

**HRW5500RE**

**Electrical Specification @25°C**

RoHS Compliant (PB Free)

Operating Temperature Range: -40°C ~ +85°C

Isolation: 2250VDC 0.5mA 60sec (UTP Side to Chip Side)

OCL: 350uH Minimum @100KHz 100mV with 8mADC

Insertion Loss: -1.0dB Maximum @300KHz ~ 100MHz

Return Loss: -20dB Minimum @1MHz ~ 10MHz / -16dB Minimum @10MHz ~ 30MHz  
-12dB Minimum @30MHz ~ 60MHz / -10dB Minimum @60MHz ~ 80MHz

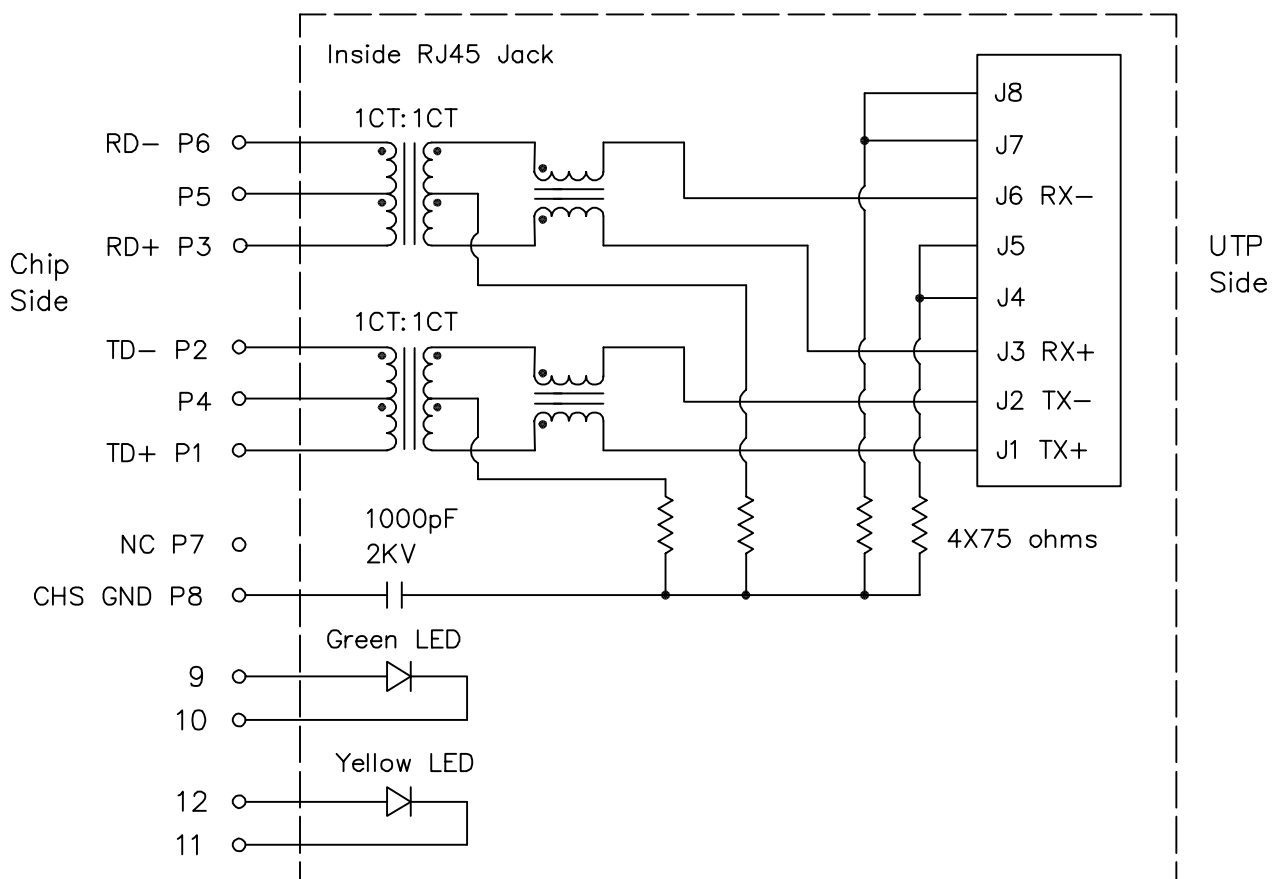
Common Mode Rejection: -30dB Minimum @1MHz ~ 50MHz

-20dB Minimum @50MHz ~ 150MHz

Crosstalk: -40dB Minimum @1MHz ~ 30MHz / -35dB Minimum @30MHz ~ 60MHz

-30dB Minimum @60MHz ~ 100MHz

**Schematics**

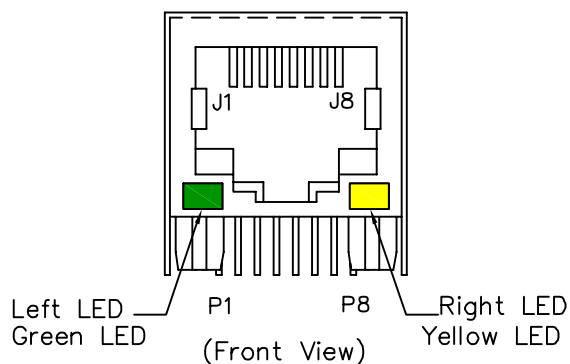
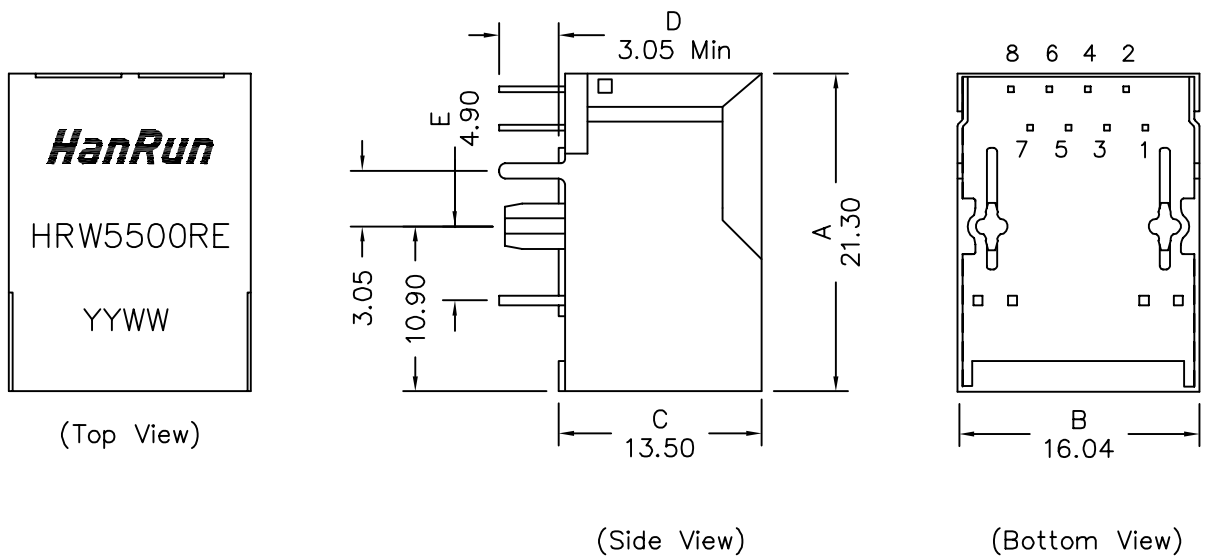


Notes: Connect CHS GND to PCB Ground

**HRW5500RE**

- RoHS Compliant (PB Free)
- Meets or Exceeds IEEE802.3 standards including 350uH Min OCL with 8mADC
- High performance for EMI suppression, Crosstalk, Return Loss and Consistent Electrical
- Minimum 2250VDC isolation per IEEE802.3 requirement
- Minimize PCB space and Simplify PCB Layout
- Less magnetic components to be placed on PCB, higher reliability and yields

Mechanical Dimensions:



Standard LED	Wavelength	Forward V (Min/Max)	Forward A	Type
Green	568nm	1.8V/2.8V	20mA	squareness
Yellow	585nm	1.8V/2.8V	20mA	squareness

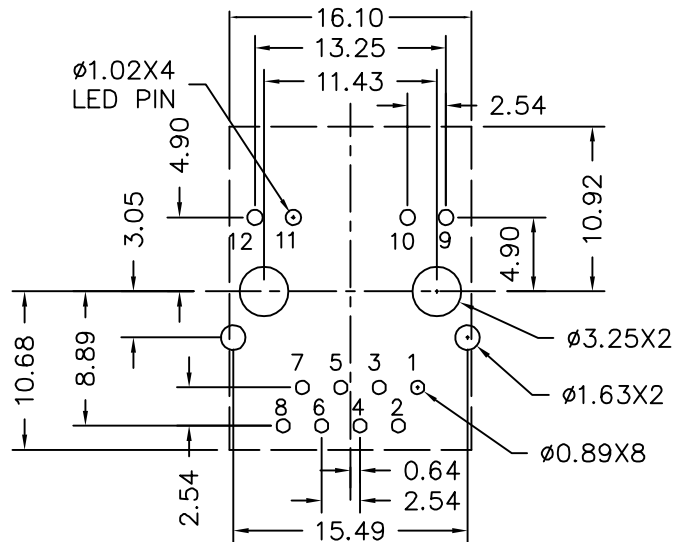
Dimensions in mm

Unless otherwise specified, Tolerance: .xx ±0.25

REV.: 00

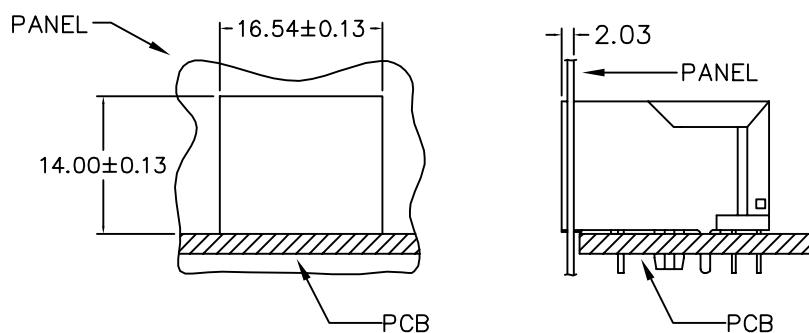
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PCB Layout:



Recommended PCB layout (Component Side View)  
All dimension tolerance are  $\pm 0.08$  unless otherwise specified

Suggested Panel Cutout:



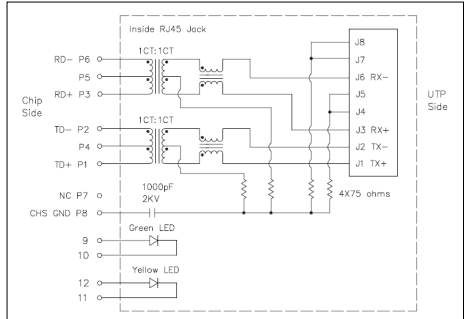
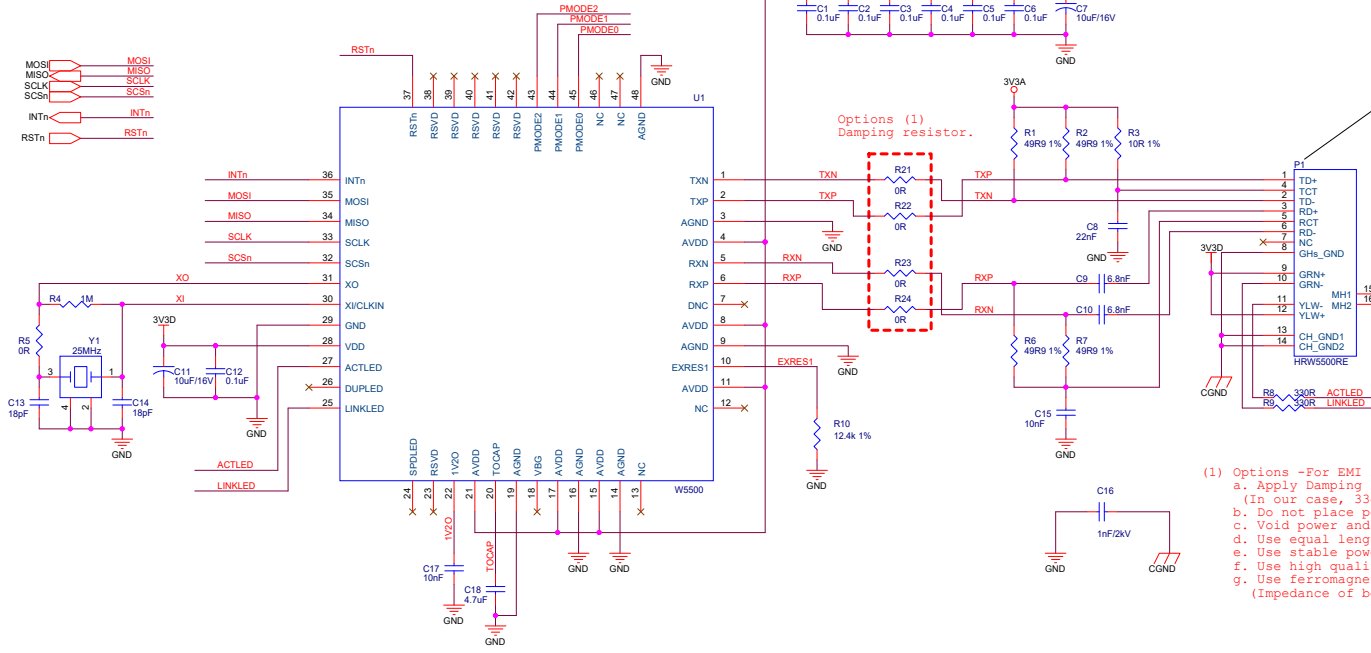
SUGGESTED PANEL OPENING

Dimensions in mm

Unless otherwise specified, Tolerance:  $.xx \pm 0.25$

REV.: 00

PMODE [2:0]			Description
2	1	0	
0	0	0	10BT Half-duplex, Auto-negotiation disabled
0	0	1	10BT Full-duplex, Auto-negotiation disabled
0	1	0	100BT Half-duplex, Auto-negotiation disabled
0	1	1	100BT Full-duplex, Auto-negotiation disabled
1	0	0	100BT Half-duplex, Auto-negotiation enabled
1	0	1	Not used
1	1	0	Not used
1	1	1	All capable, Auto-negotiation enabled



Notes: Connect CHS GND to PCB Ground

**RJ45 WITH MAGNETICS**

- (1) Options -For EMI reduction.
- Apply Damping resistors. (In our case, 33ohm was best for EMI reduction.)
  - Do not place power jack nearby RJ-45 connector.
  - Void power and ground planes under discrete magnetic components.
  - Use equal length differential MDI (Medium Dependent Interface) signal traces.
  - Use stable power source.
  - Use high quality CAT5E.
  - Use ferromagnetic bead between digital vdd and analog vdd. (Impedance of between 100 and 2000 ohms at 100MHz is adequate.)