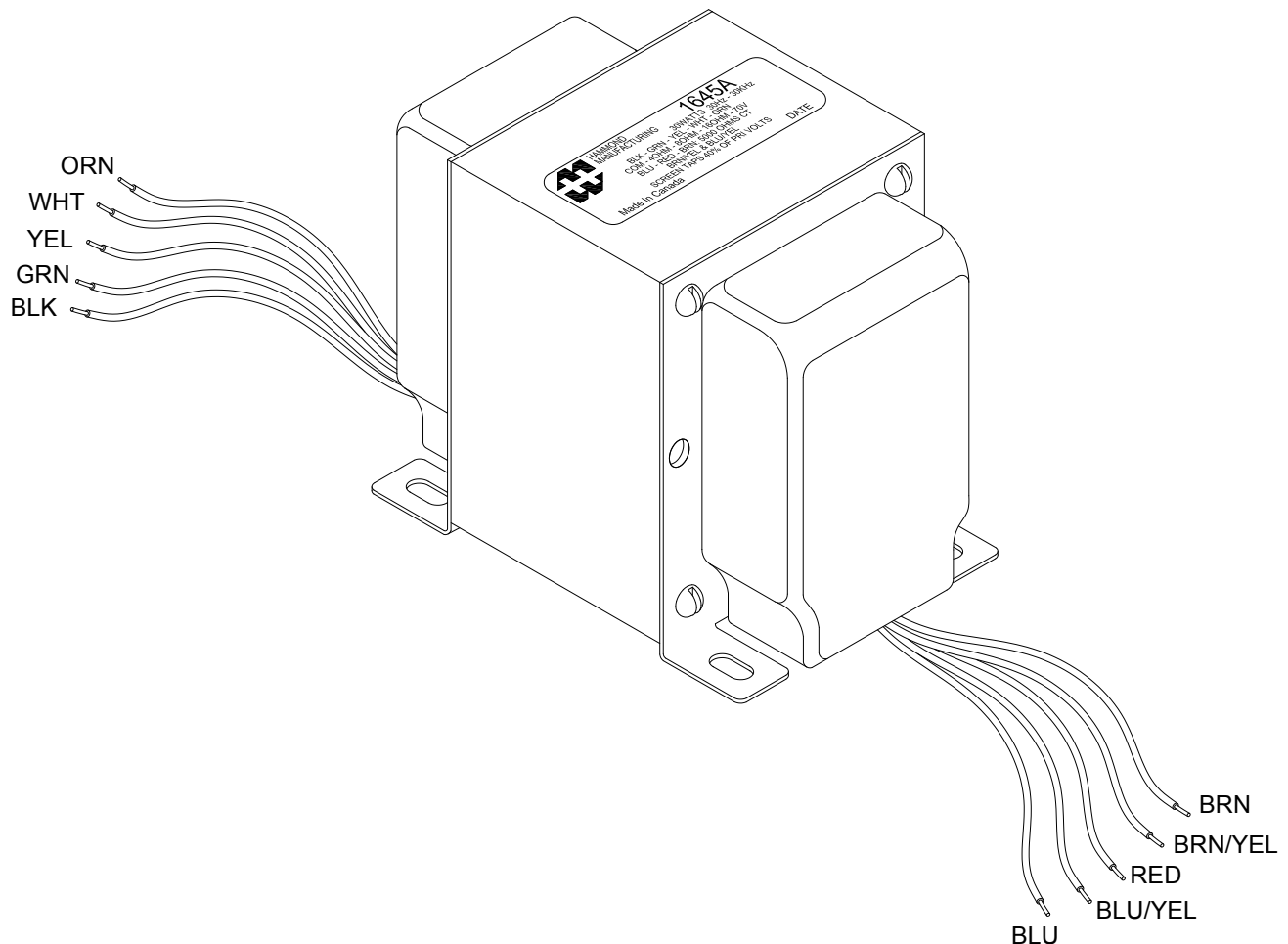




## 1645A

### TUBE OUTPUT (30 WATTS) EASY WIRE SECONDARY – ULTRA LINEAR

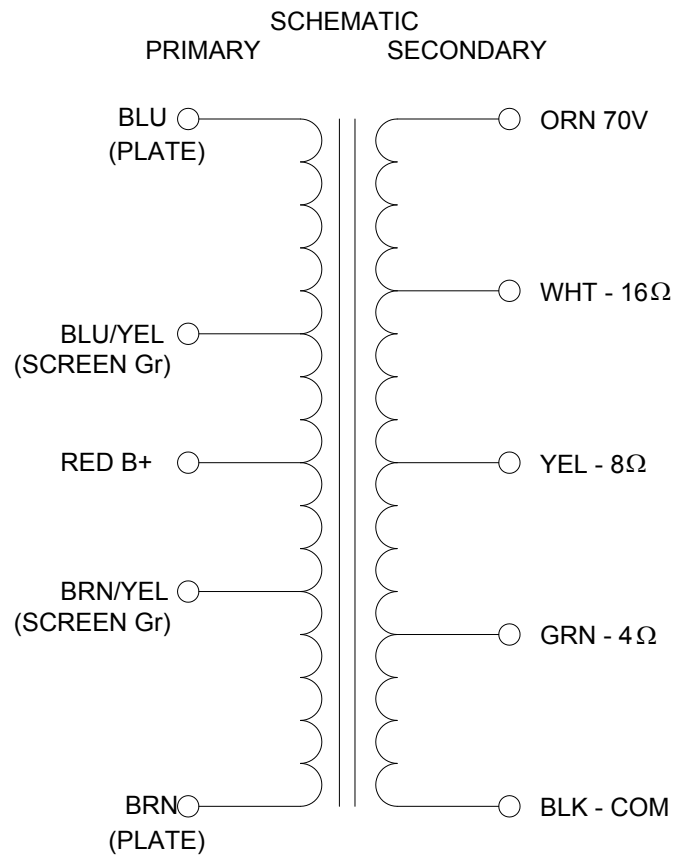
- NEW & improved version of our 1608-1650 Series multiple secondary output transformers (re-designed secondaries for easy hook-up of secondary loads).
- Designed for push-pull tube output circuits.
- Units are designed to provide ample "headroom" at bass frequencies (note the weight of each transformer.)
- All models have a secondary tapped for 4, 8 or 16 ohm outputs.
- Enclosed (shielded), 4 slot, above chassis Type "X" mounting.
- Manufactured with plastic coil forms for coil support and insulation.
- Frequency response 30Hz. to 30Khz. at full rated power (+/- 1db max. - ref. 1Khz) minimum.
- Insulated flexible leads 8" min.
- All units (except the 1650G) include 40% screen taps for Ultra-Linear operation (if desired).
- Typical applications - Push-Pull: triode, Ultra-Linear pentode, pentode and tetrode connected audio output.



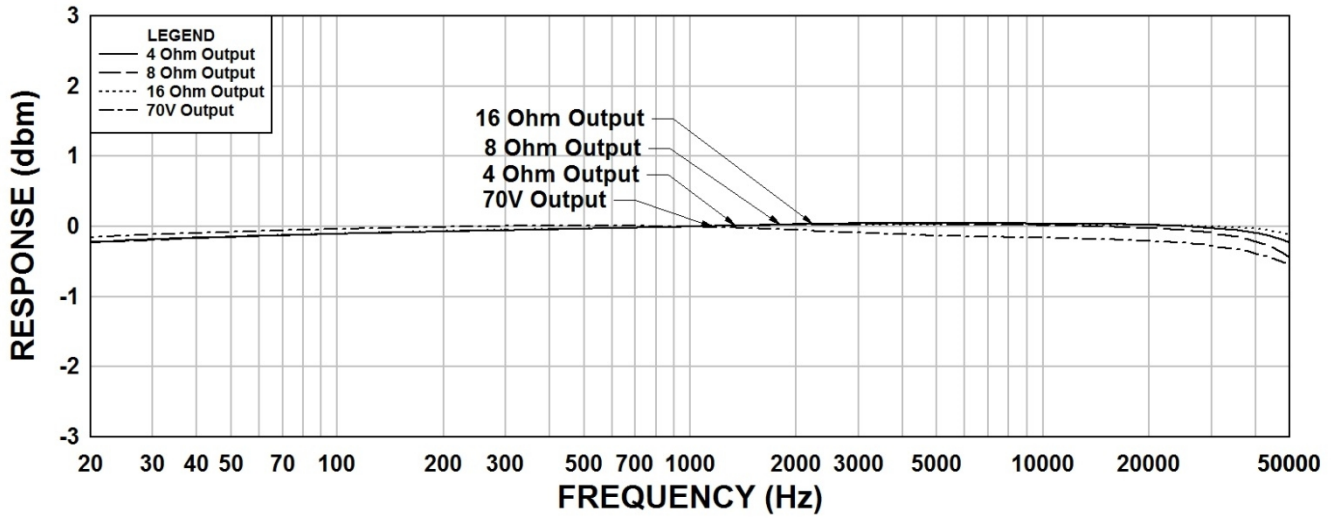
\*For Full Dimensional Details see page 4

**1645A ELECTRICAL SPECIFICATIONS\*\*****Schematic and Hook Up Data**

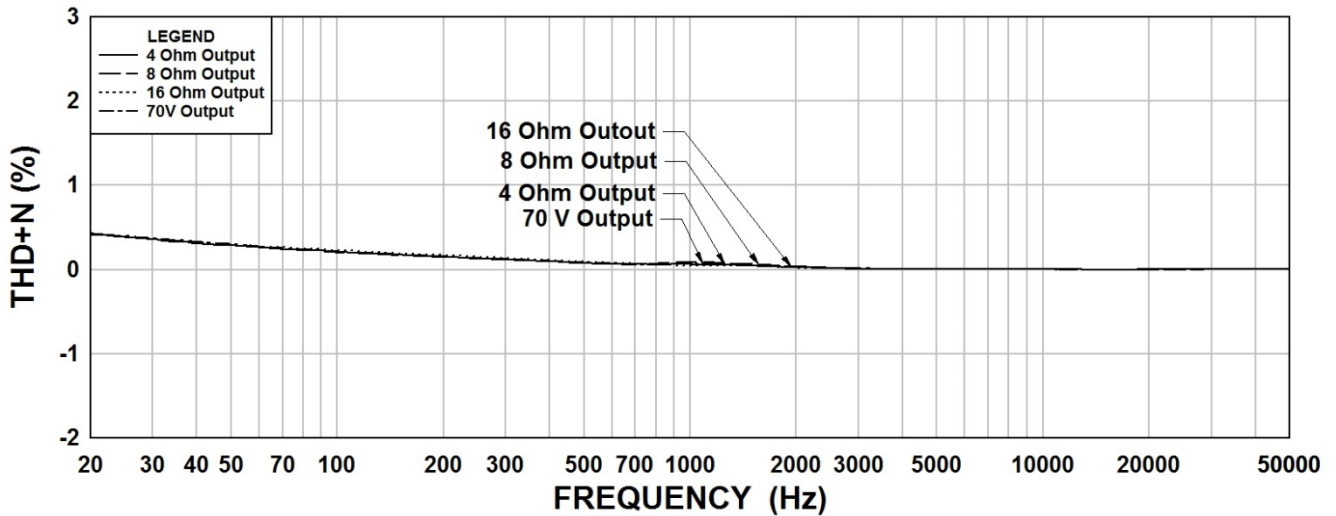
<b>Characteristic</b>	<b>Typical</b>
Input Impedance	5000Ω
Output Impedance	4Ω/8Ω/16Ω/70V
Output Power	30Watts
<b>Primary - DCR</b>	
Blue – Brown	167Ω
<b>Secondary DCR</b>	
Black – Green	276mΩ
Black – Yellow	391mΩ
Black – White	464mΩ
Black – Orange	9.3Ω
<b>Leakage Inductance</b>	@ 1.0kHz, 1.0V SC
Primary – Blue – Brown	355.3mH
<b>Inductance</b>	@ 1.0kHz, 1.0V OC
Primary – Blue – Brown	10.6Hy
Black – Green	135.8mH
Black – Yellow	219.7mH
Black – White	322.6mH
Black – Orange	759.2mH
<b>Impedance</b>	@ 1.0kHz, 1.0V OC
Primary – Blue – Brown	65KΩ
Black – Green	246Ω
Black – Yellow	461Ω
Black – White	850Ω
Black – Orange	3.93KΩ
Frequency Response	See graphs for specific response, Typ. ±1.0db from 30Hz to 30KHz
Dielectric Strength	2000Vrms
Temperature Range	-40 To 105°C



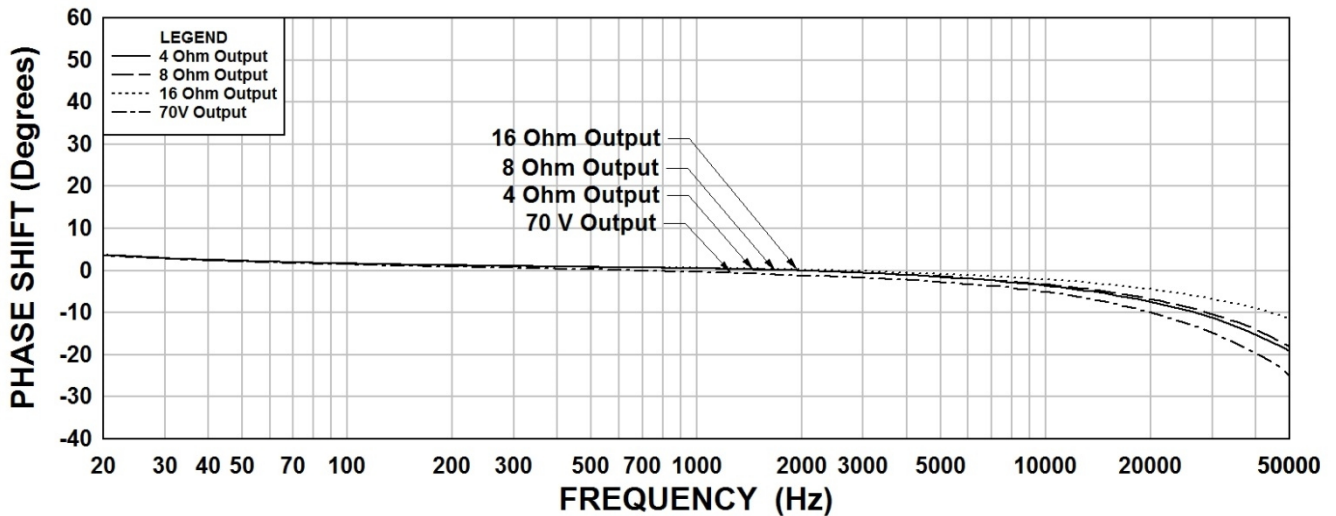
### 1645A Frequency Response $R_s = 5K$ Ohms



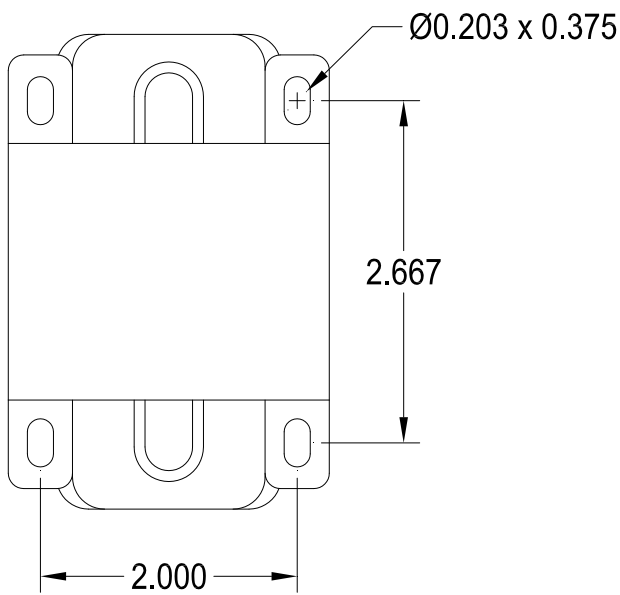
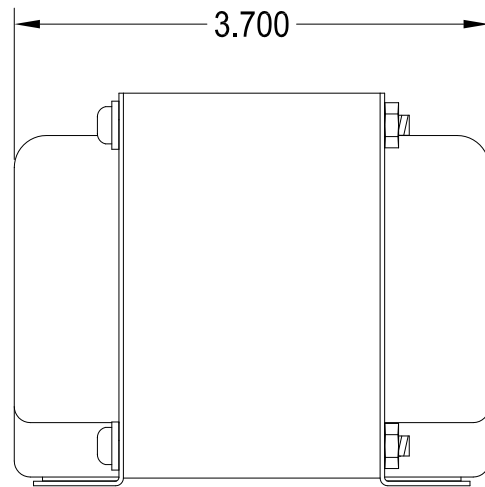
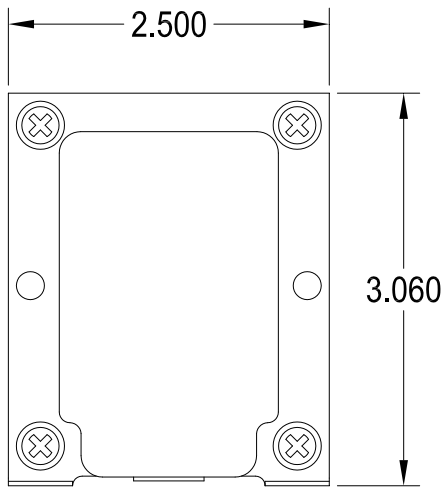
### 1645A THD+N $R_s = 5K$ Ohms



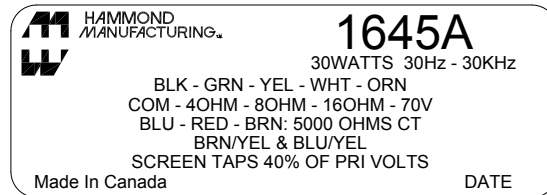
### 1645A Phase Shift $R_s = 5K$ Ohms



**Dimensional Details:**



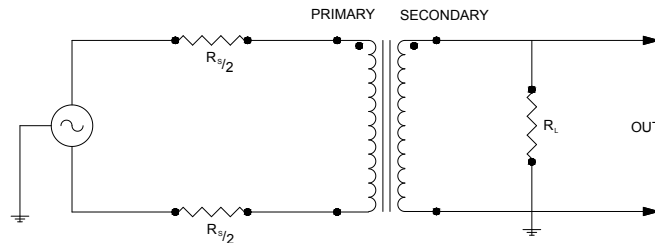
**Label:**



TYPICAL TEST CIRCUIT

Measurement instruments  
 Hp4192a impedance analyzer  
 Hp3456a DVM  
 Keithley 2002 DVM  
 D scope series iii audio analyzer  
 Wayne Kerr 3255B with a 3265B

\* All graphs input level 20dbu.  
 \*\* The results are typical and are subject to normal manufacturing and electrical tolerances.



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