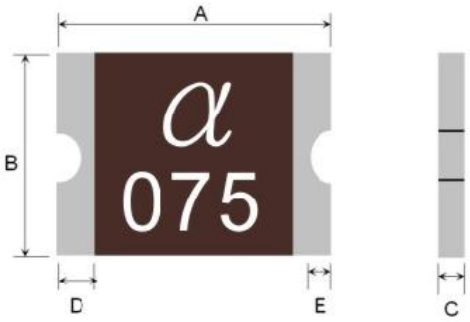
Low Resistance Resettable Fuse PTC SMD1812 Series

Features

RoHS Compliant & Halogen Free
faster tripping, 1812 Dimension, Surface mountable,
Solid stateOperation Current: 1.9A~9.0A
Maximum Voltage: 6V / 12Vdc
Operating Temperature：-40℃ to +85℃
Agency recognition:

Dimensions(4532mm/ 1812 mils) Unit: mm



Terminal pad materials :Tin-Plated Nickle-copper
Terminal pad solderability : Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.

Part number	Marking	A		B		C		D	E	Certification		Delivery Time	
		Min	max	Min	Max	Min	Max	Min	Min	UL	TUV	in stock	Produce
JK-mSMD190L	JK1	4.37	4.73	3.07	3.41	0.3	0.70	0.30	0.15	-	√	3days	18days
JK-mSMD190L-12	JK1	4.37	4.73	3.07	3.41	0.3	0.70	0.30	0.15	-	√	3days	18days
JK-mSMD260L	JK2	4.37	4.73	3.07	3.41	0.4	1.00	0.30	0.15	-	√	3days	18days
JK-mSMD260L-12	JK2	4.37	4.73	3.07	3.41	0.4	1.00	0.30	0.15	-	√	3days	18days
JK-mSMD300L	JK3	4.37	4.73	3.07	3.41	0.4	1.00	0.30	0.15	-	√	3days	18days
JK-mSMD300L-12	JK3	4.37	4.73	3.07	3.41	0.4	1.00	0.30	0.15	-	√	3days	18days
JK-mSMD350L	JK3	4.37	4.73	3.07	3.41	0.4	1.20	0.30	0.15	-	√	3days	18days
JK-mSMD350L-12	JK3	4.37	4.73	3.07	3.41	0.4	1.20	0.30	0.15	-	√	3days	18days
JK-mSMD400L	JK4	4.37	4.73	3.07	3.41	0.4	1.20	0.30	0.15	-	√	3days	18days
JK-mSMD400L-12	JK4	4.37	4.73	3.07	3.41	0.4	1.20	0.30	0.15	-	√	3days	18days
JK-mSMD450L	JK4	4.37	4.73	3.07	3.41	0.4	1.40	0.30	0.15	-	√	3days	18days
JK-mSMD450L-12	JK4	4.37	4.73	3.07	3.41	0.4	1.40	0.30	0.15	-	√	3days	18days

Dimensions(4532mm/ 1812 mils) Unit: mm

Part number	Marking	A		B		C		D	E	Certification		Delivery Time	
		Min	max	Min	Max	Min	Max	Min	Min	UL	TUV	in stock	Produce
JK-mSMD500L	JK5	4.37	4.73	3.07	3.41	0.5	1.40	0.30	0.15	-	√	3days	18days
JK-mSMD500L-12	JK5	4.37	4.73	3.07	3.41	0.5	1.40	0.30	0.15	-	√	3days	18days
JK-mSMD550L	JK5	4.37	4.73	3.07	3.41	0.5	1.40	0.30	0.15	-	√	3days	18days
JK-mSMD550L-12	JK5	4.37	4.73	3.07	3.41	0.5	1.40	0.30	0.15	-	√	3days	18days
JK-mSMD600L	JK6	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	√	3days	18days
JK-mSMD600L-12	JK6	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	√	3days	18days
JK-mSMD650L	JK6	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	√	3days	18days
JK-mSMD650L-12	JK6	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	√	3days	18days
JK-mSMD700L	JK7	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	√	3days	18days
JK-mSMD700L-12	JK7	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	-	3days	18days
JK-mSMD750L	JK7	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	-	3days	18days
JK-mSMD750L-12	JK7	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	-	3days	18days
JK-mSMD800L	JK8	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	-	3days	18days
JK-mSMD800L-12	JK8	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	-	3days	18days
JK-mSMD850L	JK8	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	-	3days	18days
JK-mSMD850L-12	JK8	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	-	3days	18days
JK-mSMD900L	JK9	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	-	3days	18days
JK-mSMD900L-12	JK9	4.37	4.73	3.07	3.41	0.6	1.60	0.30	0.15	-	-	3days	18days

Electrical characteristics(25℃)

Part Number	I Hold	I Trip	Vmax	Imax	Pd Max	Maximum Time to Trip		Resistance（Ω）		Certification		Delivery Time	
	A	A	DC	A	W	Current（A）	Time（S）	Rimin	R1max	UL	TUV	in stock	Produce
JK-mSMD190L	1.9	3.8	6V	50	1.5	8.0	5.0	0.003	0.025	-	√	3days	18days
JK-mSMD190L-12	1.9	3.8	12V	50	1.5	8.0	5.0	0.003	0.025	-	√	3days	18days
JK-mSMD260L	2.6	5.2	6V	50	1.5	8.0	5.0	0.003	0.024	-	√	3days	18days
JK-mSMD260L-12	2.6	5.2	12V	50	1.5	8.0	5.0	0.003	0.024	-	√	3days	18days
JK-mSMD300L	3.0	6.0	6V	50	1.5	15.0	2.0	0.003	0.022	-	√	3days	18days
JK-mSMD300L-12	3.0	6.0	12V	50	1.5	15.0	2.0	0.003	0.022	-	√	3days	18days
JK-mSMD350L	3.5	7.0	6V	50	1.5	17.5	2.0	0.003	0.020	-	√	3days	18days
JK-mSMD350L-12	3.5	7.0	12V	50	1.5	17.5	2.0	0.003	0.020	-	√	3days	18days

Electrical characteristics(25℃)

Part Number	I Hold	I Trip	Vmax	Imax	Pd Max	Maximum Time to Trip		Resistance（Ω）		Certification		Delivery Time	
	A	A	DC	A	W	Current（A）	Time（S）	Rimin	R1max	UL	TUV	in stock	Produce
JK-mSMD400L	4.0	8.0	6V	50	1.8	20.0	2.0	0.003	0.018	-	√	3days	18days
JK-mSMD400L-12	4.0	8.0	12V	50	1.8	20.0	2.0	0.003	0.018	-	√	3days	18days
JK-mSMD450L	4.5	9.0	6V	50	1.8	22.5	2.0	0.003	0.016	-	√	3days	18days
JK-mSMD450L-12	4.5	9.0	12V	50	1.8	22.5	2.0	0.003	0.016	-	√	3days	18days
JK-mSMD500L	5.0	10.0	6V	50	1.8	25.0	2.0	0.003	0.014	-	√	3days	18days
JK-mSMD500L-12	5.0	10.0	12V	50	1.8	25.0	2.0	0.003	0.014	-	√	3days	18days
JK-mSMD550L	5.5	11.0	6V	50	1.8	27.5	2.0	0.002	0.012	-	√	3days	18days
JK-mSMD550L-12	5.5	11.0	12V	50	1.8	27.5	2.0	0.002	0.012	-	√	3days	18days
JK-mSMD600L	6.0	12.0	6V	50	1.8	30.0	2.0	0.002	0.010	-	√	3days	18days
JK-mSMD600L-12	6.0	12.0	12V	50	1.8	30.0	2.0	0.002	0.010	-	√	3days	18days
JK-mSMD650L	6.5	13.0	6V	50	1.8	32.5	2.0	0.002	0.008	-	√	3days	18days
JK-mSMD650L-12	6.5	13.0	12V	50	1.8	32.5	2.0	0.002	0.008	-	√	3days	18days
JK-mSMD700L	7.0	14.0	6V	50	2.0	35.0	2.0	0.001	0.007	-	√	3days	18days
JK-mSMD700L-12	7.0	14.0	12V	50	2.0	35.0	2.0	0.001	0.007	-	-	3days	18days
JK-mSMD750L	7.5	15.0	6V	50	2.0	37.5	2.0	0.001	0.006	-	-	3days	18days
JK-mSMD750L-12	7.5	15.0	12V	50	2.0	37.5	2.0	0.001	0.006	-	-	3days	18days
JK-mSMD800L	8.0	16.0	6V	50	2.0	40.0	2.0	0.0008	0.005	-	-	3days	18days
JK-mSMD800L-12	8.0	16.0	12V	50	2.0	40.0	2.0	0.0008	0.005	-	-	3days	18days
JK-mSMD850L	8.5	17.0	6V	50	2.2	42.5	2.0	0.0008	0.004	-	-	3days	18days
JK-mSMD850L-12	8.5	17.0	12V	50	2.2	42.5	2.0	0.0008	0.004	-	-	3days	18days
JK-mSMD900L	9.0	18.0	6V	50	2.2	45.0	2.0	0.0005	0.003	-	-	3days	18days
JK-mSMD900L-12	9.0	18.0	12V	50	2.2	45.0	2.0	0.0005	0.003	-	-	3days	18days

I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.

V_{max} = Maximum operating voltage device can withstand without damage at rated current (Imax).

I_{max} = Maximum fault current device can withstand without damage at rated voltage (Vmax).

Maximum Time-to-trip: Maximum time to trip at assigned current.

Pd=Maximum power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

$Ri_{min/max}$ = Minimum/Maximum device resistance prior to tripping at 25°C.

$R1_{max}$ = Maximum device resistance is measured one hour post reflow.

Thermal Derating Chart-IH(A)

Maximum ambient operating temperatures ℃									
Part Number	**-40℃**	**-20℃**	**0℃**	**25℃**	**40℃**	**50℃**	**60℃**	**70℃**	**85℃**
JK-mSMD190L	2.76	2.47	2.22	1.9A	1.63	1.46	1.31	1.18	0.95
JK-mSMD190L-12	2.76	2.47	2.22	1.9A	1.63	1.46	1.31	1.18	0.95
JK-mSMD260L	3.78	3.38	3.04	2.6A	2.23	2.00	1.79	1.61	1.30
JK-mSMD260L-12	3.78	3.38	3.04	2.6A	2.23	2.00	1.79	1.61	1.30
JK-mSMD300L	4.35	3.90	3.51	3.0A	2.58	2.31	2.07	1.86	1.50
JK-mSMD300L-12	4.35	3.90	3.51	3.0A	2.58	2.31	2.07	1.86	1.50
JK-mSMD350L	5.08	4.55	4.10	3.5A	3.01	2.70	2.42	2.17	1.75
JK-mSMD350L-12	5.08	4.55	4.10	3.5A	3.01	2.70	2.42	2.17	1.75
JK-mSMD400L	5.80	5.20	4.68	4.0A	3.44	3.08	2.76	2.48	2.00
JK-mSMD400L-12	5.80	5.20	4.68	4.0A	3.44	3.08	2.76	2.48	2.00
JK-mSMD450L	6.54	5.85	5.26	4.5A	3.86	3.46	3.10	2.79	2.25
JK-mSMD450L-12	6.54	5.85	5.26	4.5A	3.86	3.46	3.10	2.79	2.25
JK-mSMD500L	7.26	6.50	5.84	5.0A	4.29	3.84	3.45	3.11	2.50
JK-mSMD500L-12	7.26	6.50	5.84	5.0A	4.29	3.84	3.45	3.11	2.50
JK-mSMD550L	7.99	7.15	6.43	5.5A	4.72	4.23	3.79	3.42	2.75
JK-mSMD550L-12	7.99	7.15	6.43	5.5A	4.72	4.23	3.79	3.42	2.75
JK-mSMD600L	8.72	7.80	7.01	6.0A	5.15	4.61	4.14	3.73	3.00
JK-mSMD600L-12	8.72	7.80	7.01	6.0A	5.15	4.61	4.14	3.73	3.00
JK-mSMD650L	9.44	8.45	7.59	6.5A	5.58	4.99	4.48	4.04	3.25
JK-mSMD650L-12	9.44	8.45	7.59	6.5A	5.58	4.99	4.48	4.04	3.25
JK-mSMD700L	10.17	9.10	8.18	7.0A	6.01	5.38	4.83	4.35	3.50
JK-mSMD700L-12	10.17	9.10	8.18	7.0A	6.01	5.38	4.83	4.35	3.50
JK-mSMD750L	10.89	9.75	8.76	7.5A	6.44	5.76	5.18	4.66	3.75
JK-mSMD750L-12	10.89	9.75	8.76	7.5A	6.44	5.76	5.18	4.66	3.75
JK-mSMD800L	11.62	10.40	9.34	8.0A	6.87	6.15	5.52	4.97	4.00
JK-mSMD800L-12	11.62	10.40	9.34	8.0A	6.87	6.15	5.52	4.97	4.00
JK-mSMD850L	12.34	11.05	9.93	8.5A	7.30	6.53	5.87	5.28	4.25
JK-mSMD850L-12	12.34	11.05	9.93	8.5A	7.30	6.53	5.87	5.28	4.25
JK-mSMD900L	13.07	11.70	10.51	9.0A	7.73	6.92	6.21	5.59	4.50
JK-mSMD900L-12	13.07	11.70	10.51	9.0A	7.73	6.92	6.21	5.59	4.50

SMD1812 Low Resistance Series

Part number System

JK- m SMD xxx L- 12

12V Products
Low Resistance
Holding Current Rating
Surface Mount Device
1812 Dimension
Our Mark

Test Procedures and Requirements

Test Item	Test Conditions	Accept/Reject Criteria
Initial Resistance	In still air @ 25℃	Rmin ≤ R ≤ Rmax
Time to Trip	Specified current,Vmax，25℃	Tmaximum Time to Trip
Hold Current	30min ,at IH，25℃	No trip
Trip Cycle Life	Vmax，Imax，100cycles	No arcing or burning
Trip Endurance	Vmax，Imax，1hours	No arcing or burning

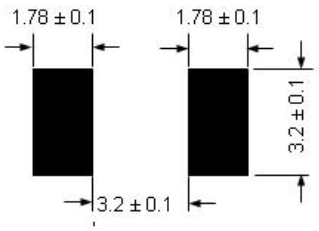
Physical Characteristics

Terminal materials :	Tin-Plated Nickle-copper
Soldering zone	Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.
Moisture Sensitivity	Level 2a, per IPC/JEDEC J-STD 020C

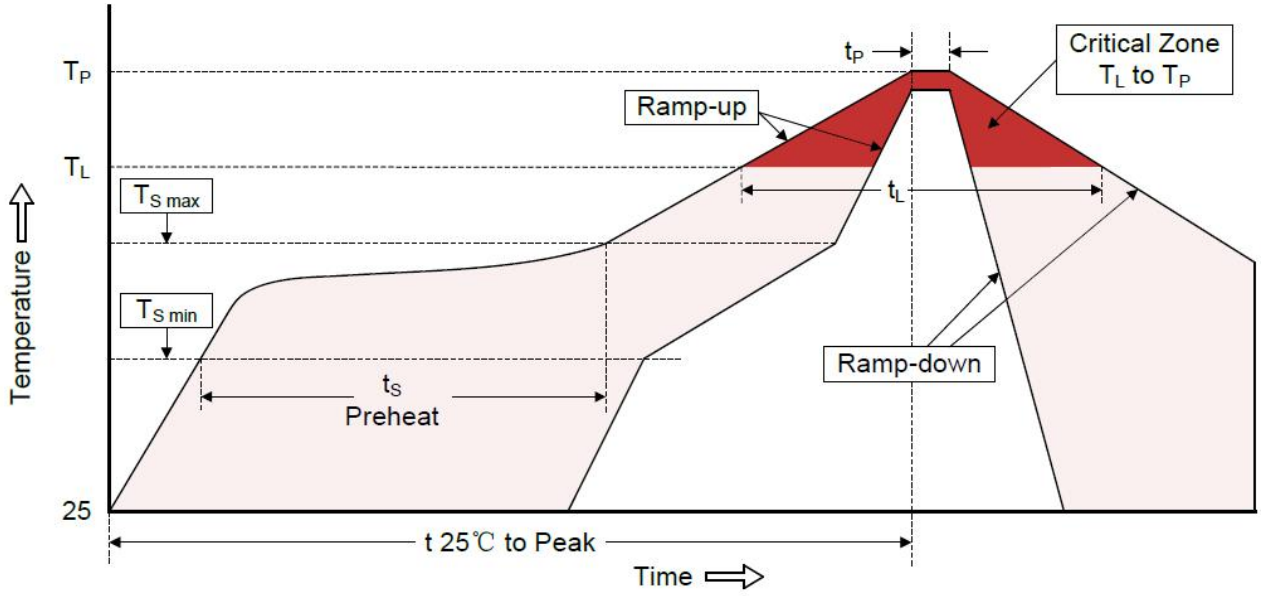
Environmental Specifications

Test Item	Test Conditions	Resistance change
Passive aging	+85℃，1000hours	±10% typical
Humidity aging	+85℃/85%R.H.1000hours	±5% typical
Thermal shock	MIL-STD-202,Method 107G ,+85℃/-40℃,20times	-30% typical resistance change
Solvent Resistance	MIL-STD-202,Method 215	No change
Vibration	ML-STD-883C,Test Condition A	No change

Recommended Pad layout(mm)



Solder reflow conditions



Profile Feature	Pb-Free Assembly
Average ramp-up rate (TS maxto TP)	3℃/second max.
Preheat -Temperature Min (TS min) -Temperature Max (TS max) -Time (min to max) (TS min to TS max)	 150℃ 200℃ 60-180 seconds
Time maintained above: -Temperature (TL) -Time (tL)	 217℃ 60-150 seconds
Peak Temperature (TP)	260℃
Time within 5℃of actual PeakTemperature (tP)	20-40 seconds
Ramp-down Rate	3℃/second max.
Time 25℃to Peak Temperature	8 minutes max.
StorageCondition	0℃~35℃, ≤70%RH

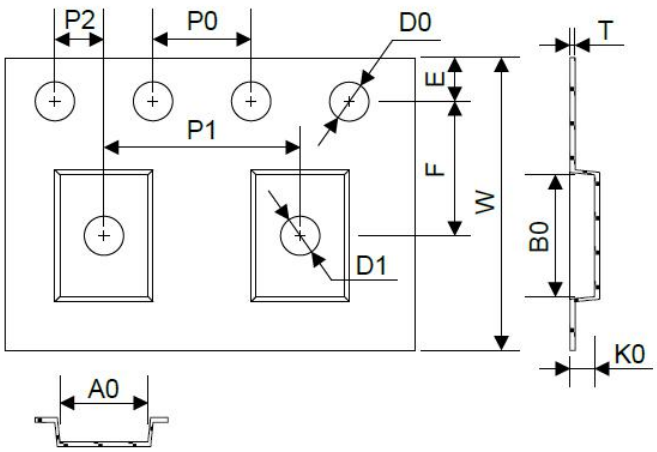
- Recommended reflow methods: IR, vapor phase oven, hot air oven, N_2environment for lead-free
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25mm (0.010 inch)
- Device can be cleaned using standard industry methods and solvents.

Note1: All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperatures exceed the recommended profile, devices may not meet the performance Requirements

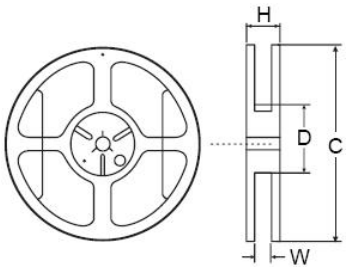
Tape Specification and Reel Dimensions

Tape



Symbol	Dimensions(mm)
W	12.00±0.30
F	5.50±0.05
E	1.75±0.10
D0	1.55±0.05
D1	1.55(MIN)
P0	4.00±0.10
P1	8.00±0.10
P2	2.00±0.05
A0	3.58±0.10
B0	4.93±0.10
T	0.25±0.10
K0	0.87/1.25/2.10±0.10
Leader min	390
Trailer min	160

Reel



C	Φ178.0±1.0
D	Φ60.2±0.5
H	16.0±0.5
W	13.2±1.5

Packaging Quantity

Part Number	Quantity	Part Number	Quantity	Part Number	Quantity
JK-mSMD190L	2000PCS	JK-mSMD450L	2000PCS	JK-mSMD700L	1500PCS
JK-mSMD190L-12	2000PCS	JK-mSMD450L-12	2000PCS	JK-mSMD700L-12	1500PCS
JK-mSMD260L	2000PCS	JK-mSMD500L	2000PCS	JK-mSMD750L	1500PCS
JK-mSMD260L-12	2000PCS	JK-mSMD500L-12	2000PCS	JK-mSMD750L-12	1500PCS
JK-mSMD300L	2000PCS	JK-mSMD550L	2000PCS	JK-mSMD800L	1500PCS
JK-mSMD300L-12	2000PCS	JK-mSMD550L-12	2000PCS	JK-mSMD800L-12	1500PCS
JK-mSMD350L	2000PCS	JK-mSMD600L	1500PCS	JK-mSMD850L	1500PCS
JK-mSMD350L-12	2000PCS	JK-mSMD600L-12	1500PCS	JK-mSMD850L-12	1500PCS
JK-mSMD400L	2000PCS	JK-mSMD650L	1500PCS	JK-mSMD900L	1500PCS
JK-mSMD400L-12	2000PCS	JK-mSMD650L-12	1500PCS	JK-mSMD900L-12	1500PCS

Low Resistance Resettable Fuse PTC SMD1812 Series

Storage

The maximum ambient temperature shall not exceed 40℃. Storage temperatures higher than 40℃ could result in the deformation of packaging materials. The maximum relative humidity recommended for storage is 70%. High humidity with high temperature can accelerate the oxidation of the solder plating on the termination and reduce the solderability of the components. Sealed plastic bags with desiccant shall be used to reduce the oxidation of the termination and shall only be opened prior to use. The products shall not be stored in areas where harmful gases containing sulfur or chlorine are present.

Warning

• Please read this specification before using the product.
• Use PPTC beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
• PPTC are intended for protection against occasional over current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
• Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.
• Use PPTC with a large inductance in circuit will generate a circuit voltage (L di/dt) above the rated voltage of the PPTC.
• Avoid impact PPTC device its thermal expansion like placed under pressure or installed in limited space.
• Contamination of the PPTC material with certain silicon based oils or some aggressive solvents can adversely impact the performance of the devices.PPTC SMD can be cleaned by standard methods.
• Requests that customers comply with our recommended solder pad layouts and recommended reflow profile. Improper board layouts or reflow profilecould negatively impact solderability performance of our devices.

Notes

The specification is intended to present application,product and technical data to assist the user in selecting PPTC circuit production devices,However,users should imdependently evaluate and test the suitability of each product.HUAAN makes on warranties as to the acduracy or completeness of the information and disclaims any liatility resulting form its use, HUAAN's only obligations are those im the HUAAN Standard Rerms and Conditions of Sale and in no case will HUAAN be liable for any incidental,imdirect,or consequential damages arising from the sale,resale,or misues of its products. HUAAN reserves the right to change of update, without notice, any information contained in this specification.