



# SPECIFICATION FOR APPROVAL

Customer Part No / Project Name : _____
Product Description : _____
Note : _____

Customer Signature	Date	Sunjet	Date
Approved By : _____	_____	Approved By : <u>Eric Wu</u>	2011.7.26
Approved By : _____	_____	Previewed By : <u>Sky Chen</u>	2011.7.26
Approved By : _____	_____	Prepared By : <u>Daniel Lee</u>	2011.7.26

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## 1 GENERAL DESCRIPTION

### 1.1 OVERVIEW

SJT5630R is TKM module, which features 1 power & 7 rotary touch-keys, PWM control LED color temperature & luminance.

### 1.2 FEATURES

- Individual power supply
- Capacitor inducts
- Handshaking with LEDs which control by PWM control color temperature & luminance
- Attaching the product mechanism with anti-storing capacitor twin adhesive tapes

### 1.3 APPLICATION

This module is replacing traditional key for product.

### 1.4 GENERAL SPECIFICATIONS

Item	Specification	Unit	Note
Touch Sensor Pad	See item 7	mm	
3M 8010 MP	43 <sup>(H)</sup> x 53 <sup>(V)</sup>	mm	Adhesive Transfer Tapes
Interface Connect	2.0 <sup>(PIN to PIN)</sup>	mm	7 Pin SMD wafer

### 1.5 MECHANICAL SPECIFICATIONS

Item		Specification	Unit	Note
Module Size	Horizontal(H)	45	mm	
	Vertical(V)	55	mm	
	Depth(D)	1.6	mm	PCB
	Depth(D)	7.0	mm	PCBA

## 2 ABSOLUTE MAXIMUM RATINGS

### 2.1 ABSOLUTE RATINGS OF ENVIRONMENT

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Storage Temperature	T <sub>ST</sub>	-40	+85	°C	(1)
Operating temperature	T <sub>OP</sub>	0	+60	°C	(1) (2)

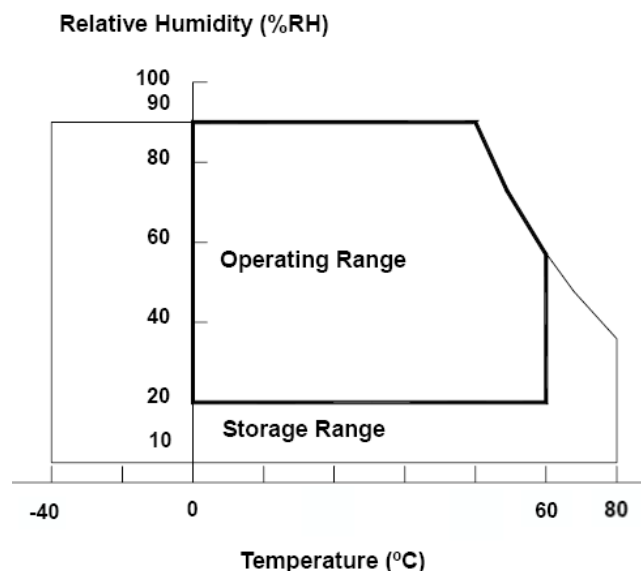
Note (1) Temperature and relative humidity range is shown in the figure below.

(a) 90 %RH Max. ( $T_a \leq 40$  °C).

(b) Wet-bulb temperature should be 39 °C Max. ( $T_a > 40$  °C).

(c) No condensation.

Note (2) The maximum operating temperature is based on the test condition that the surface temperature of display area is less than or equal to 60 °C with SJT5630R module alone in a temperature controlled chamber. Thermal management should be considered in final product design to prevent the surface temperature of display area from being over 60 °C. The range of operating temperature may degrade in case of improper thermal management in final product design.



## 2.2 ELECTRICAL CHARACTERISTICS

Item	Symbol	Value			Unit	Note
		Min.	Type	Max.		
DC IN/OUT		INPUT:9V~24V OUTPUT:Max 1.0A (warm and cool are 2A)				
Output Signal Voltage		PWM Control color temperature & luminance				
Power dissipation <sup>(3)</sup>	P <sub>DIS</sub>	–	–	800m	W	(6)

Note (1) Permanent damage to the device may occur if maximum values are exceeded. Functional operation should be restricted to the conditions described under normal operating conditions.

(2) The module should be always operated within above ranges.

(3) No moisture condensation or freezing.

(4) Maximum output current sunk by single I/O pin

(5) Maximum output current sourced by single I/O pin

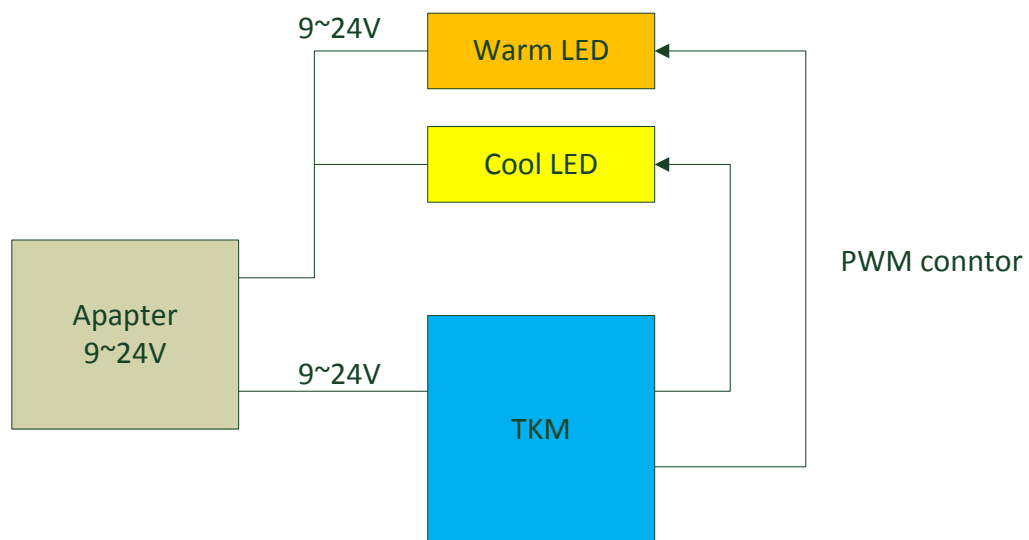
(6) Power dissipation is calculated as follows:

$$P_{DIS} = V_{DD} \times \{I_{dd} - \sum I_{OH}\} + \sum \{(V_{DD} - V_{OH}) \times I_{OH}\} + \sum (V_{OL} \times I_{OL}).$$

### 3 BLOCK DIAGRAM

#### 3.1 SJT5630R MODULE

Handshaking with LEDs which control by PWM control color temperature & luminance



## 4 INTERFACE PIN CONNECTION

### 4.1 SJT5630R Module

#### J1 Connector Pin Assignment

Pin No.	Symbol	Description	Note
1	LED_W-	Warm LED(-)	
2	LED_W+	Warm LED(+)	
3	VDD	Power 9V~24V	
4	GND	Power gnd	
5	LED_C-	Cool LED(-)	
6	LED_C+	Cool LED(+)	
7	reserve	To reserve	

Note (1) Connector Part No.: 2.0mm wafer

(2) Floating of any control signal is not allowed.

## 5 TEST CHARACTERISTICS

### 5.1 TEST CONDITIONS

Item	Symbol	Value	Unit
Ambient Temperature	$T_a$	25±2	°C
Ambient Humidity	$H_a$	50±10	%RH
Supply Voltage	$V_{DD}$	+24.0	V
Input Signal	Touching keys with finger lightly. (error recognition happens if wearing groves)		

### 5.2 Measurement Setup:

Testing instruments :

1. DC Voltage measurer
2. DC Power Supply +24.0V
3. SJT5630R Module

### 5.3 Test Step:

- 5.3.1 Handshaking with LEDs which control by PWM control color temperature & luminance
- 5.3.2 Touch key "POWER" is power on / off
- 5.3.3 Long touch key "POWER" change mode warm/cool
- 5.3.4 Touch key P2~P8 is adjust color temperature..
- 5.3.5 LED 1ch luminance current max is 1.0A(warm and cool are 2A)

## 6 PRECAUTIONS

### 6.1 ATTENTION CONTENT

SJT5630R Module must attached tightly with product housing using 3M 8010 high performance.

