



TK8812C/13C

2/3 Key Touch Detector

DATA SHEET Rev 1.0

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AMENDMENT HISTORY

Version	Date	Description
V0.90	May,2020	New release.
V1.0	Apr,2025	Modify Device & Package List

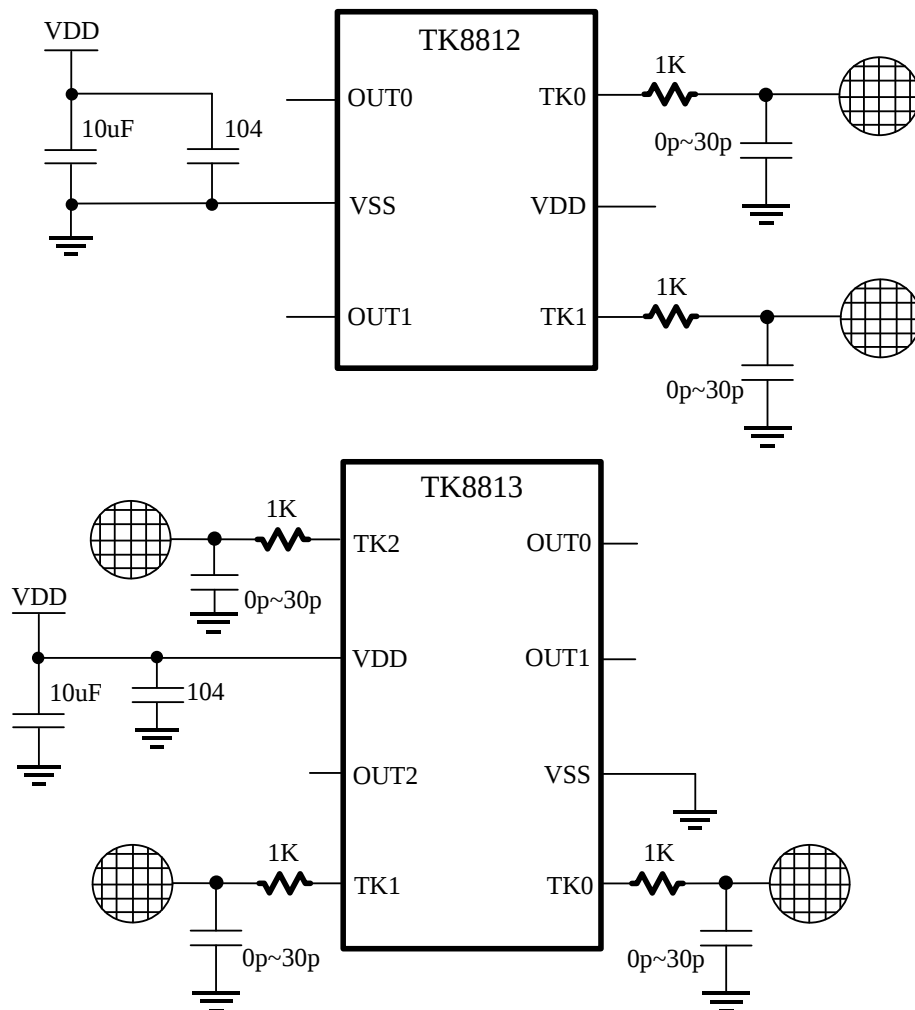
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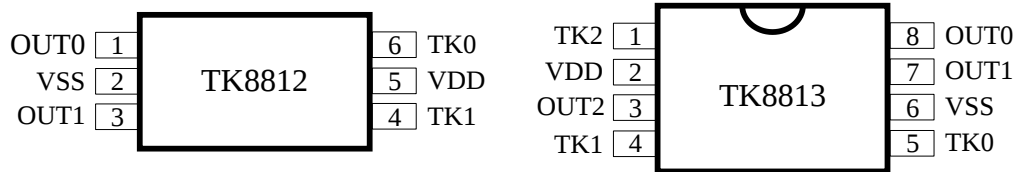
FEATURES

1. Two or Three Key Touch Detector
2. Operation Voltage: 2.2V~5.5V
3. Operation Current: Normal mode =5.3uA, Low Power mode=2.1uA @V_{DD}=3V
4. Enter Low Power mode after no activity for 10 second
5. Response Time: Normal mode < 60mS; Low Power mode < 120mS
6. Sensitivity adjusted by TK pin capacitor (0pF~30pF)
7. Active Low output
8. 8 second key press timeout reset
9. Built-in 2.3V LDO
10. LVR=2.0V
11. SOT23-6/SOP8 package

APPLICATION CIRCUIT



PIN ASSIGNMENT



PIN DESCRIPTION

Name	In/Out	Pin Description
OUT0, OUT1, OUT2	O	Touch Key output
TK0, TK1, TK2	I	Touch Key input
VDD, VSS	P	Power input pin and ground

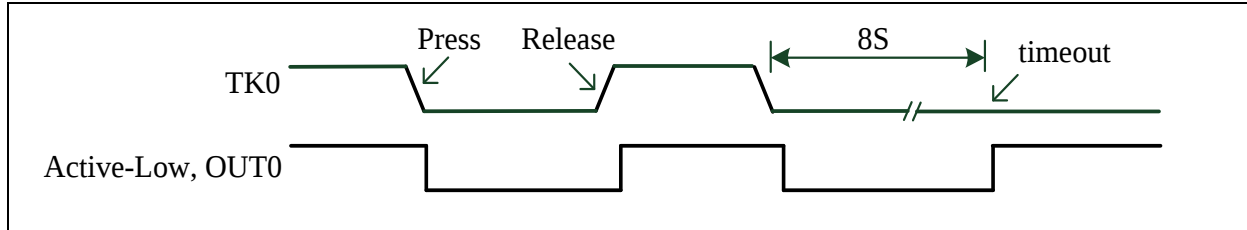
DEVICE LIST

	Max. time for key press timeout	OUT pin output level	Sensitivity	2.3V LDO
TK8812C0R	8S	CMOS Active Low	High	Enable
TK8813C1S	8S	CMOS Active Low	High	Enable

FUNCTIONAL DESCRIPTION

1. Output Pin Function

OUT0~OUT2 are direct mode output. The output voltage level is active low.



2. Touch Sensitivity Adjustment

The sensitivity of touch key can be adjusted by the capacitance of TK pin. The adjustment range is from 0pF to 30pF. Smaller capacitance can make higher sensitivity.

3. Key Press Timeout Reset

Long press on the touch key will generate a timeout reset. The maximum time is 8 seconds.

4. Normal mode and Low Power mode

The chip starts at Normal mode after reset. If no event occurred for 10 second, it switches to Low Power mode. It switches back to Normal mode after sampling TK pin's capacitance variation event.

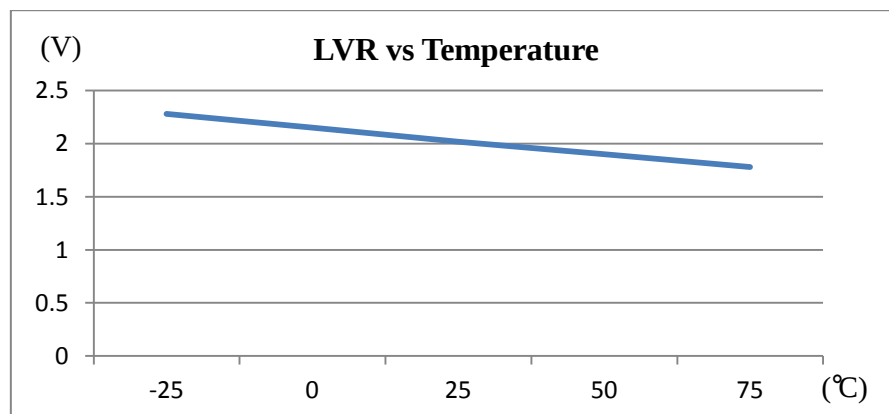
ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings

Parameter	Rating	Unit
Supply voltage	$V_{SS} - 0.3 \sim V_{SS} + 5.5$	V
Input voltage	$V_{SS} - 0.3 \sim V_{DD} + 0.3$	
Operating temperature	$-20 \sim +70$	°C
Storage temperature	$-65 \sim +150$	

DC Characteristics (TA=25°C)

Parameter	Sym	Conditions		Min	Typ	Max	Unit
Input High Voltage	V_{IH}	all Input	—	$0.8V_{DD}$			V
Input Low Voltage	V_{IL}			—	—	$0.2V_{DD}$	
I/O Port Source Current	I_{OH}	all Output	$V_{DD}=3.0V$ $V_{OH}=2.7V$	—	5	—	mA
			$V_{DD}=5.0V$ $V_{OH}=4.5V$	—	10	—	
I/O Port Sink Current	I_{OL}	all Output	$V_{DD}=3.0V$ $V_{OL}=0.3V$	—	15	—	
			$V_{DD}=5.0V$ $V_{OL}=0.5V$	—	30	—	
Power Supply Current	I_{DD}	Normal mode	$V_{DD}=4.2V$	—	6.6	—	uA
			$V_{DD}=3.0V$	—	5.3	—	
		Low Power mode	$V_{DD}=4.2V$	—	2.5	—	
			$V_{DD}=3.0V$	—	2.1	—	
Timeout Lead Time	T_{LT}		$V_{DD}=3.0V$	—	8	—	S
LVR Voltage	V_{LVR}	TA=25°C		1.8	2.0	2.2	V





PACKAGE INFORMATION

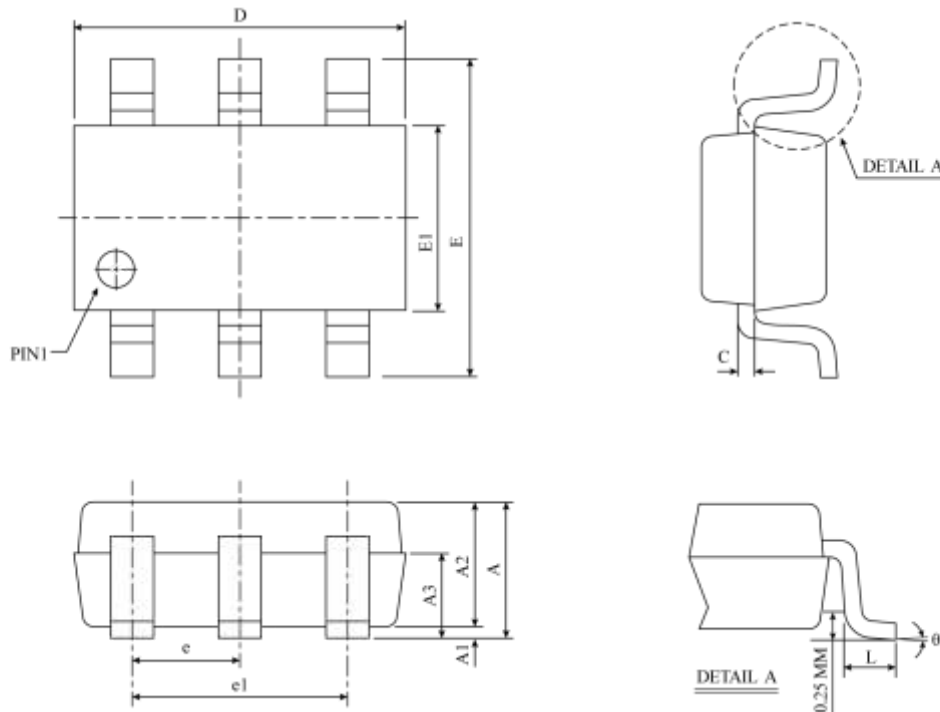
Please note that the package information provided is for reference only. Since this information is frequently updated, users can contact Sales to consult the latest package information and stocks.

Ordering Information

Ordering number	Package
TK8812C0R	SOT23-6
TK8813C1S	SOP8 (150mil)

Package Information

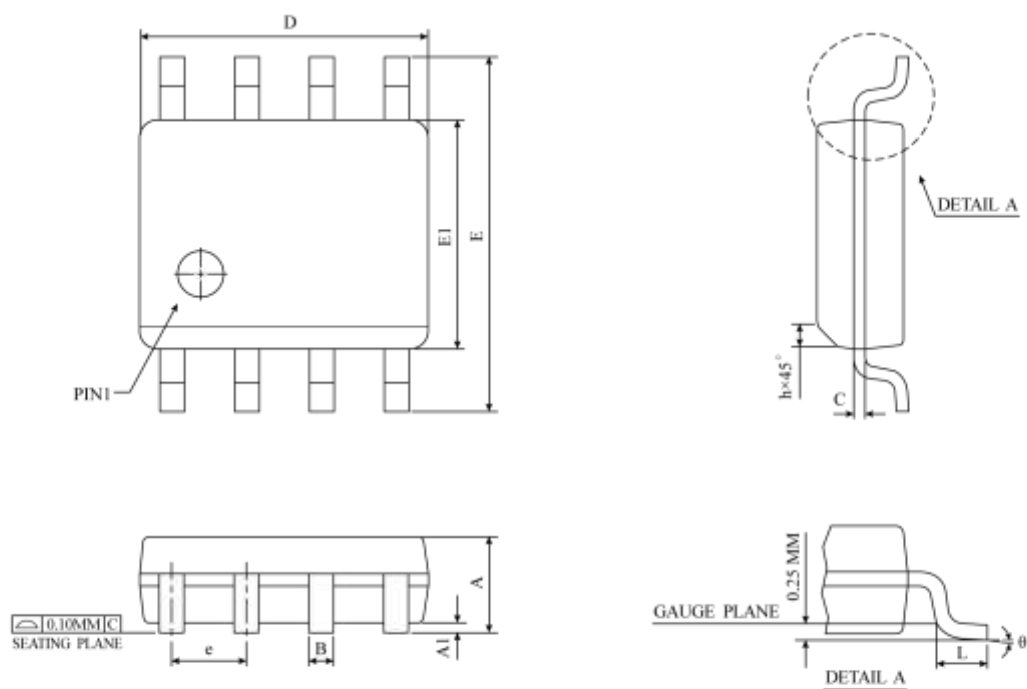
• SOT23-6 Package Dimension



SYMBOL	DIMENSION IN MM			DIMENSION IN INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	-	-	1.45	-	-	0.057
A1	0	0.08	0.15	0	0.003	0.006
A2	0.90	1.10	1.30	0.035	0.043	0.051
A3	0.60	0.65	0.70	0.024	0.026	0.028
c	0.12	0.16	0.19	0.005	0.006	0.007
D	2.82	2.92	3.02	0.111	0.115	0.119
E	2.70	2.90	3.10	0.106	0.114	0.122
E1	1.52	1.62	1.72	0.060	0.064	0.068
e	0.85	0.95	1.05	0.033	0.037	0.041
e1	1.80	1.90	2.00	0.071	0.075	0.079
L	0.35	0.48	0.60	0.014	0.019	0.024
θ	0°	4°	8°	0°	4°	8°
JEDEC	M0-178 (AB)					

△ * NOTES : ALL DIMENSIONS REFER TO JEDEC STANDARD MO-178 AB
DO NOT INCLUDE MOLD FLASH OR PROTRUSIONS.

● SOP-8 (150mil) Package Dimension



SYMBOL	DIMENSION IN MM			DIMENSION IN INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.35	1.55	1.75	0.0532	0.0610	0.0688
A1	0.10	0.18	0.25	0.0040	0.0069	0.0098
B	0.33	0.42	0.51	0.0130	0.0165	0.0200
C	0.19	0.22	0.25	0.0075	0.0087	0.0098
D	4.80	4.90	5.00	0.1890	0.1939	0.1988
E	5.80	6.00	6.20	0.2284	0.2362	0.2440
E1	3.80	3.90	4.00	0.1497	0.1536	0.1574
e	1.27 BSC			0.050 BSC		
h	0.25	0.38	0.50	0.0099	0.0148	0.0196
L	0.40	0.84	1.27	0.0160	0.0330	0.0500
θ	0°	4°	8°	0°	4°	8°
JEDEC	MS-012 (AA)					

△ * NOTES : DIMENSION "D" DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
MOLD FLASH, PROTRUSIONS AND GATE BURRS SHALL
NOT EXCEED 0.15 MM (0.006 INCH) PER SIDE.