

RJ45M R1V 3.3N4Y/G TY SO

Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 26

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Germany

www.weidmueller.com



RJ45 transmitter sockets (magnetics) for gigabit applications (1000 base-T) with integrated compensation actively counteracts inductive and capacitive couplings and saves space on the PCB.

The product range encompasses the following designs:

- 90°, lying (horizontal) and 180°, standing (vertical)
- latch up / latch down
- THT, THR or SMD soldering processes
- Wide range of different design types, also with integrated LEDs and shield contact tabs
- Transmission rates of up to 1 Gbps
- Packed either in a tray (TY) or on a roll (tape-on-reel, RL)
- Compatible with modular RJ45 connector according to ANSI / TIA-1096-A and IEC 60603
- Dielectric strength ≥ 1500 V AC RMS (2250 V AC peak value) according to IEEE 802.3
- Dielectric strength ≥ 1500 V AC (peak value) or ≥ 1500 V DC according to IEC 60603
- Compliance with IEEE 802.3 requirements (1000Base-T, 1 Gbps, IEEE 802.3ab or 100Base-Tx, 100 Mbps, IEEE 802.3u)

Properties and advantages:

- Extended temperature range of -40 °C to $+85$ °C for maximum performance
- Reinforced gold layer (30μ) for improved corrosion protection

- At least 0.3mm stand-off ensures a perfect soldering result

General ordering data

Version	PCB plug-in connector, RJ45 jacks transformer, 10/100 MBit/s, THT/THR solder connection, 180°, Shield tabs: none, $30\ldots 80\mu$ Ni / $\geq 30\mu$ Au, LED: Yes, green, yellow, Number of poles: 7, Tray (manual assembly)
Order No.	2582690000
Type	RJ45M R1V 3.3N4Y/G TY SO
GTIN (EAN)	4050118655773
Qty.	120 pc(s).
Packaging	Tray (manual assembly)

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Technical data

Dimensions and weights

Depth	16.8 mm	Depth (inches)	0.661 inch
Height	20.3 mm	Height (inches)	0.799 inch
Height of lowest version	17 mm	Net weight	3.783 g
Width	16 mm	Width (inches)	0.63 inch

System specifications

Colour of left LED	green	Colour of right LED	yellow
LED	Yes	Mounting onto the PCB	THT/THR solder connection
Number of poles	7	Number of solder pins per pole	1
Outgoing elbow	180°	Performance-Category	10/100 MBit/s
Pitch in inches (P)	0.05 inch	Pitch in mm (P)	1.27 mm
Product family	OMNIMATE Data - RJ45 transformer jack	Protection degree	IP20
Shield surface	nickel-plated	Shield tabs	none
Shielding material	Brass	Solder eyelet hole diameter (D)	0.9 mm
Solder pin length (l)	3.3 mm	Soldering process	Reflow soldering, Manual soldering, Wave soldering
Transmission rate	10/100 MBit/s		

Electrical properties

Dielectric strength, contact / contact	1000 V DC	Dielectric strength, contact / shield	1500 V DC
Rated current	1.5 A	Rated voltage	125 V

Material data

Colour	black	Colour chart (similar)	RAL 9011
Contact surface	Gold over nickel	Layer structure of plug contact	30...80 µ" Ni / ≥ 30 µ" Au
Storage temperature, min.	-40 °C	Storage temperature, max.	85 °C
Operating temperature, min.	-40 °C	Operating temperature, max.	85 °C

Packing

Packaging	Tray (manual assembly)	VPE length	0
VPE width	0	VPE height	0

Classifications

ETIM 6.0	EC002637	ETIM 7.0	EC002637
ECLASS 9.0	27-44-04-02	ECLASS 9.1	27-44-04-02
ECLASS 10.0	27-44-04-02	ECLASS 11.0	27-46-02-01

Approvals

ROHS	Conform
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Downloads

Product Change Notification	PCN PCN
Brochure/Catalogue	Catalogues in PDF-format

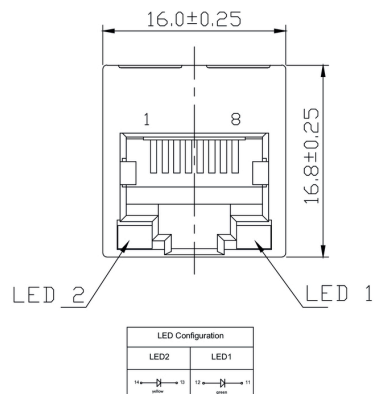
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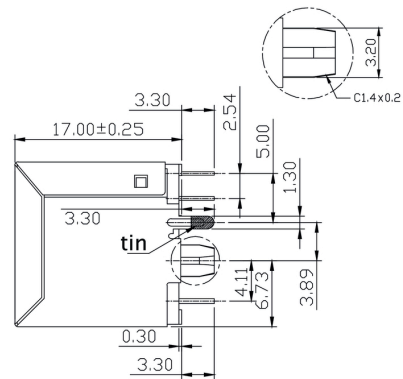
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Drawings

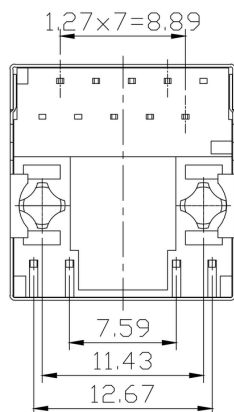
Dimensioned drawing



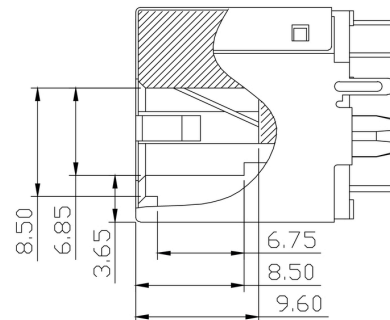
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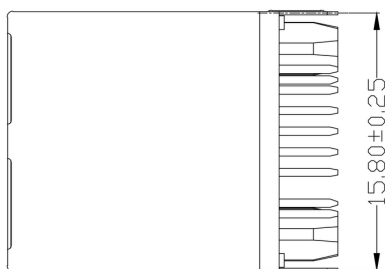
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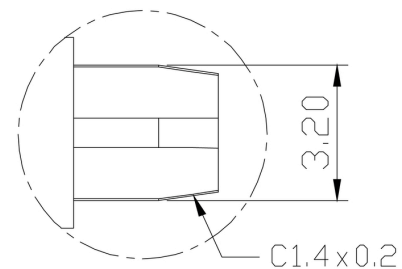
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Drawing



Drawing



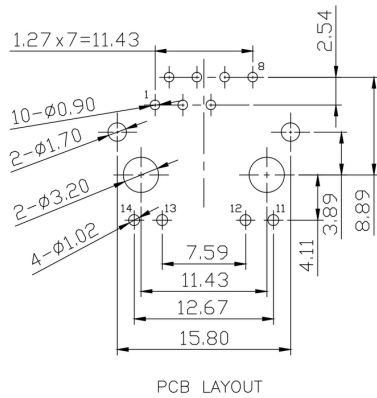
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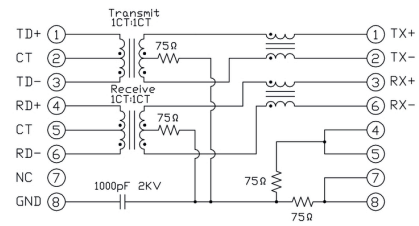
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Drawings

PCB design



Wiring diagram



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Drawings

Schematic

Characteristics

Inductance	350 µH min. @ 100 kHz, 100 mV, 8 mA DC Bias
Leakage Inductance	0.3 µH max. @ 100 kHz, 100 mV
Insertion Loss	1.1 dB max. @ (1 - 100) MHz
Return Loss	18 dB min. @ (1 - 30) MHz 16 dB min. @ (30 - 60) MHz 12 dB min. @ (60 - 80) MHz
Cross Talk	30 dB min. @ (1 - 100) MHz
Common Mode Rejection	30 dB min. @ (1 - 100) MHz

RJ45	G1	R	1	U	3.2	E	4	GY/GY	TY	RJ45G1 R1U 3.2E4GY/GY TY
										Packaging
										TY Tray in box (manual assembly)
										RL Tape on Reel (automated assembly)
										LED
										Y/G Yellow/Green
										G/Y Green/Yellow (standard)
										GY/GY Green-Yellow/Green-Yellow
										O/G Orange/Green
										R/O Red/Orange
										... (further combinations possible)
										N without LED
										Contact surface thickness
										4 1 = 3µ", 2 = 6µ", 3 = 15µ", 4 = 30µ", 5 = 50µ"
										EMI tabs (ground fingers)
										E E = with EMI tabs
										N N = without EMI tabs
										Solder Pin length
										3.2 3.2 mm
										1.6 1.6 mm
										D SMD
										Direction, latch style
										U Horizontal (90°, side entry), latch up
										D Horizontal (90°, side entry), latch down
										V Vertical (180°, top entry)
										Y Diagonal (45°), latch up
										Number of Ports
										1 1 Port
										12; 14; ... multi ports side by side, Multiport
										2; 4; ... multi ports about each other, Multilevel
										Assembly on PCB
										R Through Hole Reflow - THR
										S Soldering process: Wave or Reflow soldering
										S Surface Mount Technology - SMT
										T Soldering process: Reflow soldering
										Through Hole Technology - THT
										Soldering process: Wave
										Performance Category
										C5 Category 5
										C6 Category 6
										C6A Category 6A
										C5e Category 5e
										M 10/100 Mbit
										G1 10/100/1000 Mbit
										G10 10 Gbit
										U Unshielded
										MP 10/100 Mbit with POE
										MP+ 10/100 Mbit with POE+

Type codes

Creation date April 16, 2021 3:43:34 AM CEST

Catalogue status 09.04.2021 / We reserve the right to make technical changes.

Recommended wave soldering profiles

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Single Wave:



Double Wave:



Wave soldering profiles

Wired connection elements should be processed in accordance with the DIN EN 61760-1 standard. We have included two recommendations for practical wave soldering profiles, with which Weidmüller PCB terminals and connectors are qualified.

When choosing a suitable profile for your application, the following factors also need to be considered:

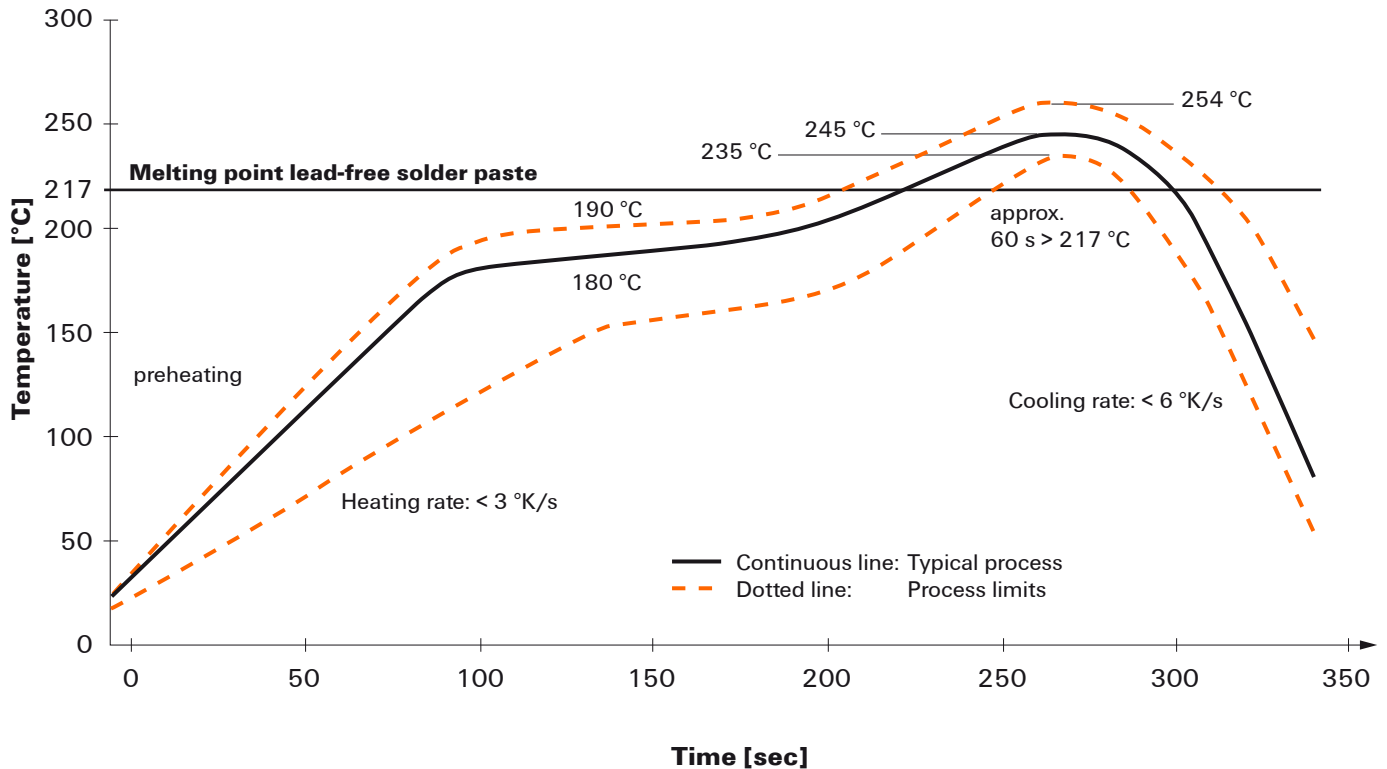
- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

The single and double wave profiles each indicate the recommended operating range, including the maximum soldering temperature of 260°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.

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Recommended reflow soldering profile

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Reflow soldering profile

The perfect soldering profile for SMT Surface Mount Technology is one the most exiting question in SMT production. But there are more than one correct answer: The diagram of temperature-on-time is related to processing features of solder paste and to maximum load of components.

We have to consider the following parameters:

- Time for pre heating
- Maximum temperature
- Time above melting point
- Time for cooling
- Maximum heating rate
- Maximum cooling rate

We recommend a typical solder profile with associated process limits. With preheating components and board are prepared smoothly for the solder phase. Heating rate is typically $\leq +3\text{K/s}$. In parallel the solder paste is 'activated'. The time above melting point of 217°C the paste gets liquid and components and boards begin to connect. The maximum temperature of 245°C to 254°C should stay between 10 and 40 seconds. In the cooling phase at $\geq -6\text{K/s}$ solder is cured. Board and components cool down while avoiding cold cracks.