Test Circuit 10.23°CapacitancePrimary to Shield and Case20nfSecondary to Shield and Case50pf | Primary | @20°C | 40 Ω |
| Trest Circuit 3 0.1000 @ 20 kHz, 0 dbu, Test Circuit 3 +0.03db Turns ratio 1:1 Common Mode Rejection Level @ 60 Hz, 0 dbu, Test Circuit 2 105db 3kHz, 0 dbu, Test Circuit 2 75db THD @ 1kHz 4 dbu Test Circuit 1 0.001% @ 20Hz 4 dbu Test Circuit 1 0.08% Phase Shift @ 20 Hz Test Circuit 1 0.23° @ 20 kHz -0.7° Test Circuit 1 -0.7° Capacitance Primary to Shield and Case 20nf Secondary to Shield and Case 50pf | Secondary | @20°C | 40 Ω |
| Turns ratio 10.0000 Common Mode Rejection Level @ 60 Hz, 0 dbu, Test Circuit 2 105db 3kHz, 0 dbu, Test Circuit 2 75db THD @ 1kHz 4 dbu 0.001% 0.001% @ 20Hz 4 dbu Test Circuit 1 0.08% Phase Shift @ 20 Hz Test Circuit 1 0.23° @ 20 kHz Test Circuit 1 -0.7° Primary to Shield and Case 20nf Secondary to Shield and Case 50pf | Frequency Response | | -0.18db |
| Common Mode Rejection Level@ 60 Hz, 0 dbu, Test Circuit 2105db3kHz, 0 dbu, Test Circuit 275dbTHD@ 1kHz 4 dbu Test Circuit 10.001%@ 20Hz 4 dbu Test Circuit 10.08%Phase Shift@ 20 Hz Test Circuit 10.23°@ 20 kHz Test Circuit 1-0.7°Phase ShiftPrimary to Shield and Case20nfSecondary to Shield and Case50pf | | | +0.03db |
| Rejection Level Test Circuit 2 105db 3kHz, 0 dbu, Test Circuit 2 75db THD 0 1kHz 4 dbu Test Circuit 1 0.001% 0 20Hz 4 dbu Test Circuit 1 0.08% Phase Shift 0 20 Hz Test Circuit 1 0.23° 0 20 kHz Test Circuit 1 -0.7° Primary to Shield and Case 20nf Secondary to Shield and Case 50pf | Turns ratio | | 1:1 |
| Test Circuit 2 1 / 300 THD @ 1kHz 4 dbu Test Circuit 1 0.001% @ 20Hz 4 dbu Test Circuit 1 0.08% Phase Shift @ 20 Hz Test Circuit 1 0.23° @ 20 kHz Test Circuit 1 -0.7° Capacitance Primary to Shield and Case 20nf Secondary to Shield and Case 50pf | | @ 60 Hz, 0 dbu, Test Circuit 2 | 105db |
| THD Test Circuit 1 0.0017% @ 20Hz 4 dbu 0.08% Phase Shift @ 20 Hz 0.23° @ 20 kHz -0.7° Test Circuit 1 -0.7° Capacitance Primary to Shield and Case Secondary to Shield and Case 50pf | | Test Circuit 2 | 75db |
| Test Circuit 1 0.00 /// Phase Shift @ 20 Hz Test Circuit 1 0.23° @ 20 kHz Test Circuit 1 -0.7° Capacitance Primary to Shield and Case 20nf Secondary to Shield and Case 50pf | THD | | 0.001% |
| Trase Shift Test Circuit 1 0.23 @ 20 kHz -0.7° Test Circuit 1 -0.7° Capacitance Primary to Shield and Case Secondary to Shield and Case 50pf | | | 0.08% |
| Test Circuit 1 -0.7 Capacitance Primary to Shield and Case 20nf Secondary to Shield and Case 50pf | Phase Shift | | 0.23° |
| Case 2011 Secondary to Shield 50pf | | Test Circuit 1 | -0.7° |
| and Case 5001 | Capacitance | | 20nf |
| Dielectric Strength 250 Vrms | | | 50pf |
| | Dielectric Strength | | 250 Vrms |









Measurement instruments Hp4192a impedance analyzer Hp3456a DVM Keithley 2002 DVM D scope series iii audio analyzer

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