

RJ45 SINGLE PORT 100/1000/2.5G/5G BASE-T MAGNETICS



21.30 x 15.90 x 13.60mm
21.30 x 15.90 x 13.80mm

MSL = 1

RoHS/RoHS II Compliant

ARJM11

SERIES DESCRIPTION

The ARJM11 series of RJ45 jacks with internal magnetics supports a wide range of configurations in 10/100Base-T, 1000Base-T, 2.5GBase-T and 5GBase-T applications. This series offers the ability to mix and match physical orientation of the tab, pin layouts, EMI fingers, LED colors and plating options while providing PoE and PoE+ options for 10/100Base-T rates. All configurations in the product series support paste in hole (PIH), a technology that allows through-hole components to be compatible with surface mount reflow assembly processes. All devices are rated to 0°C to 70°C or -40°C to 85°C operating temperature range.

FEATURES

- 10/100Base-T, 1000Base-T, 2.5GBase-T or 5GBase-T
- Supports PoE and PoE+ (10/100Base-T)
- Compatible with surface mount with Paste in hole (PIH) technology
- -40°C to 85°C or 0°C to 70°C operating temperature range
- Combinations of green, yellow, orange, and red LED

APPLICATIONS

- Internet of Things (Ethernet)
- IP cameras, surveillance, and phone
- Access points
- Industrial computers
- Network interface cards (NIC)
- Industrial process control
- Networking and communications
- Broadcast video
- Storage
- Set top box and video
- Power over Ethernet (PoE)
- Test and Measurement
- Multifunction Printers (MFP)

OPTIONS AND PART IDENTIFICATION

*NRE may apply to some configurations.

ARJM11 [] [] - [] - [] [] - [] [] [] []

Mechanical	Pin Layout	Schematics	Left LED color	Right LED color	Operating Temperature	Soldering Method	Gold Plating	Packaging
A: Tab down, w/ EMI Finger	1: for A and B	100 Base-T: 009, 001, 007, 008, 010	N: No LED	N: No LED	C: 0 ~ 70 °C E: -40 ~ 85 °C	W: Wave R: Reflow	0: Gold Flash 1: 3u" 2: 6u" 3: 15u" 4: 30u" 5: 50u"	Blank: Bulk T: Tape&Reel
B: Tab down, w/o EMI Finger	3: for A and B		A: Green	A: Green				
C: Tab up, w/ EMI Finger	7: for C and D	100 Base-T & PoE: 104, 114, 116, 130	B: Yellow	B: Yellow				
D: Tab up, w/o EMI Finger			C: Red	C: Red				
		1000 Base-T: 502, 504, 516, 517, 559, 576, 577, 628, 634	D: Orange	D: Orange				
			J: Green/Yellow	J: Green/Yellow				
		2.5G Base-T: 805, 809	K: Green/Orange	K: Green/Orange				
			L: Green/Red	L: Green/Red				
		5G Base-T: 811	M: Red/Yellow	M: Red/Yellow				

*(Please See Mechanical Section)

*(Please See Schematics Section)

Example Configurations

ARJM11 A1-001 -AB- C W 2 (Tab down, w/ EMI, 100Base-T, w/LED G/Y, commercial grade, 6u" Gold, Tray Packaging)
ARJM11 D7-502 -NN- E R 4 - T (Tab up, w/o EMI, 1000Base-T, no LED, industrial grade, reflow soldering, 30u" Gold, Tape & Reel)

RJ45 SINGLE PORT 100/1000/2.5G/5G BASE-T MAGNETICS



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21.30 x 15.90 x 13.60mm
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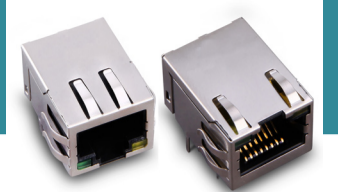
MSL = 1

RoHS/RoHS II Compliant

STANDARD SPECIFICATIONS

Parameters	Minimum	Typical	Maximum	Units	Notes
Turn Ratio ($\pm 3\%$)	1CT:1CT				100kHz, 0.1V
Inductance	350			μH	100kHz, 0.1V, 8mADC
	200				For 2.5G Base-T only
	160				For 5G Base-T only
Leakage Inductance			0.5	μH	100kHz, 0.1V
			0.3		For 2.5G Base-T and 5G Base-T
DC Resistance			1.5	Ω	
Hipot	2250			VDC	1mA Max Complies with IEEE 802.3
Operating Temperature	-40		+85	$^{\circ}\text{C}$	See options
Storage Temperature	-40		+85	$^{\circ}\text{C}$	
100 Base-T					
Insertion Loss	-1.1			dB	0.5-100MHz
Return Loss			-18	dB	0.5-30MHz
			$-18+20\log(f/30)^*$		30.1-60MHz
			-12		60.1-80MHz
Crosstalk			-35	dB	0.5-40MHz
			$-33+20\log(f/50)^*$		40.1-100MHz
CMRR			-30	dB	0.5-100MHz
1000 Base-T					
Insertion Loss	-1.1			dB	0.5-100MHz
Return Loss			-18	dB	0.5-40MHz
			$-12+20\log(f/80)^*$		40.1-100MHz
Crosstalk			-35	dB	0.5-40MHz
			$-33+20\log(f/50)^*$		40.1-100MHz
CMRR			-30	dB	0.5-100MHz
2.5G Base-T					
Insertion Loss	-0.5			dB	1-50MHz
	-1.0				50-125MHz
Return Loss			-20	dB	1-40MHz
			$-20+15\log(f/40)^*$		40-200MHz
Crosstalk			-30	dB	25-125MHz
5G Base-T					
Insertion Loss	-0.5			dB	1-50MHz
	-1.0				50-125MHz
	-2.0				125-250MHz
Return Loss			-20	dB	1-40MHz
			$-20+15\log(f/40)^*$		40-250MHz
Crosstalk			-30	dB	1-125MHz
			-25		125-250MHz
POE					
Balanced DC line current			350	mA	@57VDC continuous
			500		@57VDC for 200ms
POE+					
Balanced DC line current			600	mA	@57VDC continuous
			720		@57VDC for 200ms

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MSL = 1

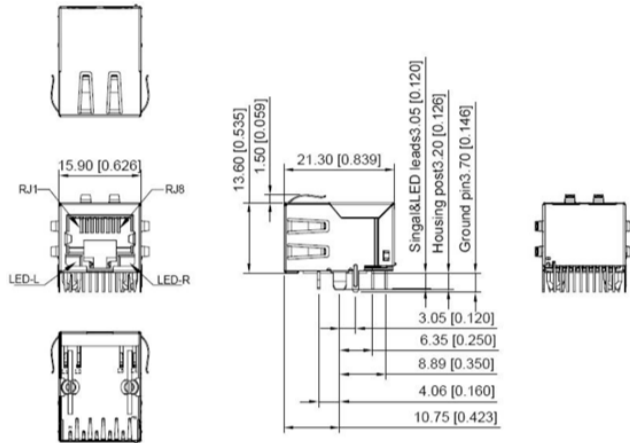
RoHS/RoHS II Compliant

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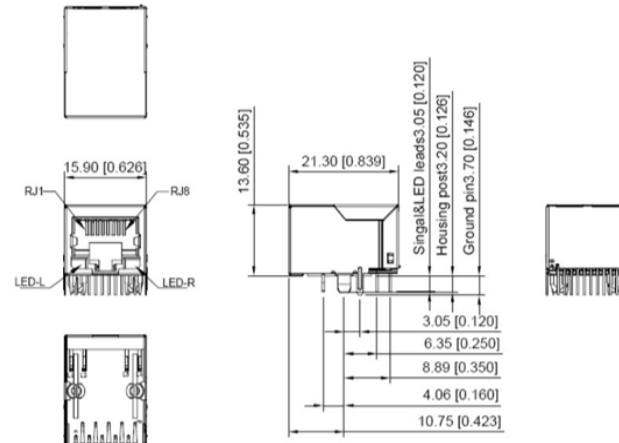
MECHANICAL DIMENSIONS

See addendum for additional PCB layout.

A: Tab down, w/ EMI Fingers

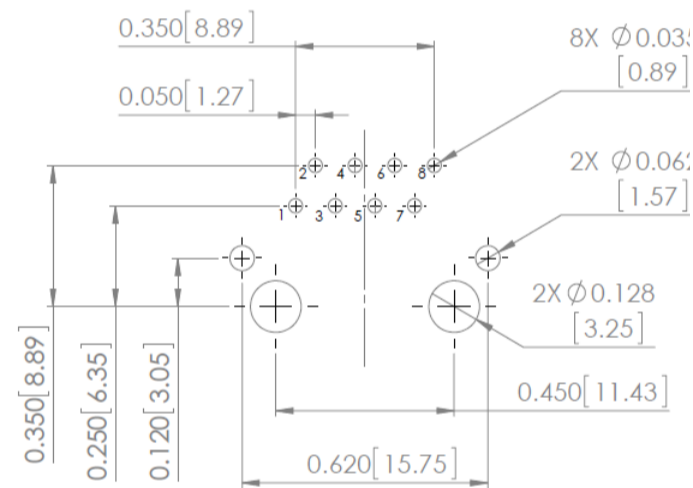


B: Tab down, w/o EMI Fingers

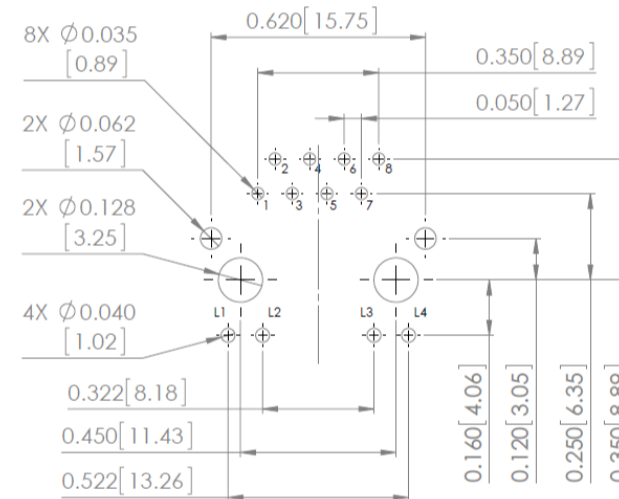


Pin Layout = 1 (Tab down, Mechanical = A or B)

8 pins, no LED
For 100 Base-T

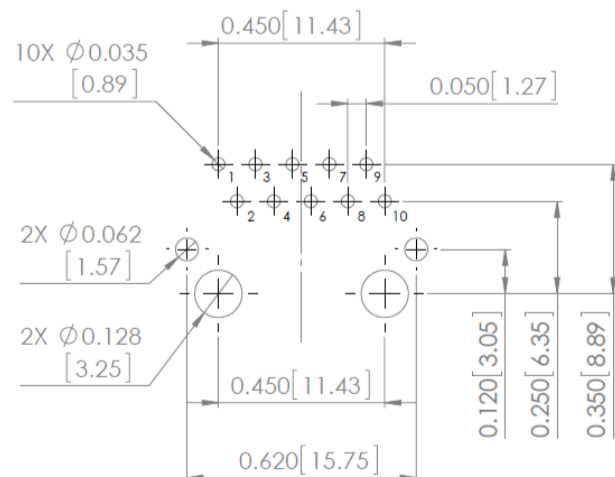


8 pins, with LED
For 100 Base-T

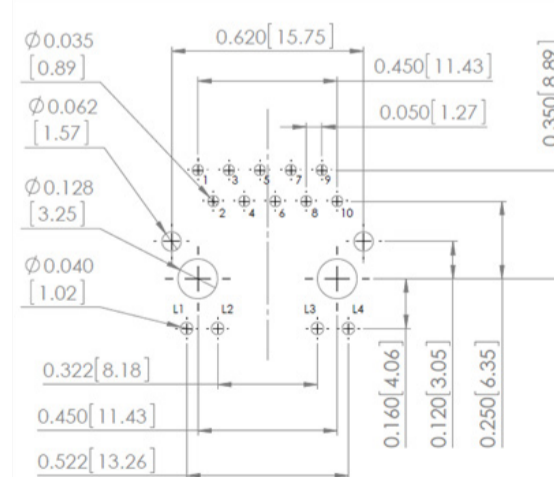


Pin Layout = 1 (Tab down, Mechanical = A or B) continued

10 pins, no LED
For 100&PoE/1000/2.5G/5G Base-T



10 Pins, w/ LED
For 100&PoE/1000/2.5G/5G Base-T



Contact Abracon for more custom configuration options.



1501 Hidden Creek Lane Spicewood TX 78751
Phone: 949-546-8000 | Fax: 949-546-8001
For terms and conditions of sales visit:
www.abracon.com

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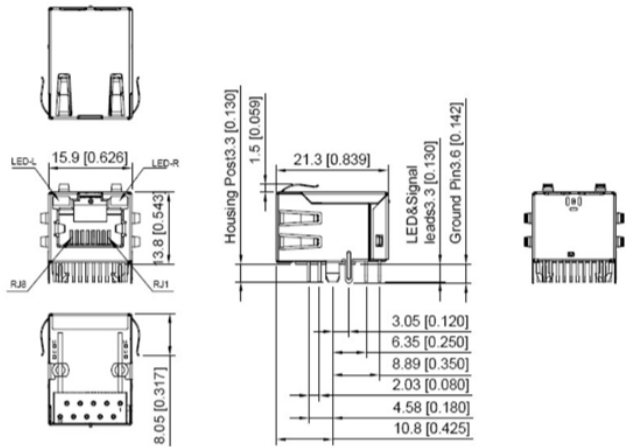
MSL = 1

RoHS/RoHS II Compliant

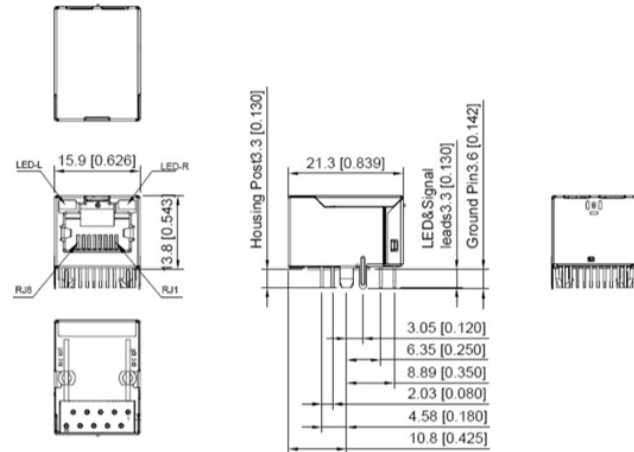
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MECHANICAL DIMENSIONS

C: Tab up, w/ EMI Fingers

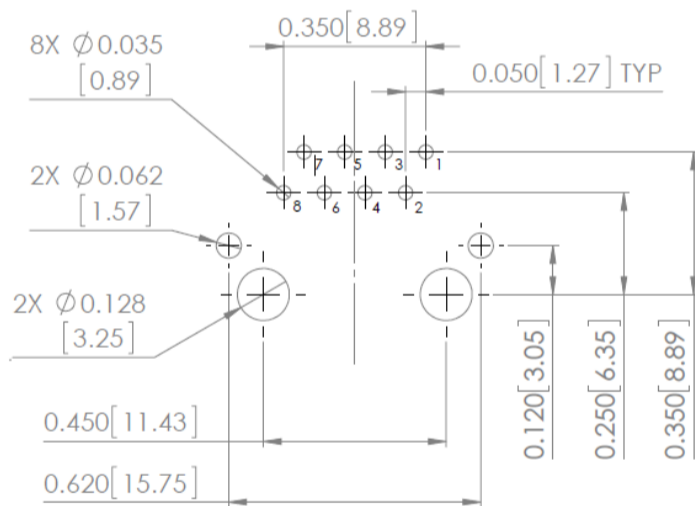


D: Tab up, w/o EMI Fingers

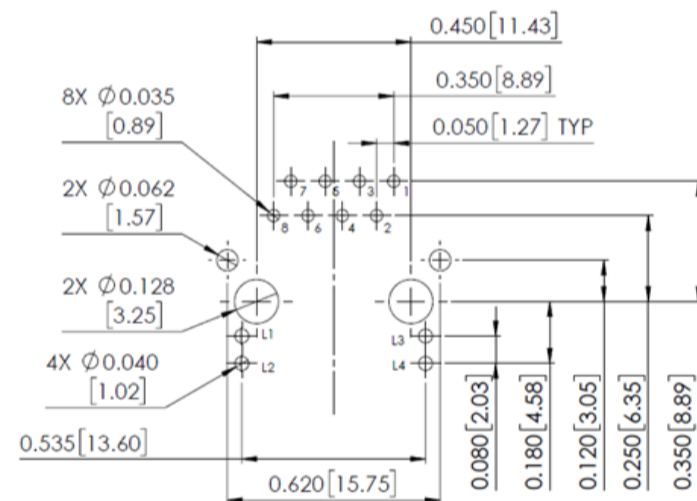


Pin Layout = 7 (Tab up, Mechanical = C or D)

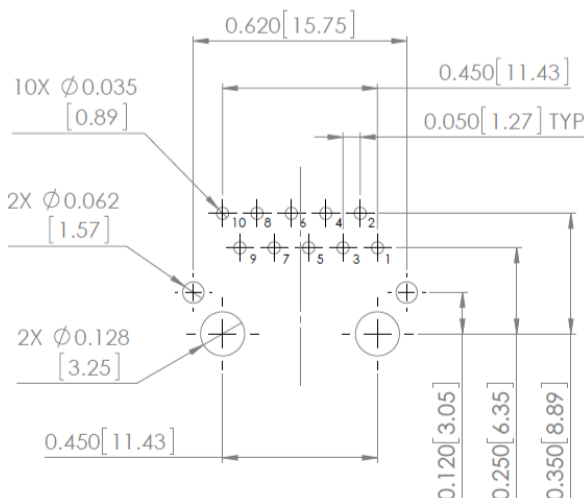
8 Pins, no LED
For 100 Base-T



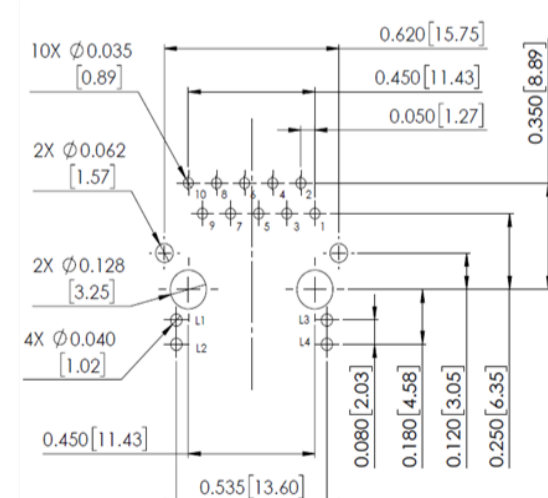
8 Pins, w/ LED
For 100 Base-T



10 Pins, no LED
For 100&PoE/1000/2.5G/5G Base-T



10 Pins, w/ LED
For 100&PoE/1000/2.5G/5G Base-T



Dimensions: mm[inch] (Unless otherwise specified, all tolerances are ± 0.25 [0.010])

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MSL = 1

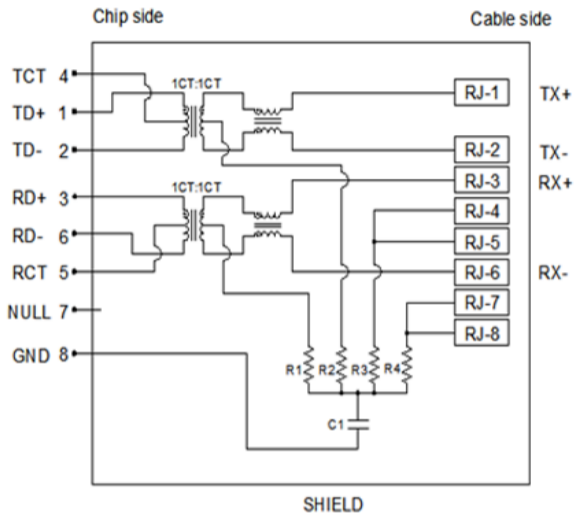
RoHS/RoHS II Compliant

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SCHEMATICS

100 Base-T:

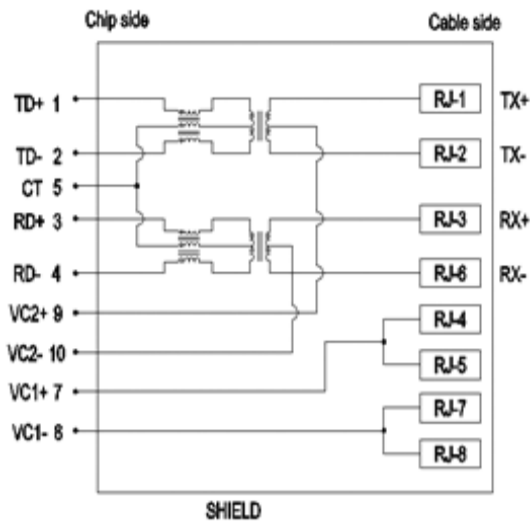
009 (100 Base-T)



Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.

100 Base-T & PoE+:

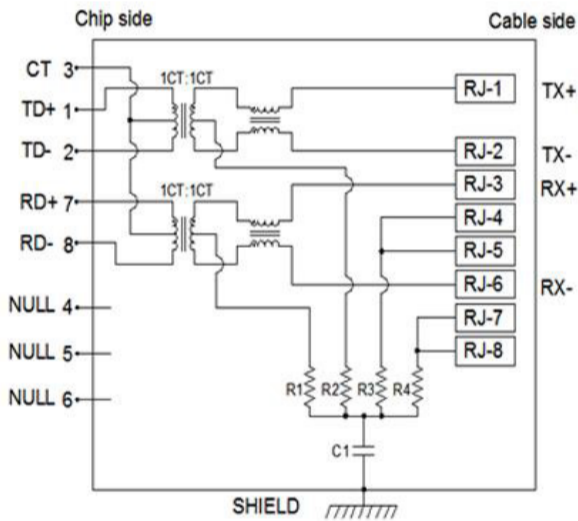
104 (100 Base-T & PoE+)



Note:
Balanced DC line current:
600 mA Max@57VDC Continuous
720 mA Max@57VDC for 200 milliseconds

100 Base-T & PoE:

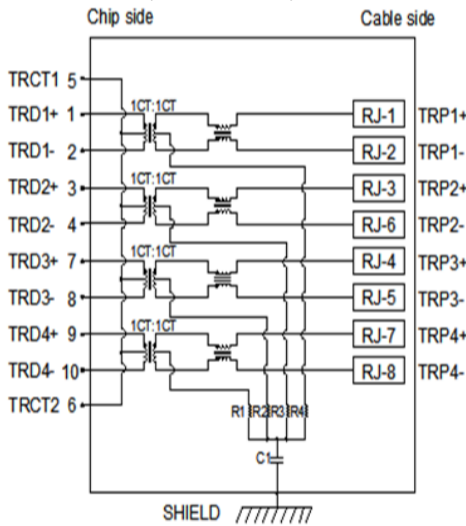
114 (100 Base-T & PoE)



Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.

1000 Base-T:

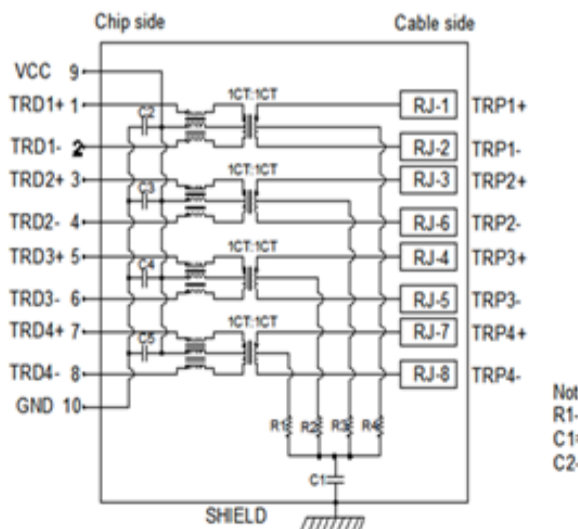
502 (1000 Base-T)



Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.

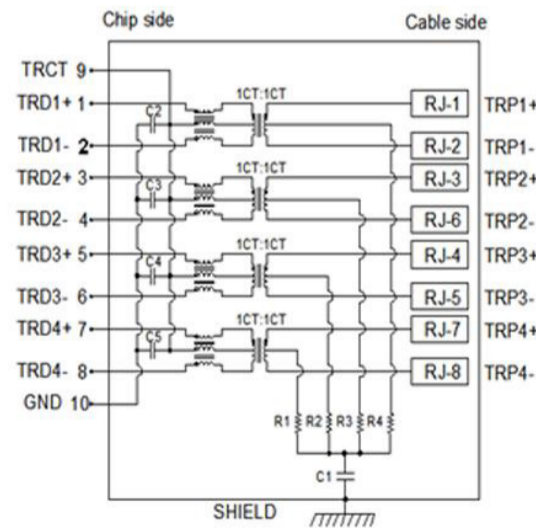
2.5G Base-T:

805 (2.5G Base-T)



Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.
C2-C5=100V 100nF, Capacitor.

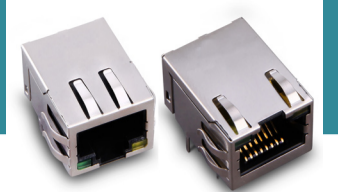
809 (2.5G Base-T)



Note:
R1-R4=75 OHMS, Resistors.
C1=3KV 1000pF, Capacitor.
C2-C5=100V 100nF, Capacitor.

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MSL = 1

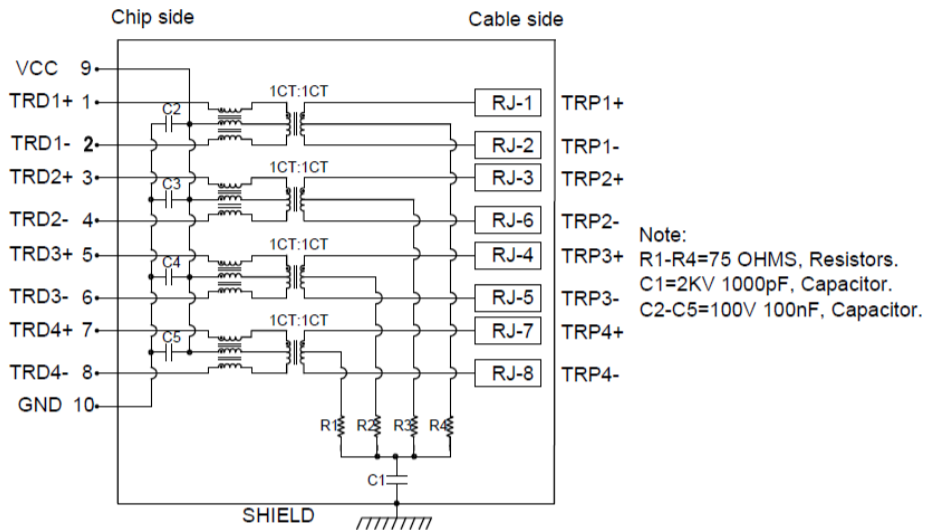
RoHS/RoHS II Compliant

ARJM11

SCHEMATICS

5G Base-T:

811 (5G Base-T)

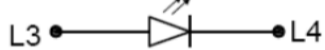


Contact Abracon for more custom configuration options.

LED-L



LED-R



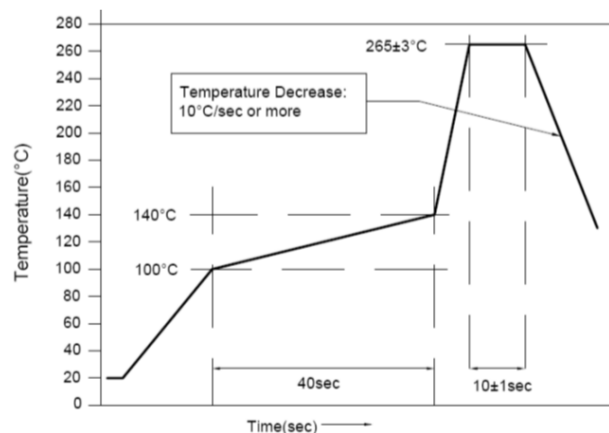
*Note: If two LED colors are selected for left (right) side, for the first color, L1(L3) is anode and L2(L4) is cathode; for the second color, L1(L3) is cathode and L2(L4) is anode.

For example, if J (Green/Yellow) is selected for left LED, L1 to L2 is Green; L2 to L1 is Yellow.

LED SPECIFICATION. @20mA Forward Current

Color	Green	Yellow	Orange	Red
Wavelength	565nm Typ	585nm Typ	605nm Typ	635nm Typ
Forward Voltage	2.2V Typ	2.1V Typ	2.1V Typ	1.8V Typ

WAVE SOLDERING PROFILE



RJ45 SINGLE PORT 100/1000/2.5G/5G BASE-T MAGNETICS



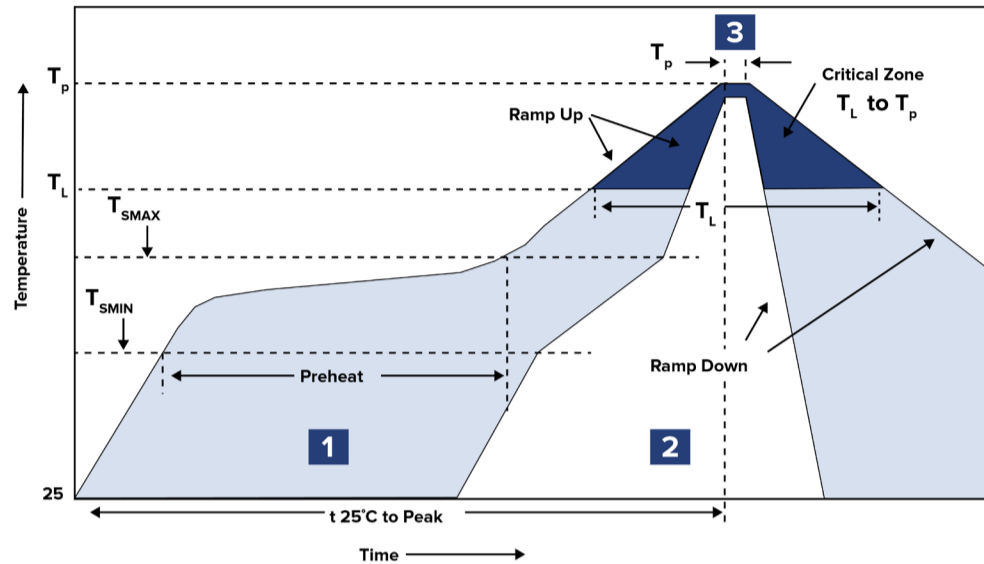
21.30 x 15.90 x 13.60mm
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MSL = 1

RoHS/RoHS II Compliant

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REFLOW SOLDERING PROFILE



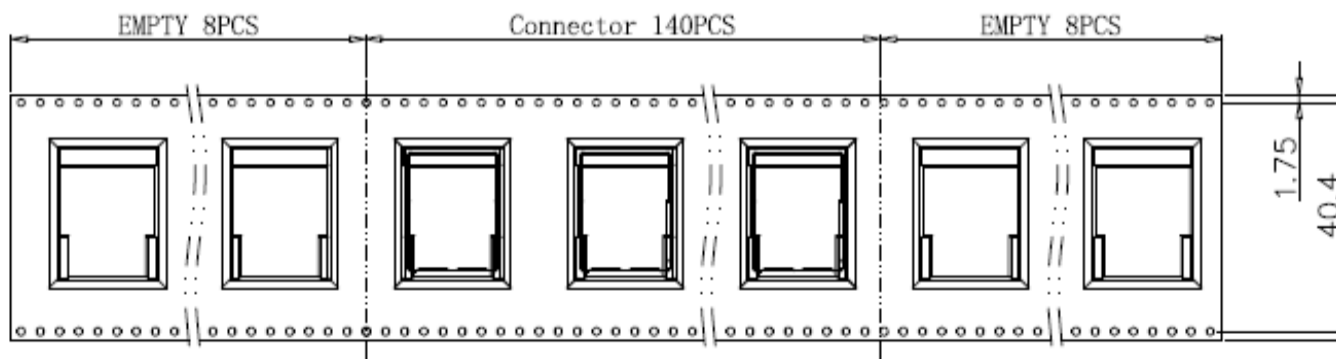
Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ 150°C ~ 180°C	120 ~ 180 sec.
2	Reflow	T_L 217°C	60 ~ 150 sec.
3	Peak heat	T_P 245°C	5 sec. MAX

PACKING: TRAY & TAPE AND REEL

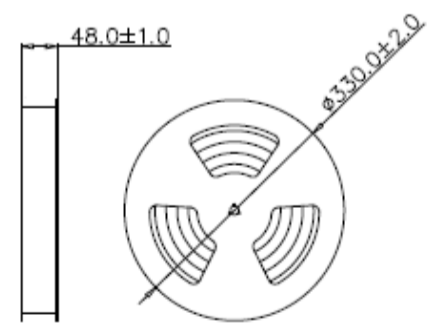
Tray: 70pcs/reel, 700pcs/carton)

Tray Size: L315.0 x W200.0 mm, Transparent PET

Tape & Reel (140pcs/reel, 700pcs/carton)



DIMENSIONS: mm



DIMENSIONS: mm

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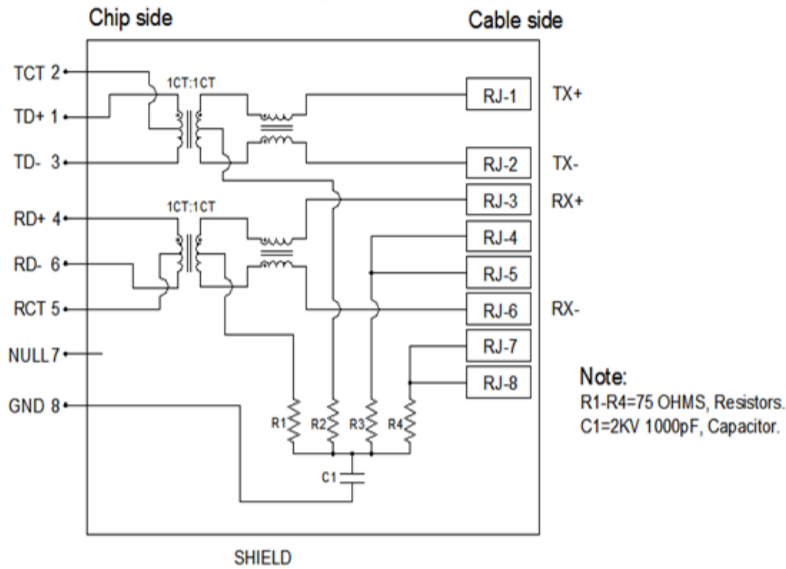
RoHS/RoHS II Compliant

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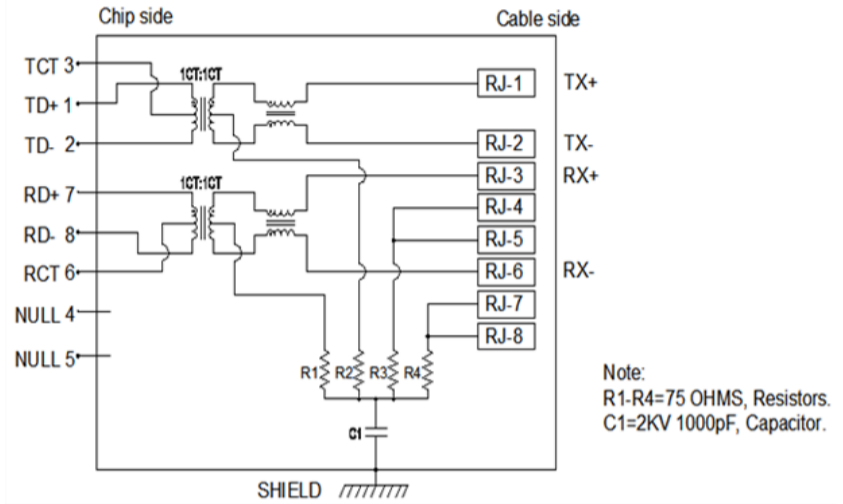
ADDENDUM: ADDITIONAL SCHEMATICS

100 Base-T:

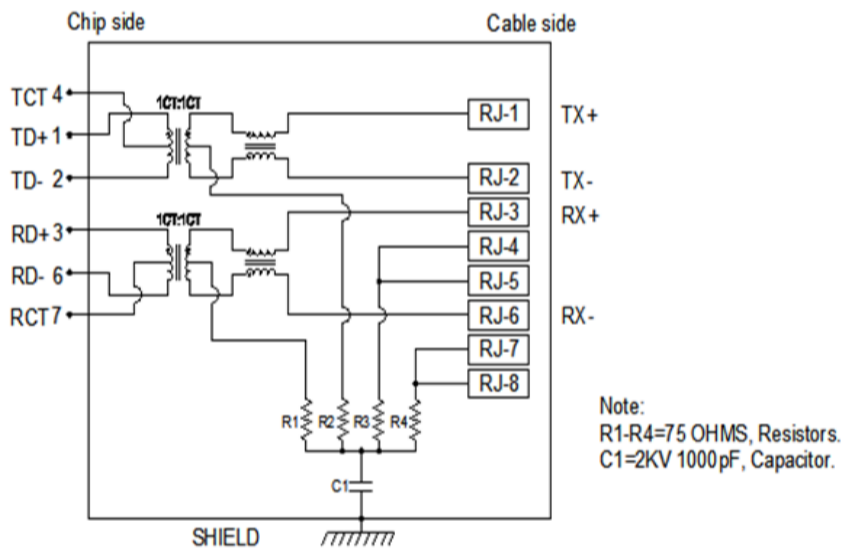
001 (100 Base-T)



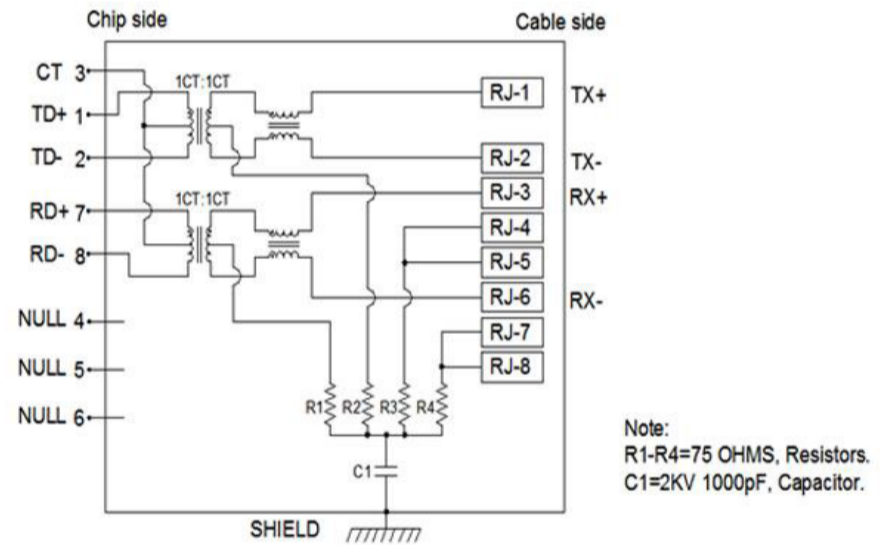
007 (100 Base-T)



008 (100 Base-T)

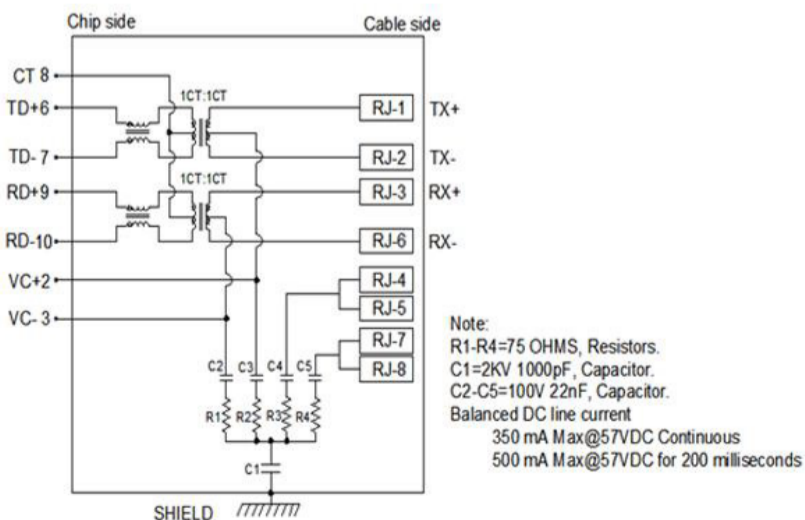


010 (100 Base-T)

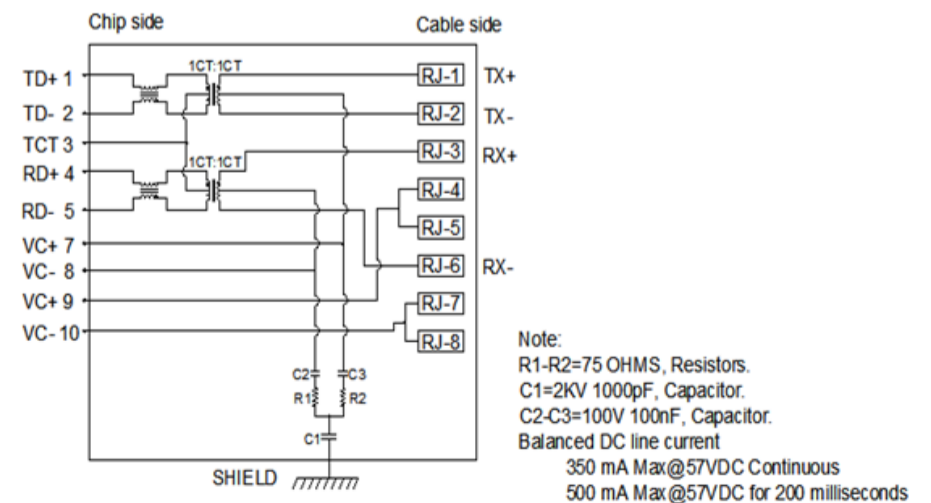


100 Base-T & PoE+:

116 (100 Base-T & PoE)



130 (100 Base-T & PoE)



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RJ45 SINGLE PORT 100/1000/2.5G/5G BASE-T MAGNETICS



21.30 x 15.90 x 13.60mm
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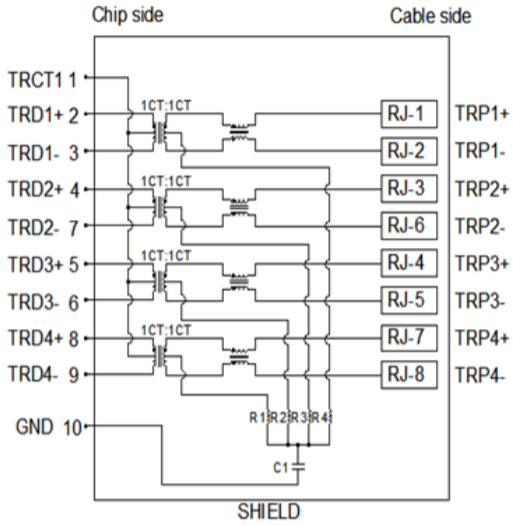
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ADDENDUM: ADDITIONAL SCHEMATICS

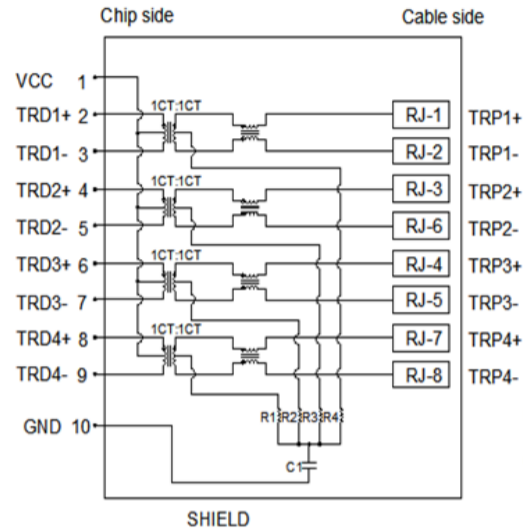
1000 Base-T:

504 (1000 Base-T)



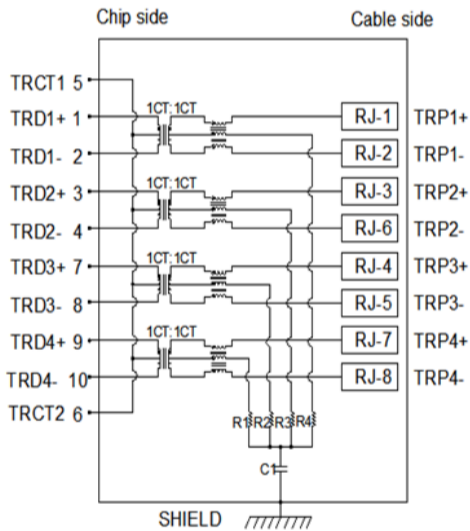
Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.

516 (1000 Base-T)



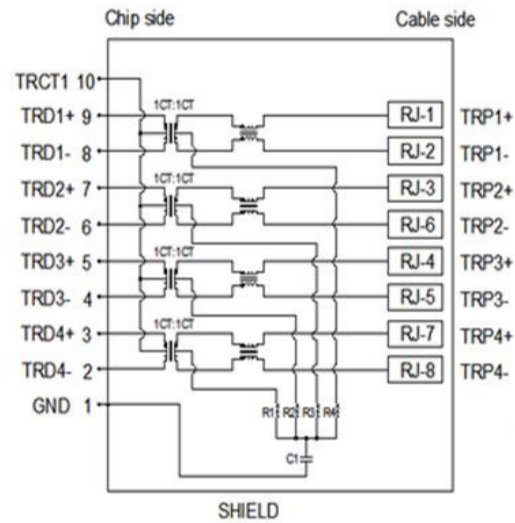
Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.

517 (1000 Base-T)



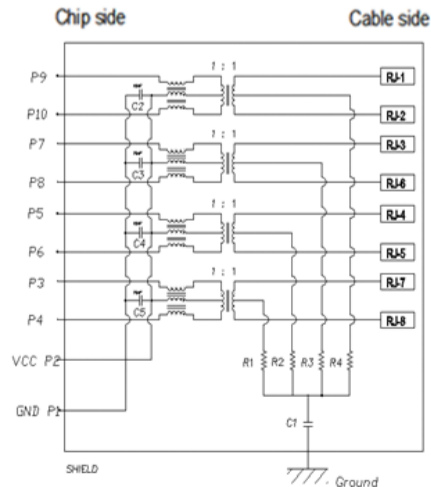
Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.

559 (1000 Base-T)



Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.

576 (1000 Base-T)



Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.
C2-C5=50V 10nF, Capacitor.

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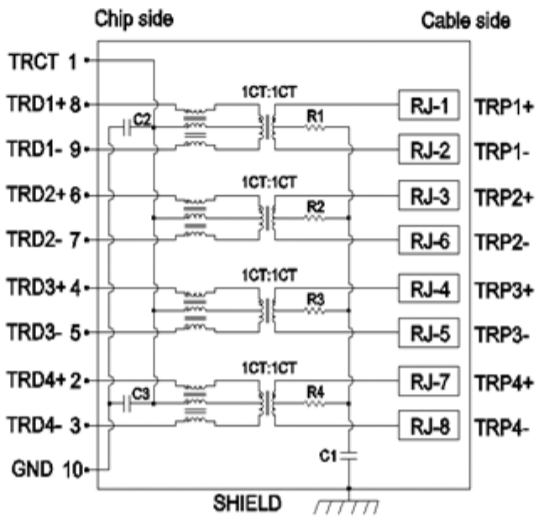
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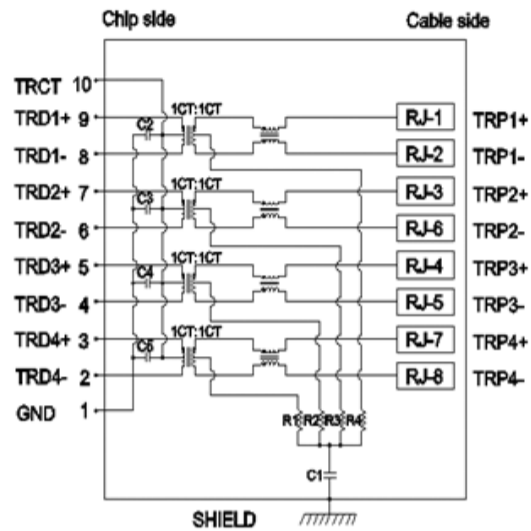
ADDENDUM: ADDITIONAL SCHEMATICS

1000 Base-T (continued):
577 (1000 Base-T)



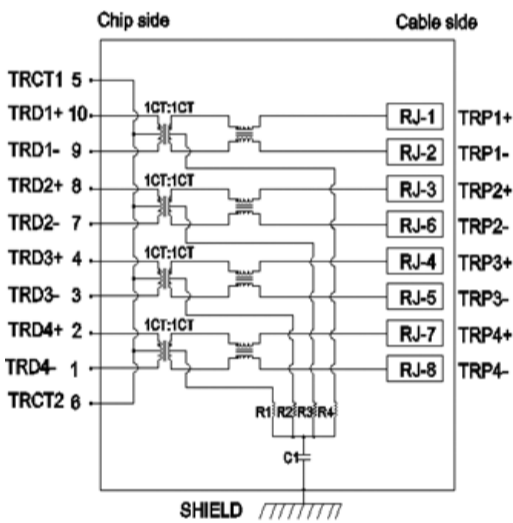
Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.
C2-C3=50V 100nF, Capacitor.

628 (1000 Base-T)



Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.
C2-C5=100V 100nF, Capacitor.

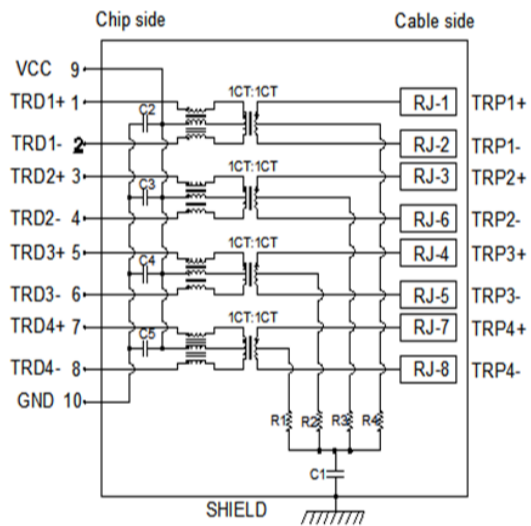
634 (1000 Base-T)



Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.

2.5G Base-T:

805 (2.5G Base-T)

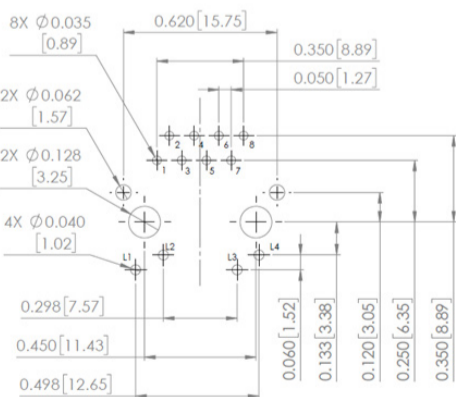


Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.
C2-C5=100V 100nF, Capacitor.

ADDENDUM: PCB LAYOUT

Pin Layout = 3 (Tab down, Mechanical = A or B)

8 Pins, w/ LED
For 100 Base-T



10 Pins, w/ LED

For 100&PoE/1000/2.5G/5G Base-T

