



# SPECIFICATION

**PART NO.** 020180MB0M7M417ZA

**DESCRIPTION.** RJ45+STACK USB W/LED & TRANSFORMER

**CUSTOMER.** \_\_\_\_\_

**REV.:** PB

**REV. DATE :** 2006 / Jul / 11

	APPROVED	CHECKED	PREPARED
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### 1 P/N SPECIFICATION

SUYIN P/N: **020180M** **B** **0M** **7** **M4** **17** **ZA**  
A B C D E

A. Transformer Speed: **10/100 Base-T**  
 LED Polarity: **Normal**

B. Schematic: Refers to section 6.1

C. LED Color Code:

w/o LED: 0		RIGHT LED					
		YELLOW	GREEN	ORANGE	G/O	G/Y	O/G
LEFT LED	YELLOW	1	7	D	K	N	R
	GREEN	2	8	E	L	P	S
	ORANGE	3	9	F	M	Q	T
	G/O	4	A	G	/	/	/
	G/Y	5	B	H	/	/	/
	O/G	6	C	J	/	/	/

D. RJ Contact Plating:

- M2: Gold Flash selected Gold plating over 50 u" min. Nickel
- M3: 10u" selected Gold plating over 50 u" min. Nickel
- M4: 15u" selected Gold plating over 50 u" min. Nickel
- M5: 30u" selected Gold plating over 50 u" min. Nickel
- M6: 50u" selected Gold plating over 50 u" min. Nickel.

E. Mechanical Series: Refers to section 2.1~2.2

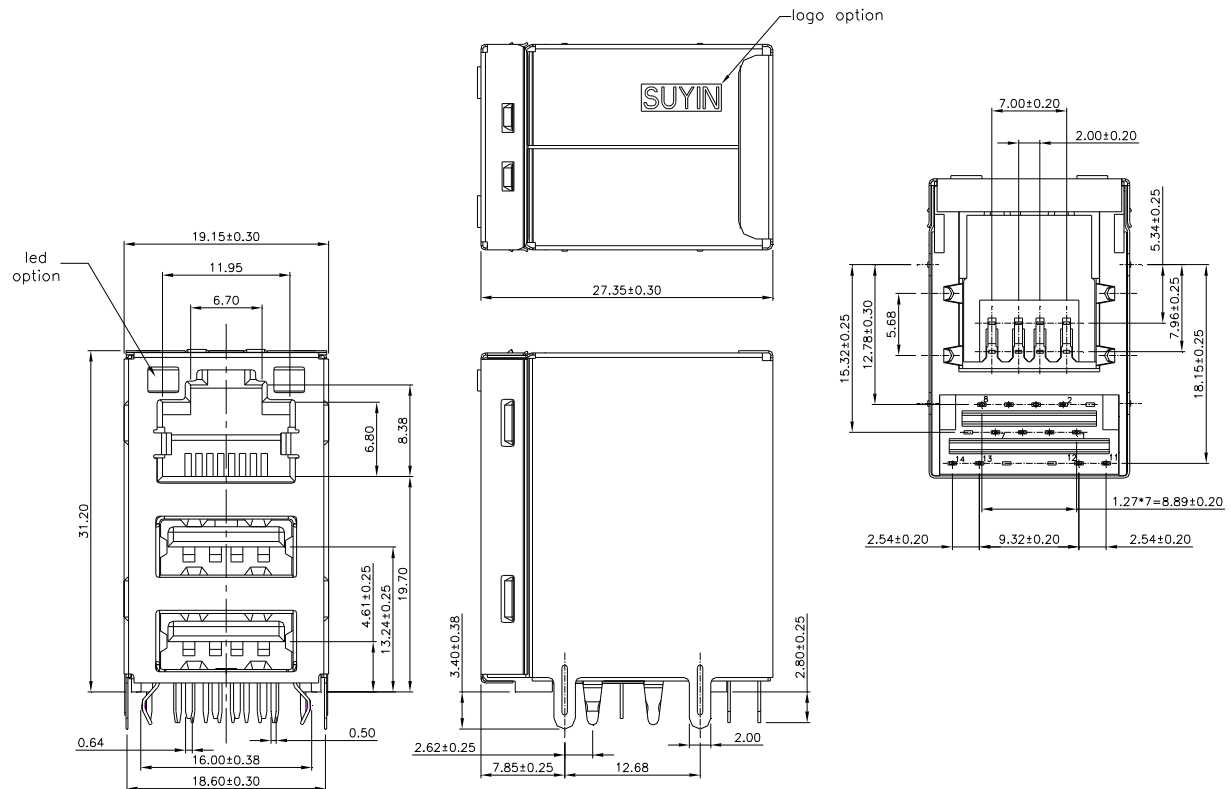
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### 2 MECHANICAL DIMENSIONS

#### 2-1 Dimensions



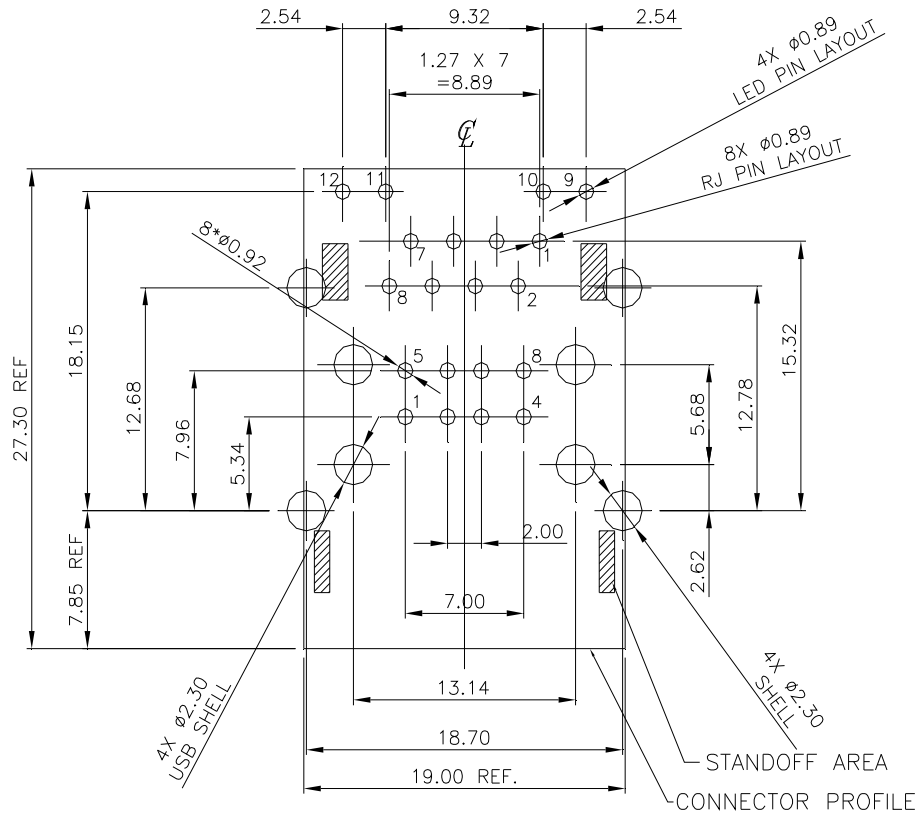
General Tolerance : 0~10mm: ±0.10  
 10~30mm: ±0.20  
 30~ mm : ±0.30

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### 2-2 PCB Layout



RECOMMENDED PCB LAYOUT  
 COMPONENT SIDE PCB THICKNESS : 1.60mm  
 ALL DIMENSION TOLERANCE ARE  $\pm 0.05$  UNLESS OTHERWISE SPECIFIED

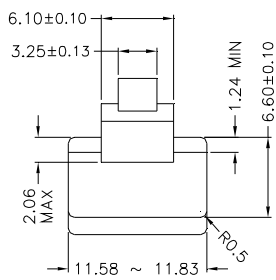
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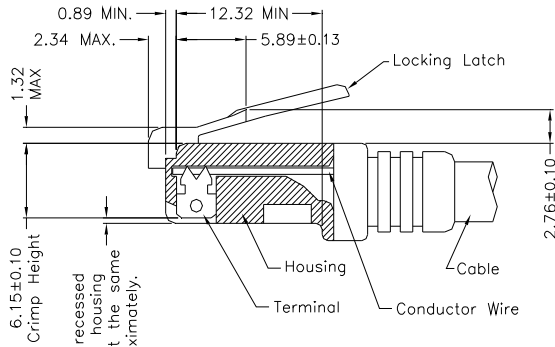
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### 3 RECOMMEND RJ PLUG SPECIFICATION

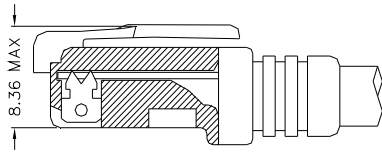


- \* There must be no damage to housing or locking latch. There must be no nicks or cuts in cable.
- \* Durability : 750 cycles generally



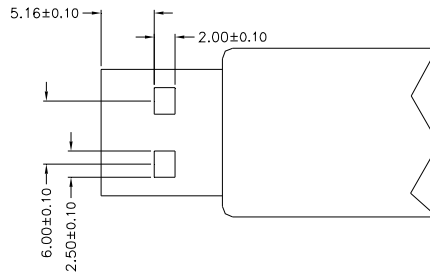
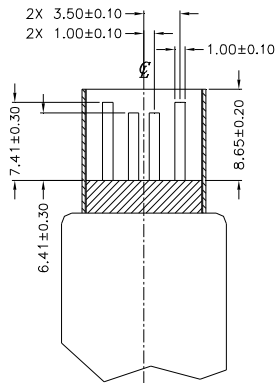
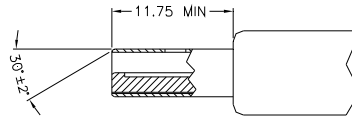
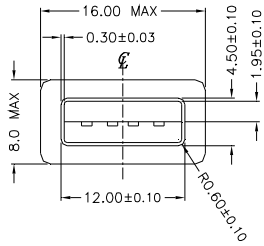
All contacts recessed below top of housing and must be at the same height approximately.

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)

### 4 RECOMMEND USB PLUG SPECIFICATION



FOLLOW SPECIFICATION : Universal Series Bus Figure 6-9. USB Series A Plug Interface Drawing

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### 5 MATERIAL SPECIFICATION

5-1 RoHS Compliance per EU Directive 2002/95/EC

5-2 Plastic Housings:

- A. RJ Housing: PBT, UL 94V-0, Black
- B. USB Housing: PBT, UL94V-0, Black
- C. Spacer: PBT, UL94V-0, Black
- D. Transformer Housing: Phenolic, UL94V-0, Black

5-3 Terminals:

- A. RJ Contacts: Phosphor Bronze
- B. RJ Solder Pins: Brass
- C. LED Solder Pins: Brass
- D. USB Contacts & Solder Pins: Phosphor Bronze

5-4 Shields:

- A. Front and Back Shield: Stainless Steel
- B. USB Shield: Brass

5-5 Plating:

- A. RJ Contacts: As P/N specified
- B. RJ Solder Pins: 100u" min. Matte Tin over 50u" Nickel under-plating
- C. LED Solder Pins: 100u" min. Matte Tin over 50u" Nickel under-plating
- D. USB Contact & Solder Pins: Selected GF/ Matte Tin plating over 50u" Nickel under-plating
- E. Shield Grounding Legs: Pre-soldering, Sn/ Ag/ Cu ( 96.5/ 3/ 0.5 )
- F. USB Shield: 100u" min. Tin over 50u" Nickel under-plating

5-6 PCB: FR-4, Two Layer PCB

5-7 Internal Solder Joints: Sn/ Ag/ Cu ( 96.5/ 3/ 0.5 )

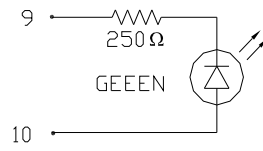
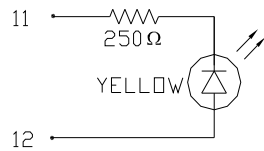
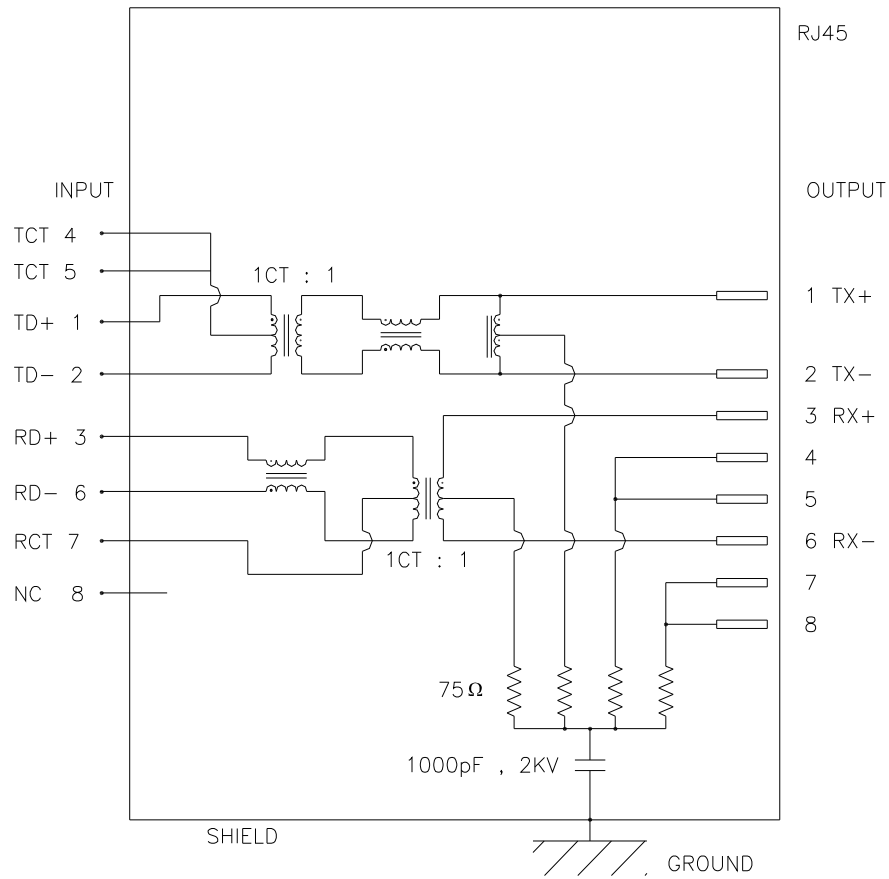
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### 6 ELECTRICAL CHARACTERISTICS

#### 6-1 Schematic



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6-2 Transmitter & Receiver Filter:

Insertion Loss (dB MAX)	Return Loss at 100Ω (dB MIN)		
1~100MHz	1~30MHz	30~60MHz	60~80MHz
-1.0	-18	-16	-12

6-3 Common Mode Rejection @ 1~100 MHz: -30dB MIN

6-4 Cross Talk @ 1~100 MHz: -35dB MIN

6-5 Inductance @ 100KHz/ 0.1V, 8mA DC BIAS: 350μH MIN

6-6 HiPot Test: 1500Vrms, 60sec

6-7 LED:

Forward Voltage (V) @ 20mA	
Typical	MAX
2.2	2.6

## 7 OPERATING & TEST REQUIRMENTS

Product is designed to meet electrical, mechanical and environmental performance requirements specified below. All tests are performed at ambient environmental conditions per MIL-STD-1344A and EIA-364 unless otherwise specified

7-1 Operating Temperature Range: 0°C TO +70°C

7-2 Storage Temperature: -40°C to 85°C

7-3 USB module complies with USB 2.0 standards

7-4 USB Ratings

1. Insulation Resistance: 1000 M Ohm(MIN)
2. Contact Resistance : 25 m Ohm(MAX)
3. Dielectric Withstanding Voltage: 750 VAC



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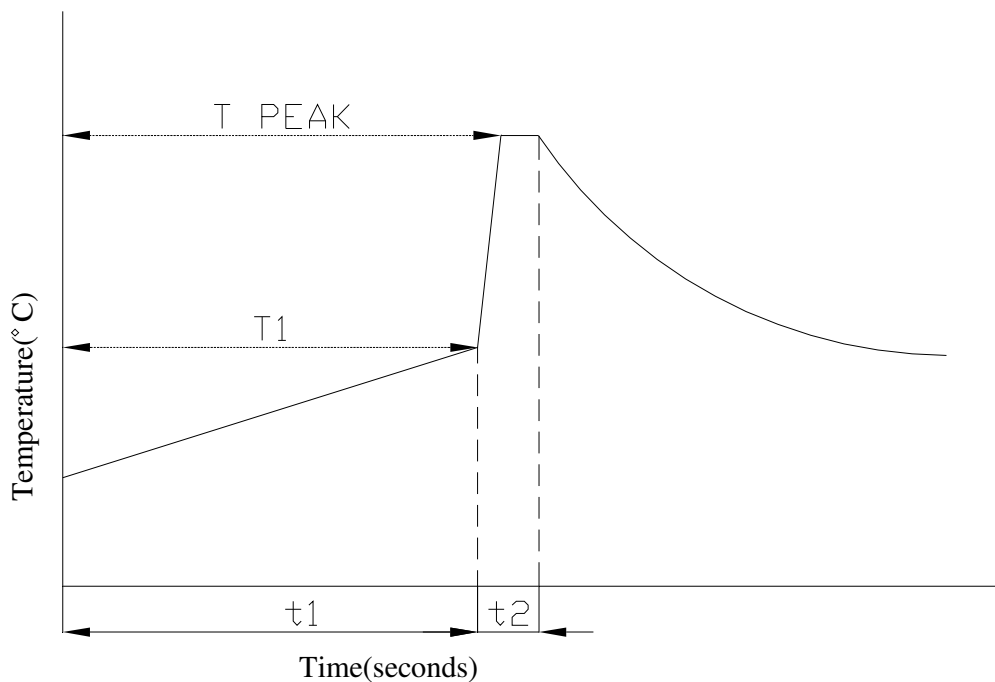
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### 8 STORAGE REQUIRMENTS

All products shall be packaged against any physical damage and corrosion during shipment or in storage.

### 9 RECOMMEND WAVE SOLDERING PROFILE



PARAMETER	REFERENCE	LEAD FREE SPECIFICATION
PREHEAT TEMPERATURE GRADIENT		$+1\sim 4^{\circ}\text{C}/\text{sec}$
PREHEAT TIME	$t_1$	2~3 MIN
PREHEAT TEMPERATURE	$T_1$	$>100^{\circ}\text{C}$
SOLDER POT TEMPERATURE	$T$ PEAK	$260^{\circ}\text{C} \pm 5^{\circ}\text{C}$
DWELL TIME	$t_2$	3.5 SEC
PEAK BOARD TOP TEMPERATURE		$190^{\circ}\text{C}$
COOLING TEMPERATURE GRADIENT		$-6^{\circ}\text{C}/\text{SEC MAX.}$