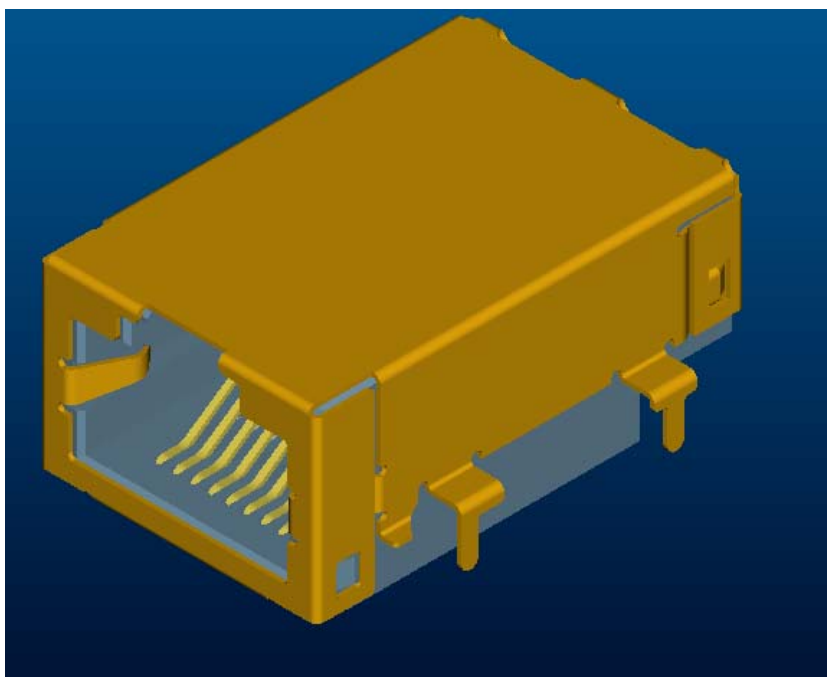




# PRODUCT SPECIFICATION



Acron P/N:GDI20-N3-080KX00

育鼎精密工業股份有限公司  
ACRON PRECISION INDUSTRIAL CO., LTD

桃園縣八德市廣德里新興路 55 號

No.55, SinSing Road., Bade City, Taoyuan County 334, Taiwan(R.O.C)

TEL : 886-3-3629889 FAX : 886-3-3664917

☐ 東莞睦永電子五金廠  
(AMMI)

☐ 東莞育鼎電子五金廠  
(ACRON)

☒ 東莞愷興電子科技電子有限公司  
(NUCONN)

REVISION:	ECR/ECN INFORMATION:		PRODUCT NO	GDI20-N3-080KX00	SHEET No
B	EC No:	RD-140380	PRODUCT NAME	Low profile single port RJ45 10/100 Base-T	1 of 9
DATE:	2014/10/06				
DOCUMENT NUMBER:		CREATED / REVISED BY:		CHECKED BY:	APPROVED BY:
PS-GD-0017		BRIAN.TAN		JEFF	KIMI



# PRODUCT SPECIFICATION

## 1.0 SCOPE

This Product Specification covers the performance requirements for Low profile single port RJ45 10/100 Base-T connector series.

## 2.0 PRODUCT DESCRIPTION

### 2.1 PRODUCT NAME AND SERIES NUMBER(S)

Low profile single port RJ45 10/100 BASE-T series. Nuconn part No:GDI20-N3-080KX00,

### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See appropriate sales drawings for details on dimensions ,materials , plating and markings.

### 2.3 SAFETY AGENCY APPROVALS

See appropriate sales drawings

### 2.4 PRODUCT WEIGHT

The product weight is 5.72g

### 2.5 PRODUCING PLANT FACTORY AND ADDRESS

Producing plant factory: Nuconn Industry CORP

Coil plant factory: DongGuan Nuconn Industry CORP.or MinXin Electronic CORP  
or Vetak Electronic CORP .

DongGuan Nuconn Industry CORP. Address:

Nr.32,RongFu Rd.,3<sup>rd</sup> Industrial District,ShangSha Village,,ChangeAn Town,DonGuan  
City,GuangDong

MinXin Electronic CORP.Address:

Qianwei City industrial park,SiChuan

Vetak Electronic CORP. Address

XinZhai Village, Sansui city , GuiZhou,

## 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Please refer to the Sales Drawings , and other sections of this Specification for specific references to applicable documents and specifications. In cases where the Product Specification differs from the Sales Drawings, the Sales Drawing will take precedence

### 3.1 TURNS RATIO:

(P1-P2) : (J1-J2) : 1CT:1CT $\pm$ 5%

(P4-P5) : (J3-J6) : 1CT:1CT $\pm$ 5%

### 3.2 INDUCTANCE:

(P1-P2) : 360~580uH . @0.1V,100KHz, 8mA DC Bias

(P4-P5) : 360~580uH . @0.1V,100KHz, 8mA DC Bias

### 3.3 LEAKAGE INDUCTANCE:

P1-P2(Short J1-J2) : 0.3 uH MAX, @1MHz

P4-P5(Short J3-J6) : 0.3 uH MAX, @1MHz

REVISION:	ECR/ECN INFORMATION:		PRODUCT NO	GDI20-N3-080KX00	SHEET No
B	EC No:	RD-140380	PRODUCT NAME	Low profile single port RJ45 10/100 Base-T	2 of 9
	DATE:	2014/10/06			
DOCUMENT NUMBER:		CREATED / REVISED BY:		CHECKED BY:	APPROVED BY:
PS-GD-0017		BRIAN.TAN		JEFF	KIMI



# PRODUCT SPECIFICATION

## 3.4 INTER-WINDING CAPACITANCE :

(P1,P2,P3) TO (J1,J2) :35pf MAX, @1MHz  
(P4,P5,P6) TO (J3,J6) :35pf MAX, @1MHz

## 3.5 DC RESISTANCE:

(J1-J2) and (J3-J6) : 1.2 ohms MAX

## 3.6 RETURN LOSS :

(P1-P2) (P4-P5) @LOAD 100 ohm  
1~30MHz:-18dB MIN  
30~ 60MHz : -16dB MIN  
60~ 80MHz : -12dB MIN

## 3.7 INSERTION LOSS

(J1,J2) TO (P1,P2) and (J3,J6) TO (P4,P5): 1~100Mhz :-1.0dB Max

## 3.8. CROSS TALK:

TX to RX.:1-100 MHz : -30dB MIN

## 3.9. COMMON TO COMMON MODE REJECTION:

(J1,J2) to (P1,P2) and (J3,J6) to(P4,P5): 1~100Mhz :-35dB MIN

## 3.10. HI-POT:

(J1,J2) TO (P1,P2,P3) : 1500 VAC or 2250VDC 60SEC@60Hz  
(J3,J6) TO (P4,P5,P6) : 1500 VAC or 2250VDC 60SEC@60Hz

## 3.11.RATING CURRENT :750mA MAX

## 3.12 DIFFERENTIAL VOLTAGE vp-p:10V MAX.

## 3.13 TEMPERATURE

Operating Temperature Range: 0°C to +85°C

Storage Temperature Range: - 40°C to + 85°C

## 4.0 PERFORMANCE

Item	Test Items	Requirement	Procedures
1	Examination of Product	Meets requirements of product drawing. No physical damage.	Visual, dimensional and functional per applicable quality inspection plan.

REVISION:	ECR/ECN INFORMATION:		PRODUCT NO	GDI20-N3-080KX00	SHEET No
B	EC No:	RD-140380	PRODUCT NAME	Low profile single port RJ45 10/100 Base-T	3 of 9
	DATE:	2014/10/06			
DOCUMENT NUMBER:		CREATED / REVISED BY:		CHECKED BY:	APPROVED BY:
PS-GD-0017		BRIAN.TAN		JEFF	KIMI



# PRODUCT SPECIFICATION

## Electrical Requirements

2	<b>LOW Contact Resistance</b>	30 mΩ max initial ΔR = 30 mΩ max final	Mate subject connector with compatible connector. EIA-364-23B
3	<b>Insulation Resistance</b>	1000 MΩ min initial 50 MΩ min final	Apply 100±10% Volts DC between adjacent contacts of mated connectors for one minute. EIA-364-21
4	<b>Dielectric Withstanding Voltage</b>	No discharge, flashover or breakdown. Current leakage: 1 mA max	For mated specimens, 2250VDC or 1500VAC 60 sec, between connected RJ interface contacts and all PCB tails connected together with shield. 1 milliampere cutoff current, 500 Volts per second maximum ramp. EIA-364-20

## Mechanical Requirements

5	<b>Mating and Un-mating Forces</b>	Insertion Force: 22N max Unlatched Withdrawal Force: 22N max Latched Withdrawal Force: 89N min	Measure force necessary to mate and un-mate connectors using the free floating fixtures at rate of 25mm/min. EIA-364-05B
6	<b>Solder ability</b>	Wetting must occur over at least 95% of the solder immersion surface	Solder: SN/3.0Ag/0.5Cu, Flux: ROSIN 25%, IPA 75%. High Temp Storage: 150°C 1 hour, PCT: 105°C 100% 1.22*10 <sup>5</sup> Pa 4 hours. Solder 240°C ± 2°C; Immersion depth 2mm; Immersion time 3S
7	<b>Terminal Strength</b>	Appearance meet requirement	Gravitation 500g, Winding 90 angle 2-3sec
8	<b>KOJIRI Strength</b>	Appearance meet requirement	Left: 100N, push 15sec Right: 100N, push 15sec Up: 100N, push 15sec Down: 100N, push 15sec

REVISION:	ECR/ECN INFORMATION:		PRODUCT NO	<b>GDI20-N3-080KX00</b>	SHEET No
<b>B</b>	EC No:	<b>RD-140380</b>	PRODUCT NAME	Low profile single port RJ45 10/100 Base-T	<b>4 of 9</b>
	DATE:	<b>2014/10/06</b>			
DOCUMENT NUMBER:		CREATED / REVISED BY:		CHECKED BY:	APPROVED BY:
<b>PS-GD-0017</b>		<b>BRIAN.TAN</b>		<b>JEFF</b>	<b>KIMI</b>



# PRODUCT SPECIFICATION

9	<b>Solder Joint Strength Test</b>	(1) The variation must be 50 % $\leq$ of the initial value (2) After test measured items must be 75 % $\leq$ of solder (Pb/Sn) item	(1)Temp Cycle Test Min Temp: -40°C . MAX TEMP:+125°C TIME : Each 30 min. CYCLES:200 (2) Measurement Item: Component with LEAD: Tension Test (EIAJED-4702); Component without LEAD: Bend Test (EIAJED-4702) (3) Measurement cycle: INITIAL,(100) 200 (4) Measurement SMPL: Component with LEAD: 5LEADS $\leq$ Component without LEAD: 5POINTS $\leq$ To calculate Average
10	<b>Physical Shock</b>	No electrical discontinuity greater than 1 $\mu$ second. Shall meet visual requirements, and show no physical damages.	Subject mated connectors to 50 G's (peak value) half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks). The electrical load condition shall be 100mA maximum for all contacts. EIA-364-27B
11	<b>Durability</b>	200 cycles with no function damage for RJ-45. Low Level Contact Resistance: $\Delta R = 30m\Omega$ max final	The sample should be mounted in the tester and fully mated and unmated 300 times per hour at the rate of 25mm/min. EIA-364-09C
12	<b>Random Vibration</b>	No electrical discontinuity greater than 1 $\mu$ second. Shall meet visual requirements, and show no physical damages.	The electrical load condition shall be 100mA maximum for all contacts. Subject to a simple harmonic motion having amplitude of 0.76mm (1.52mm maximum total excursion) in frequency which being varied uniformly between the approximate limits of 10 and 55 Hz. The entire frequency range, from 10 to 55 Hz and return to 10 Hz, shall be traversed in approximately 1 minute. This motion shall be applied for 2 hours in each of three mutually perpendicular directions. EIA-364-28D

REVISION:	ECR/ECN INFORMATION:		PRODUCT NO	<b>GDI20-N3-080KX00</b>	SHEET No
<b>B</b>	EC No:	<b>RD-140380</b>	PRODUCT NAME	Low profile single port RJ45 10/100 Base-T	<b>5 of 9</b>
	DATE:	<b>2014/10/06</b>			
DOCUMENT NUMBER:		CREATED / REVISED BY:		CHECKED BY:	APPROVED BY:
<b>PS-GD-0017</b>		<b>BRIAN.TAN</b>		<b>JEFF</b>	<b>KIMI</b>



# PRODUCT SPECIFICATION

## Environment Requirements

13	Thermal Shock (Simulate Non-Operating State)	$\Delta$ R: 30m $\Omega$ max (change from initial) & Appearance: no damage	Subject mated connectors to 100 cycles between -40℃ and 85℃ , 30 minutes duration at both temperature extremes. EIA-364-32C															
14	Humidity-Temperature Cycling	$\Delta$ R: 30m $\Omega$ max (change from initial) & Appearance: no damage	Mated connectors placed in humidity chamber (Humidity 80-98%, Temperature 20-65℃) for 500 Hrs. EIA-364-31B, Method IV, Except 7a															
15	Temperature Life (Heat Aging)	$\Delta$ R: 30m $\Omega$ max (change from initial) & Appearance: no damage	Subject mated connectors to temperature life at 85℃ for 500 hours. EIA-364-17B, Method A															
16	Temperature Life (Cold Aging)	$\Delta$ R: 30m $\Omega$ max (change from initial) & Appearance: no damage	Subject mated connectors to temperature life at -40℃ for 500 hours EIA-364-17B, Method A															
17	Salt Spray	$\Delta$ R: 30m $\Omega$ max (change from initial) & Appearance: no damage	8hours moving 16hours resting total 24hours 3cycles Atmosphere: salt spray from a 5% solution. Temperature: 35 +1/-2℃ EIA 364-26															
18	Damp Heat, Steady State	JIS C 0022 JEC Pub.68 2-3 Ca MIL-STD-202 103B	Test Temp :40±2℃ Relative Humidity:90～95%RH Test time:500Hrs															
19	Change of Temperature	JIS C 0025 JEC Pub.68 2-14 NA MIL-STD-202 102A (Unless otherwise specified, either method 1 or method 2. is to be chosen)	<div><div><div><div><div></div><div></div><div></div><div></div></div><div>Metod1</div><div><div><div></div><div></div><div></div><div></div></div><div>t<sub>1</sub></div><div>t<sub>2</sub></div><div>t<sub>3</sub></div><div>t<sub>4</sub></div><div>10cycles</div></div><div><div><div></div><div></div><div></div><div></div></div><div>Metod2</div><div><div><div></div><div></div><div></div><div></div></div><div>t<sub>1</sub></div><div>t<sub>2</sub></div><div>t<sub>3</sub></div><div>t<sub>4</sub></div><div>10cycles</div></div></div><div><div>(Both Method 1 and 2 are performed under following conditions)</div><table><tr><th>Stage</th><th>Temp</th><th>Time</th></tr><tr><td>t1</td><td>-40°</td><td>30min</td></tr><tr><td>t2</td><td>5~35℃</td><td>Less than 5min</td></tr><tr><td>t3</td><td>85°</td><td>30min</td></tr><tr><td>t4</td><td>5~35℃</td><td>Less than 5min</td></tr></table><div>Number of test cycles:100cycles</div></div></div></div></div>	Stage	Temp	Time	t1	-40°	30min	t2	5~35℃	Less than 5min	t3	85°	30min	t4	5~35℃	Less than 5min
Stage	Temp	Time																
t1	-40°	30min																
t2	5~35℃	Less than 5min																
t3	85°	30min																
t4	5~35℃	Less than 5min																
20	Ammonia	Appearance: no damage	Hydrogen Ion Exponent Index (PH)=10 Test Temperature:15~35℃ Test Time:72±4hrs															

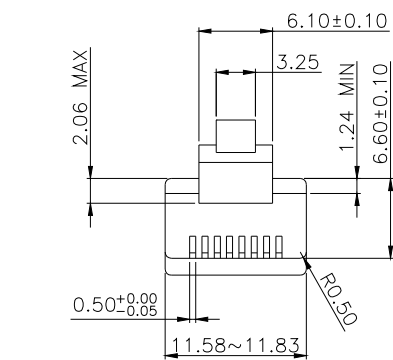
REVISION:	ECR/ECN INFORMATION:		PRODUCT NO	<b>GDI20-N3-080KX00</b>	SHEET No
<b>B</b>	EC No:	<b>RD-140380</b>	PRODUCT NAME	Low profile single port RJ45 10/100 Base-T	<b>6 of 9</b>
	DATE:	<b>2014/10/06</b>			
DOCUMENT NUMBER:		CREATED / REVISED BY:		CHECKED BY:	APPROVED BY:
<b>PS-GD-0017</b>		<b>BRIAN.TAN</b>		<b>JEFF</b>	<b>KIMI</b>

21	<b>Soldering Heat</b>	<p>1: Electrical and mechanical performance must be satisfactory in specifications</p> <p>2: There must be no conspicuous changes in appearance (For example warping, swelling, cracking, indication)</p>	<p><b>MATERIALS</b> Solder : Sn/99Ag/0.3/Cu0.7 (Weight%) If no doubts arise in judgment, it is ok to use another</p> <p><b>SOLDER TEST CONDITION</b> 1 : TEST A: Flow Soldering (Partly Heating) 260±3°C 10S ≡ 2 : TEST B: Hand Soldering 400°C (Soldering iron tiop) 3S ≡</p>
----	-----------------------	---	--

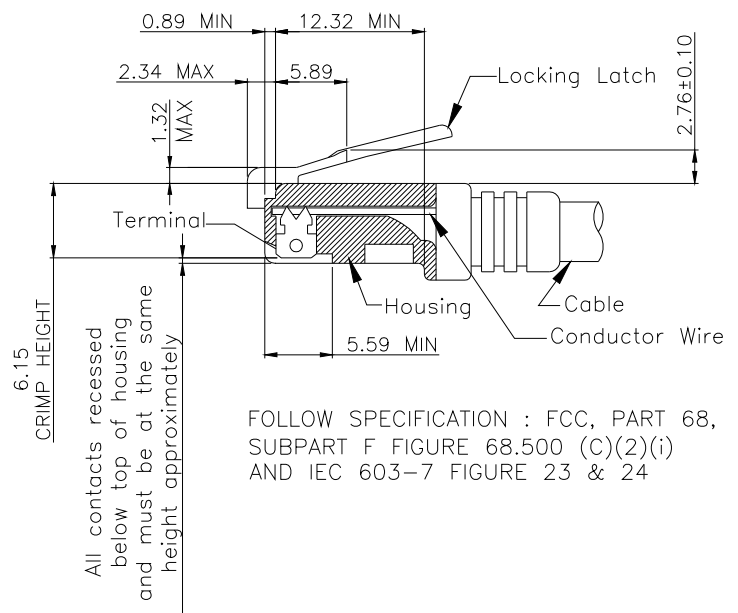
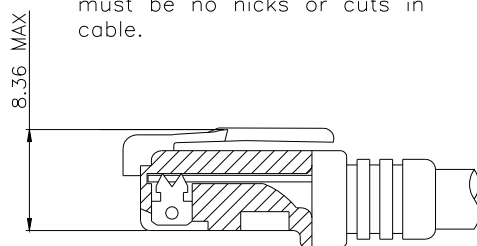
## 5.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage. See packaging appropriate drawings

## 6.0 RECOMMENDED RJ PLUG SPECIFICATION



\* There must be no damage to housing or locking latch. There must be no nicks or cuts in cable.



FOLLOW SPECIFICATION : FCC, PART 68, SUBPART F FIGURE 68.500 (C)(2)(i) AND IEC 603-7 FIGURE 23 & 24

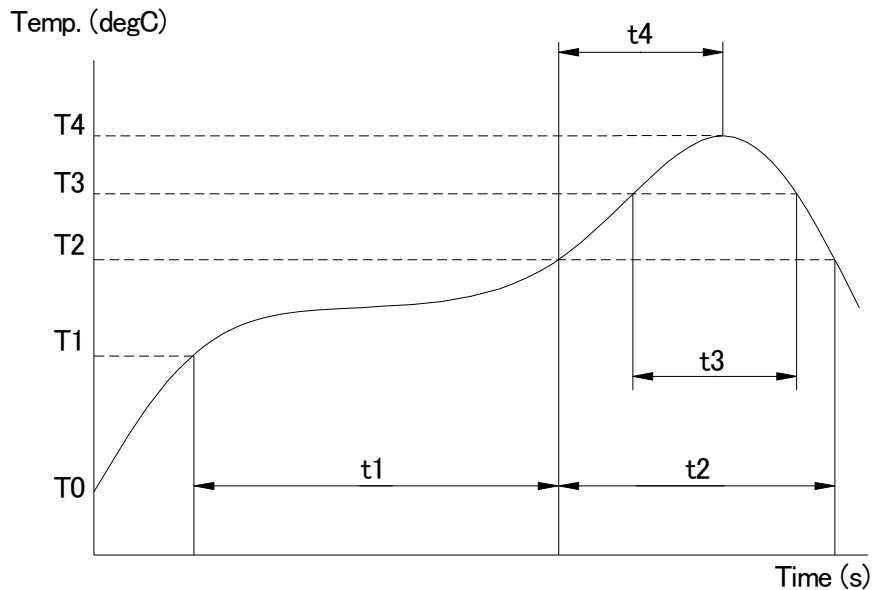
FOLLOW SPECIFICATION : FCC, PART 68, SUBPART F FIGURE 68.500 (C)(2)(ii)

REVISION:	ECR/ECN INFORMATION:	PRODUCT NO	<b>GDI20-N3-080KX00</b>		SHEET No
<b>B</b>	EC No: DATE:	<b>RD-140380</b> <b>2014/10/06</b>	PRODUCT NAME	Low profile single port RJ45 10/100 Base-T	<b>7 of 9</b>
DOCUMENT NUMBER: <b>PS-GD-0017</b>		CREATED / REVISED BY: <b>BRIAN.TAN</b>		CHECKED BY: <b>JEFF</b>	APPROVED BY: <b>KIMI</b>



# PRODUCT SPECIFICATION

## 7.0 RECOMMENDED REFLOW SOLDERING PROFILE

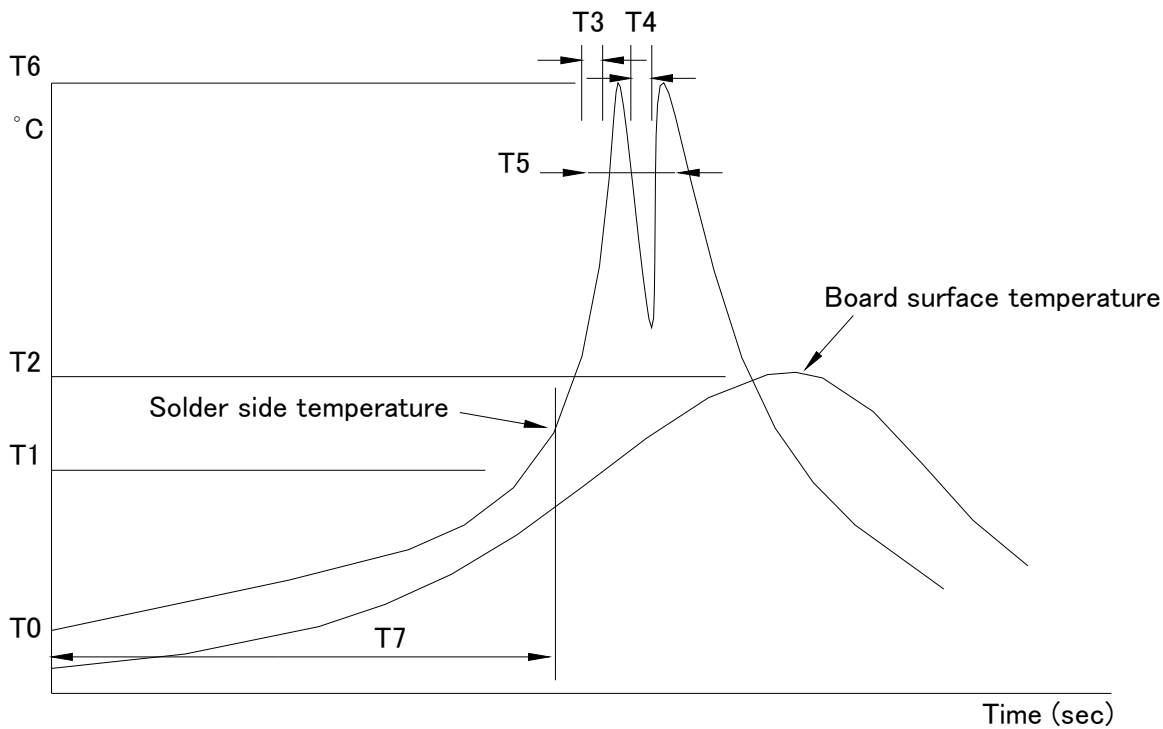


Start temperature		T0	35degC(Reference)
Preheating	Temperature	T1-T2	150-195degC
	Time	t1	160sec.
Heating time		t2/T2	115sec./195degC
		t3/T3	60sec./225degC
Peak temperature		T4	245degC
Time to peak temperature		T4	40-90sec.
Rate of rising temperature		T0-T1	1-5degC/sec.
		T2-T4	1-3degC/sec.
Peak temperature(Soldering points)			230degC
Number of tests			3times

REVISION:	ECR/ECN INFORMATION:		PRODUCT NO	GDI20-N3-080KX00	SHEET No
B	EC No:	RD-140380	PRODUCT NAME	Low profile single port RJ45 10/100 Base-T	8 of 9
	DATE:	2014/10/06			
DOCUMENT NUMBER:		CREATED / REVISED BY:		CHECKED BY:	APPROVED BY:
PS-GD-0017		BRIAN.TAN		JEFF	KIMI



## 8.0 RECOMMENDED WAVE SOLDERING PROFILE



	T0	25~35°C (Room temperature)	
Start temperature	T1	90~120°C	
Pre-heat time	T7	MAX 180s	
Soldering time(solder side)	T6	MAX 260+3°C	
Soldering temperature(board surface)	T2	MAX 150°C	cradle use
Soldering temperature(board surface)	T2	MAX 170°C	cradle no use
Soldering time	T3	1st wave 1±0.5s	MAX temperature time
	T4	2nd wave 3±1s	MAX temperature time
Max temperature arrival time	T7	180~210(MAX) s	
225°C over time	T5	3~15 s	
solder time		two time	

REVISION:	ECR/ECN INFORMATION:		PRODUCT NO	GDI20-N3-080KX00	SHEET No
<b>B</b>	EC No:	RD-140380	PRODUCT NAME	Low profile single port RJ45 10/100 Base-T	9 of 9
	DATE:	2014/10/06			
DOCUMENT NUMBER:		CREATED / REVISED BY:		CHECKED BY:	APPROVED BY:
<b>PS-GD-0017</b>		<b>BRIAN.TAN</b>		<b>JEFF</b>	<b>KIMI</b>