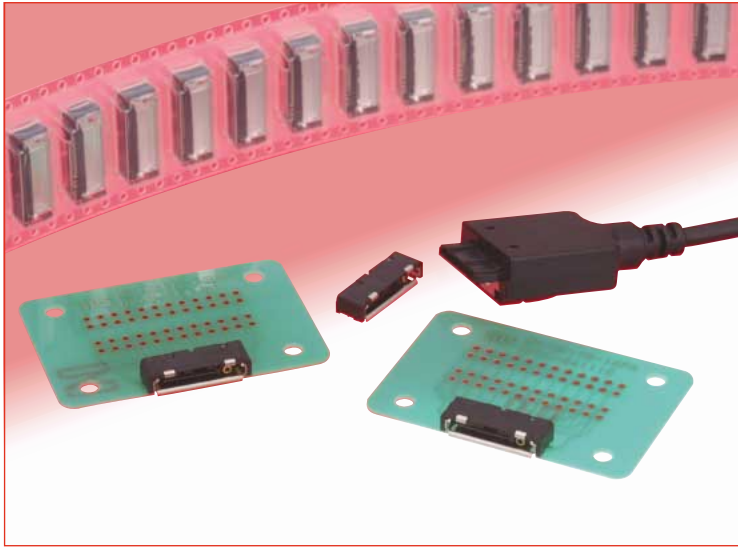
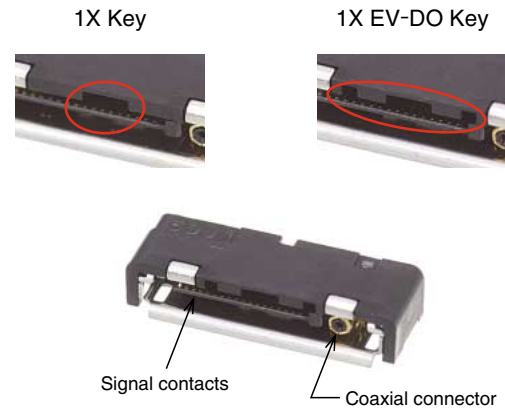


# Interface Connectors for CDMA Type Cellular Phones

## MQ/SF178 Series



Two interface configurations



### ■ Features

#### 1. Complies with the requirements of NC-R1-18 standards

Interface configuration also complies with the requirements for the CDMA cellular phone of KDDI Corporation.

#### 2. Meets the trend for common AC adapters

Two interface configurations:

- For CDMA2000 1X
- For CDMA2000 1X EV-DO

#### 3. Low-profile and small PCB mounting space

The height of 3.9mm and depth of 6.5 mm makes it suitable for use in miniature cellular phones.

#### 4. Damage protection

Protective cover over the metal shell provides resistance excessive forces encountered in consumer applications, when mated with corresponding plug.

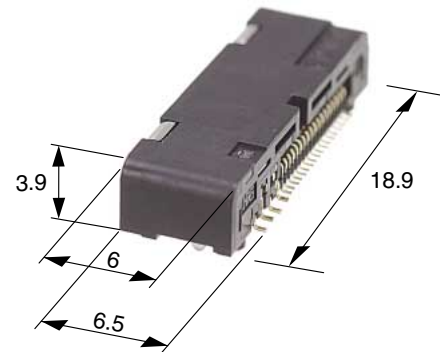
#### 5. RoHS Compliance

All components and materials comply with applicable RoHS directives.

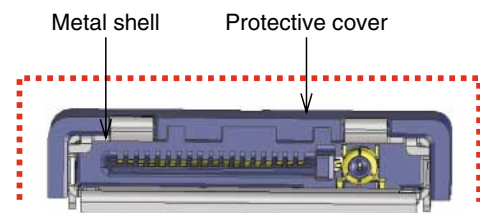
### ■ Application

CDMA 2000 1X or 2000 1X EV-DO cellular phone

Low profile / Small PCB mounting space



Damage protection



## ■ Specifications

Rating	Current rating 0.5A (2A can be carried via 2 random contacts)	Operating temperature range : -30°C to +80°C
	Voltage rating 100V AC	Storage temperature range : -40°C to +85°C

Characteristic	Specification	Conditions
1. Contact resistance	50m Ω max.	100mA
2. Insulation resistance	1000 M Ω	250V DC (Signal) 100V DC (Coaxial)
3. Dielectric withstanding voltage	No flashover or insulation breakdown.	350V AC / one minute (Signal) 100V AC / one minute (Coaxial)
4. Vibration	No electrical discontinuity of 1 μ sec. Max. Contact resistance: 75 m Ω max.	Frequency: 10 to 55 Hz, single amplitude of 1.5mm, 2 hours, 3 axis.
5. Shock	No electrical discontinuity of 1 μ sec. Max. Contact resistance: 75 m Ω max.	Acceleration of 490m/s <sup>2</sup> , 11 ms duration, sine half-wave waveform, 3 cycles in each of the 3 axis.
6. Mating/un-mating forces	Mating: 29.4N max. Un-mating: 2N min.	With corresponding connector (including coaxial connector)
7. Durability (mating/un-mating)	Contact resistance: 75 m Ω max.	10,000 cycles
8. Temperature cycle	Contact resistance: 75 m Ω max. Insulation resistance: 1000 M Ω	Temperature : -55°C → +5°C to +35°C → +85°C → +5°C to +35°C Time : 30 → 5 → 30 → 5 (Minutes) 5 cycles
9. Humidity	Contact resistance: 75 m Ω max. Insulation resistance: 1000 M Ω (Dry state)	96 hours at temperature of 60°C and humidity of 90% to 95%
10. Salt spray	No corrosions.	5% salt water solution at 35 °C for 48 hours

Note: Includes temperature rise caused by current flow.

## ■ Materials

Part	Material	Finish	Remarks
Insulator	Polyamide	Black color	UL94V-0
Contacts	Copper alloy	Contact area and termination area: Selective gold plated	————
Shell	Stainless steel	Tin reflow plated	————

## ■ Ordering information

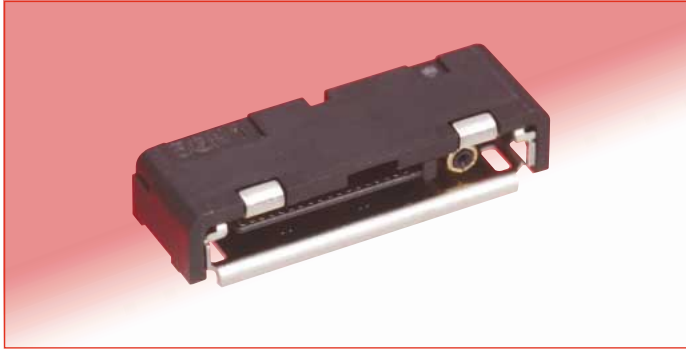
**MQ / SF178 - E - 18 P R (01)**

①                      ②                      ③                      ④                      ⑤                      ⑥

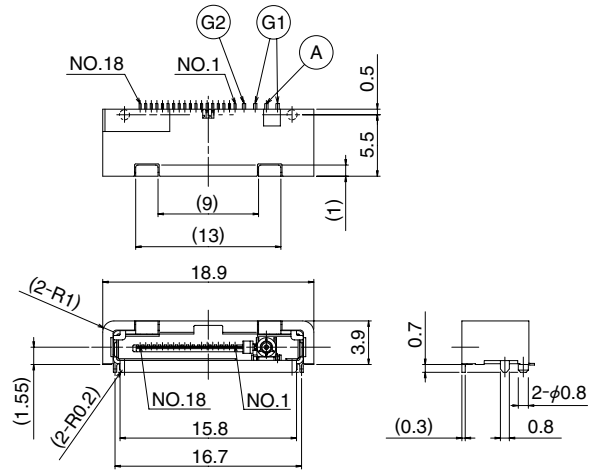
① Series name	MQ/SF178 Series (/SF: Built-in coaxial connector)
② Key type	C : CDMA2000 1X keys E : CDMA2000 1X EV-DO keys
③ Number of contacts	18 : 18
④ Type of contact	P : Male contact
⑤ Interface orientation	R : Reverse
⑥ Plating specifications	Blank : 0.2 μm min. thick at contact point, gold flash on termination area (01) : 0.5 μm min thick at contact point, gold flash on termination area

## Receptacles

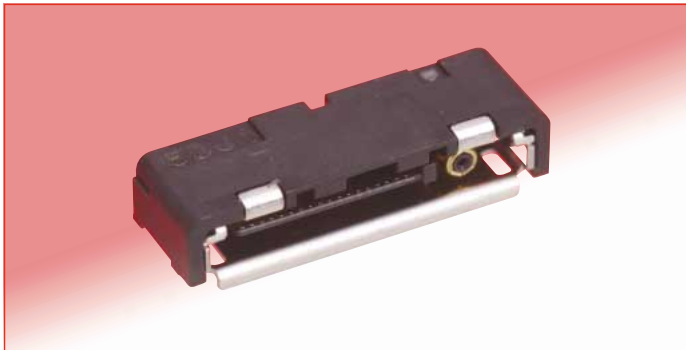
### CDMA2000 1X key type



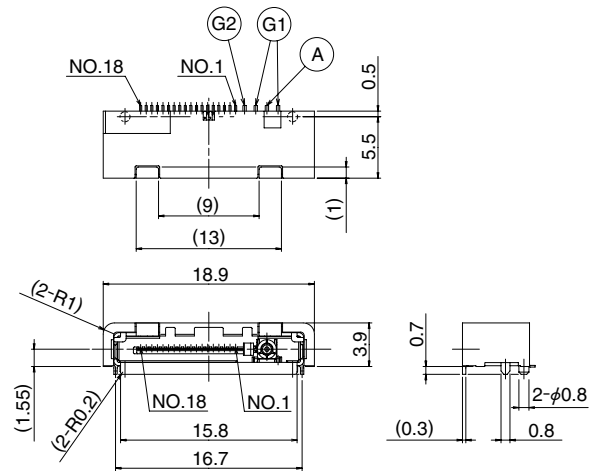
Part number	CL No.	Packaging	RoHS
MQ/SF178-C-18PR	206-2495-0	1,000 pieces per reel	YES



### CDMA2000 1X EV-DO key type

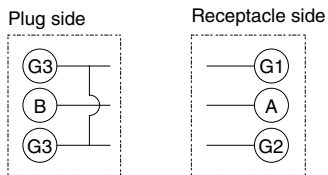


Part number	CL No.	Packaging	RoHS
MQ/SF178-E-18PR	206-2496-3	1,000 pieces per reel	YES



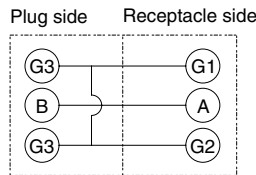
## Coaxial circuit diagram

Un-mated



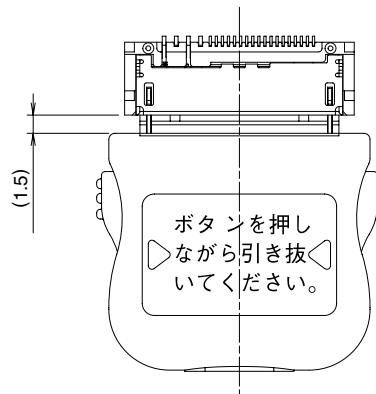
G1 and G2 are not connected.

Mated

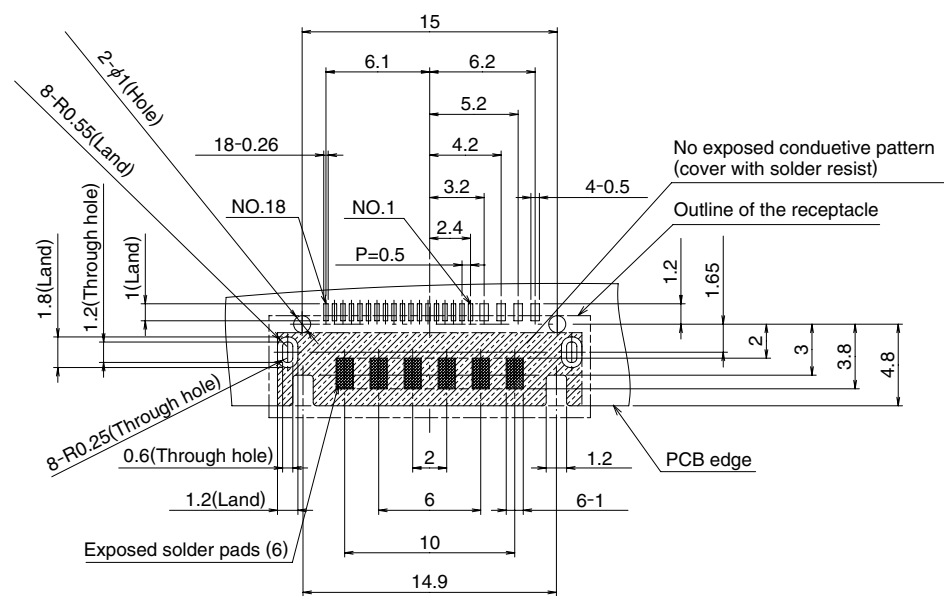


G1 and G2 are connected.

■ Mated condition (Shown for reference)

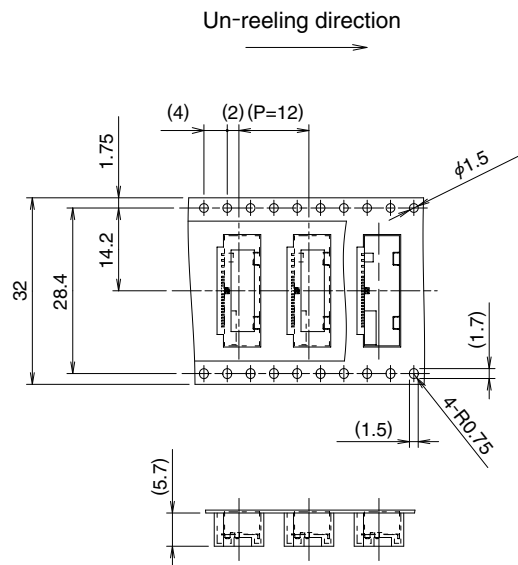


◆ Recommended PCB mounting pattern

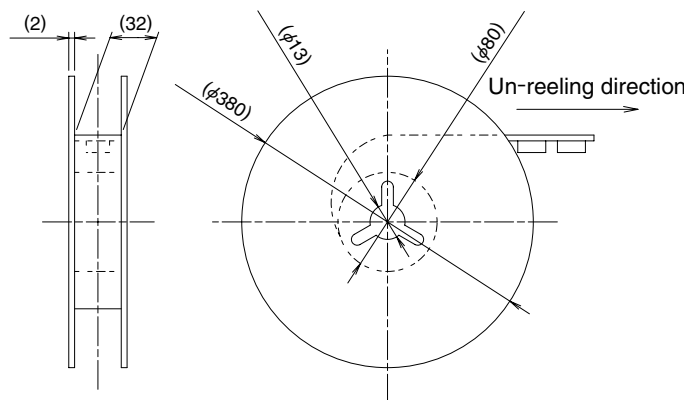


## ◆ Packaging specifications

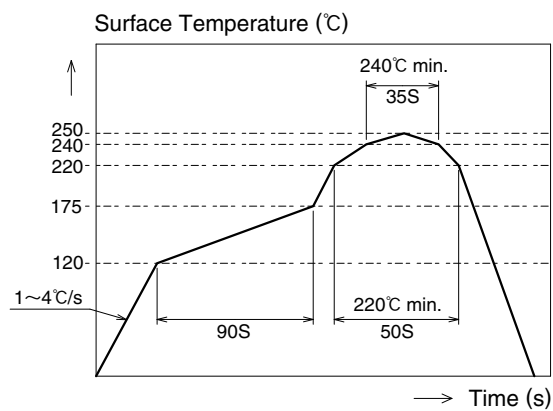
### ● Embossed carrier tape dimensions



### ● Reel dimensions



## ◆ Receptacle Recommended Reflow Temperature Profile



### (HRS test conditions)

- Solder paste : 96.5%Sn, 3.0%Ag, 0.5%Cu
- Test Board : Glass epoxy, 35mm × 35mm × 0.8mm thick

Note1: Up to 2 cycles of reflow soldering are possible under the same conditions, provided that there is a return to normal temperature between the first and second cycle.  
 Note 2: The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.

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# HRS

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