

Reset Timer with Delay Time

FEATURES

- 7.5s Fixed Reset Delay
- 1.65V to 5.5V Operation Voltage
- Open-Drain Output with 400ms Duration
- Low 1uA Quiescent Current
- Test-Mode Enable
- /SR with Internal Pull-Up Resistor
- Halogen Free Product

APPLICATIONS

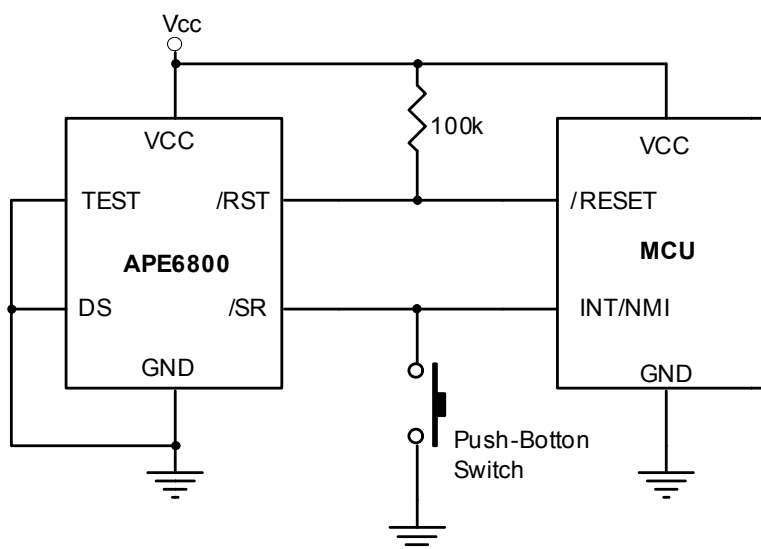
- Mobile Phone
- Tablet
- Portable Media Player

DESCRIPTION

The APE6800 is a reset timer which designed for long reset times. The device has a long fixed delay of 7.5s \pm 20% which avoids unplanned reset press.

The APE6800 operates with 1uA maximal quiescent current when timer inactive. The APE6800 has one input which supports single button resetting required. It has a single open-drain output, /RST, with 0.5mA sink current capability. The DS enables Test-Mode operation by forcing /RST low.

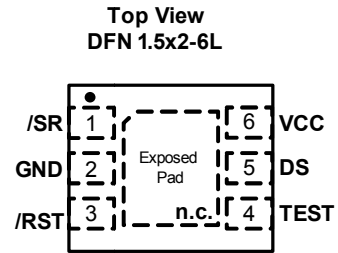
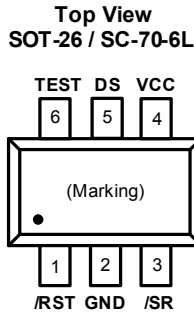
TYPICAL APPLICATION





ORDERING / PACKAGE INFORMATION

APE6800X
Package Type
Y: SOT-26
U: SC-70-6L
GN15B: DFN 1.5x2-6L



ABSOLUTE MAXIMUM RATINGS (at TA=25°C)

Table of absolute maximum ratings including VCC (-0.3V to 6V), /RST, /SR, DS, TEST (-0.3V to 6V), /RST DC Sink Current (50mA), Storage Temperature Range (-65 to +150°C), Junction Temperature (150°C), Lead Temperature (260°C), Thermal Resistance (SOT-26: 250°C/W, SC-70-6L: 270°C/W, DFN 1.5x2-6L: 120°C/W), and ESD Electrostatic Discharge Capability (Human Body Model: 4kV, Charged Device Model: 2kV).

RECOMMENDED OPERATING CONDITIONS

Table of recommended operating conditions including VCC (1.65V to 5.5V), /RST, /SR (0V to 5.5V), /RST DC Sink Current for VCC=2.0V to 5.5V (0.5mA), and Operating Temperature Range (-40°C to 85°C).



ELECTRICAL SPECIFICATIONS

($V_{CC}=1.65V$ to $5.5V$, $T_A=25^{\circ}C$, unless otherwise noted)

PARAMETER	SYM	TEST CONDITION	MIN	TYP	MAX	UNIT
Quiescent Current	I_{CC1}	/SR= V_{CC}			1	μA
Operation Current	I_{CC2}	/SR=0V			200	μA
/SR, DS Input Voltage	V_{IH}	High	$0.65 \times V_{CC}$			V
	V_{IL}	Low			$0.25 \times V_{CC}$	V
/RST Low Output Voltage	V_{OL}	$I_O=0.5mA$			0.3	V
/SR Leakage Current	I_{SR}	$V_{SR}=V_{CC}$	-1		1	μA
DS Leakage Current	I_{DS}	$0V \leq V_{DS} \leq 5.5V$	-1		1	μA
Reset Timer Delay ^(Note1)	t_{SRC}	/SR to /RST, figure1	6	7.5	9	s
Reset Timeout Delay ^(Note1)	t_{REC}	Test circuit as figure1	320	400	480	ms

Note1: Guarantee by design, not production tested.

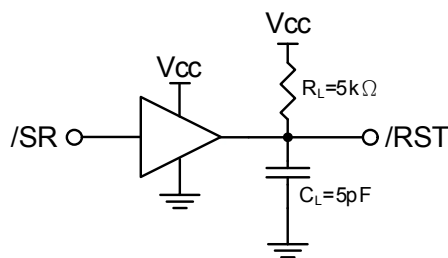


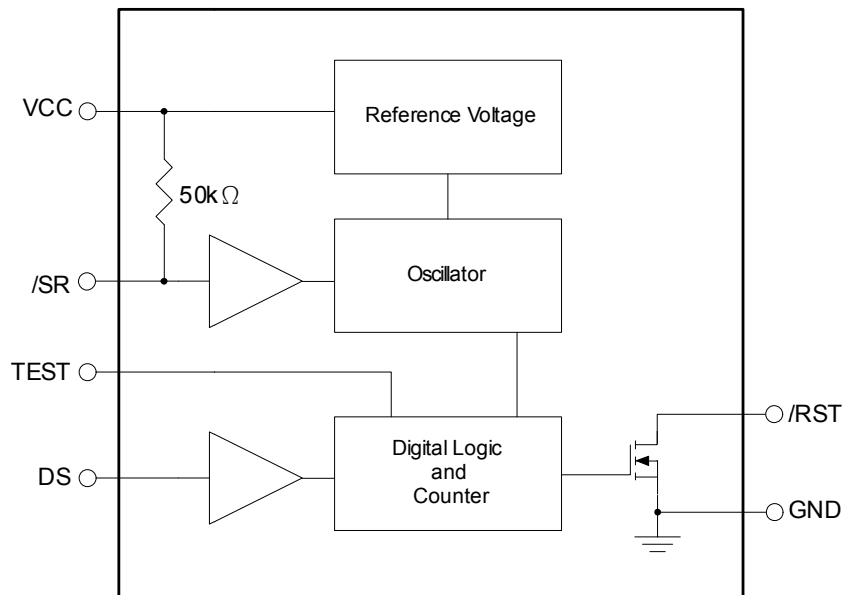
Fig.1 Test Circuit



PIN DESCRIPTIONS

PIN No.	PIN SYMBOL	PIN DESCRIPTION	
		Normal Operation	Test-Mode Operation
1	/RST	Reset output pin. /RST is an open-drain output. Current capability is 0.5mA.	
2	GND	Ground	
3	/SR	Active-low reset input pin with internal pull-up resistor.	
5	VCC	Power supply input. A 0.1uF bypass capacitor is recommended.	
5	DS	Delay selection input. Pull LOW for normal operation.	Delay selection input. Pull HIGH for Test-Mode operation to enable 0s delay.
6	TEST	Device test pin. Connect to ground for normal use.	

BLOCK DIAGRAM





TYPICAL PERFORMANCE CHARACTERISTICS

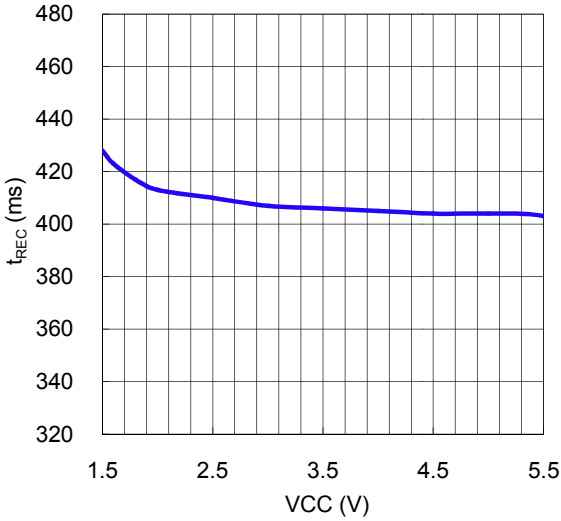


Fig.2 Reset Timeout Delay vs. VCC

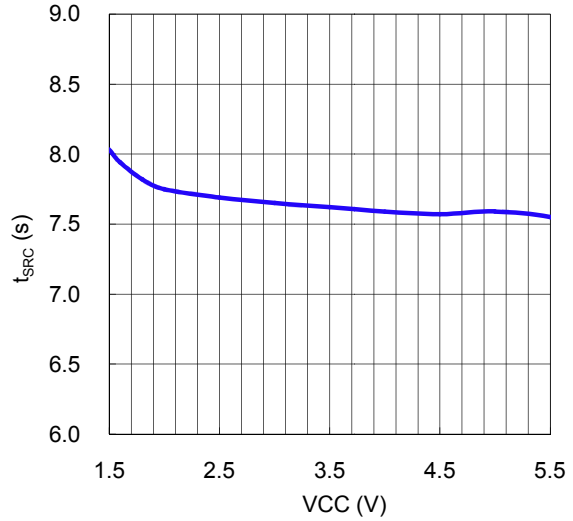


Fig.3 Reset Timer Delay vs. VCC

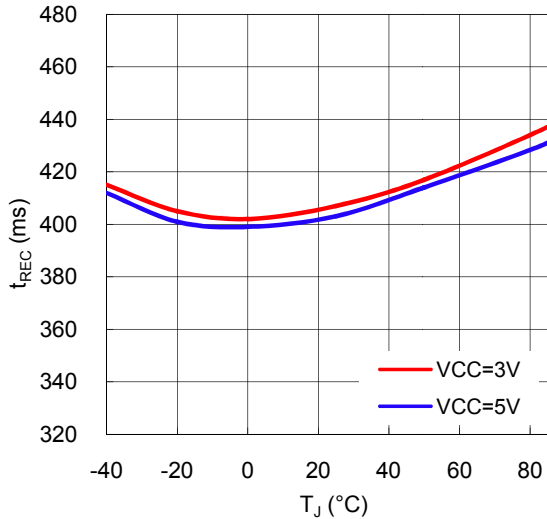


Fig.4 Reset Timeout Delay vs. Junction Temperature

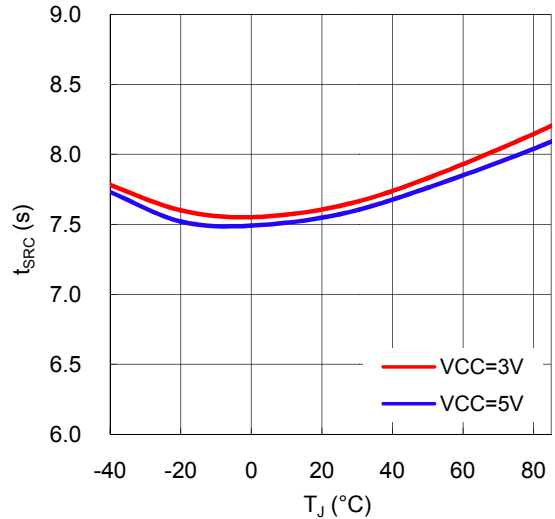


Fig.5 Reset Timer Delay vs. Junction Temperature

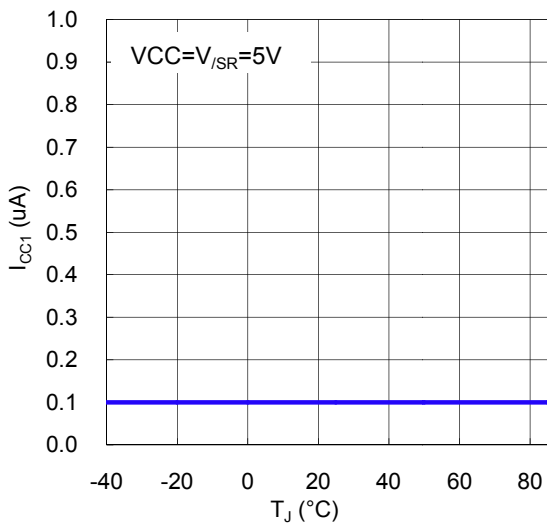


Fig.6 Quiescent Current vs. Junction Temperature

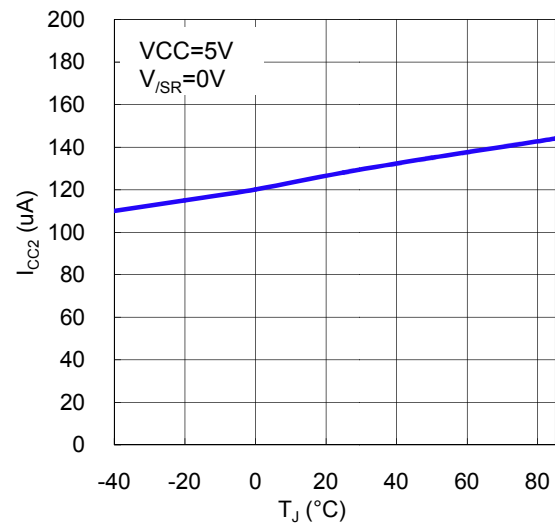


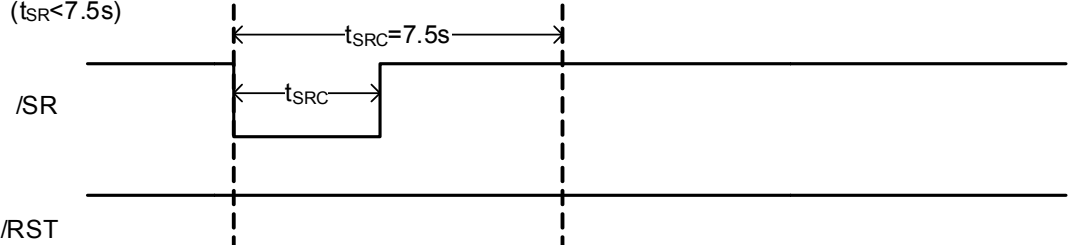
Fig.7 Operation Current vs. Junction Temperature



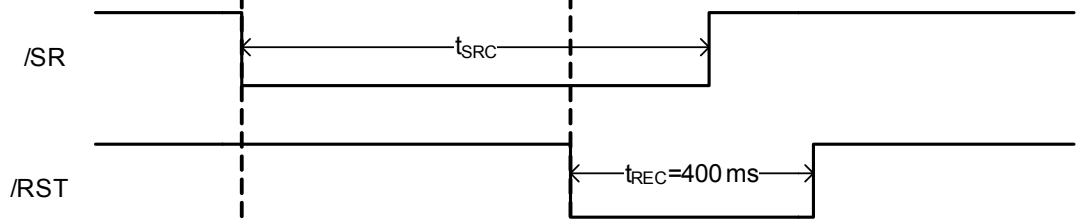
FUNCTION DESCRIPTION

Reset Timing

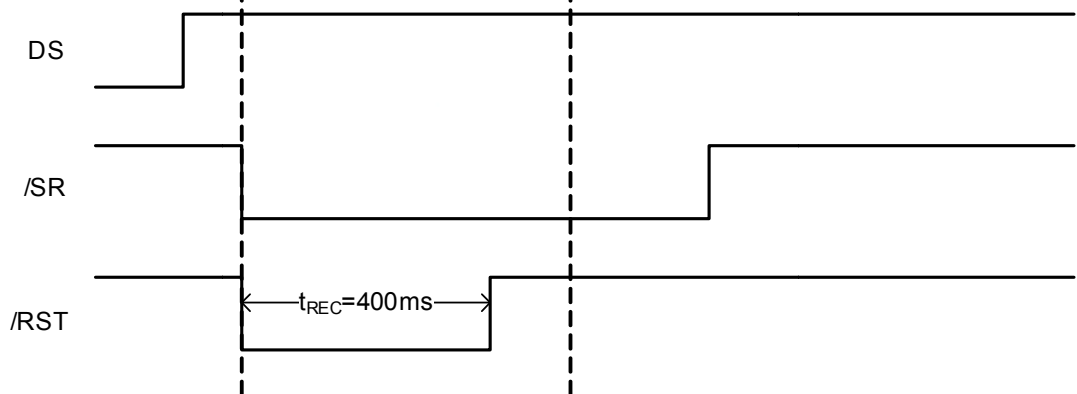
1. Short duration ($t_{SR} < 7.5s$)



2. Long duration ($t_{SR} > 7.5s$)



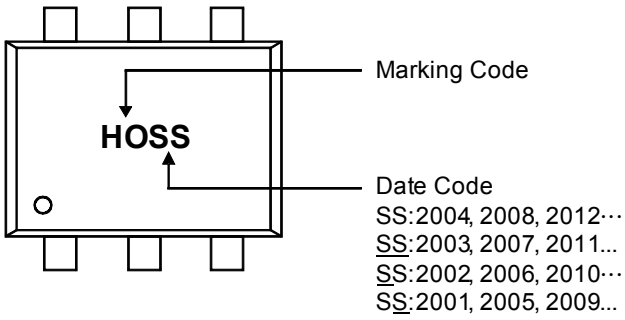
3. Test-Mode



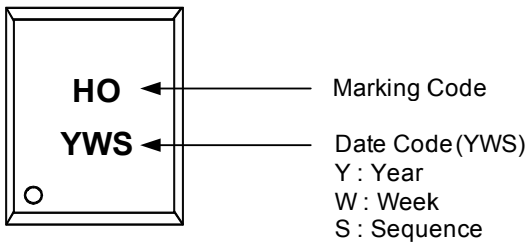


MARKING INFORMATION

SOT-26 / SC-70-6L



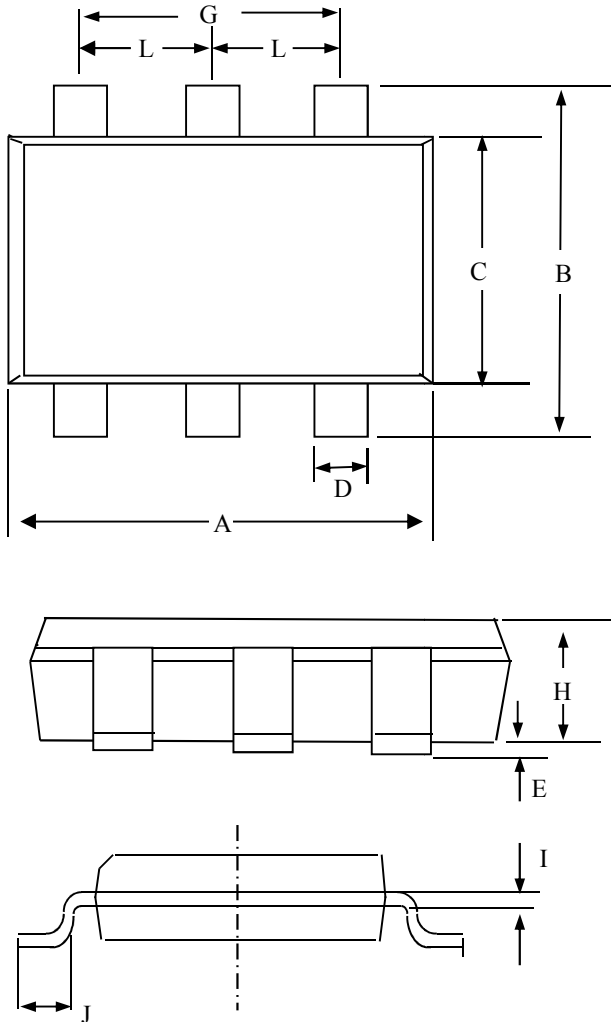
DFN 1.5x2-6L





PACKAGE OUTLINE

SOT-26



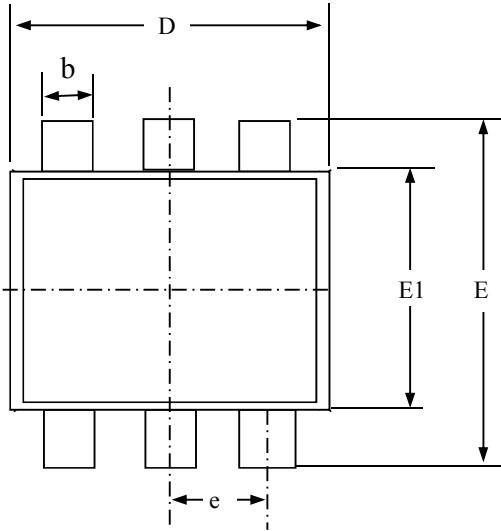
SYMBOLS	Millimeters		
	MIN	NOM	MAX
A	2.70	2.90	3.10
B	2.60	2.80	3.00
C	1.40	1.60	1.80
D	0.30	0.40	0.50
E	0.00	0.05	0.10
H	1.00	1.15	1.30
G	—	1.95 (ref.)	—
I	0.10	0.15	0.20
J	0.30	0.45	0.60
L	—	0.95 (ref.)	—

1. All Dimensions Are In Millimeters.
2. Dimension Does Not Include Mold Protrusions.

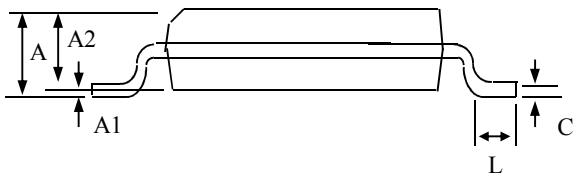


PACKAGE OUTLINE

SC-70-6L



SYMBOLS	Millimeters		
	MIN	NOM	MAX
A	0.80	0.95	1.10
A1	0.00	0.05	0.10
A2	0.70	0.85	1.00
b	0.15	0.25	0.35
C	0.05	0.15	0.25
D	1.80	2.00	2.20
E1	1.15	1.25	1.35
E	1.80	2.15	2.50
e	0.65 (ref.)		
L	0.26	0.36	0.46

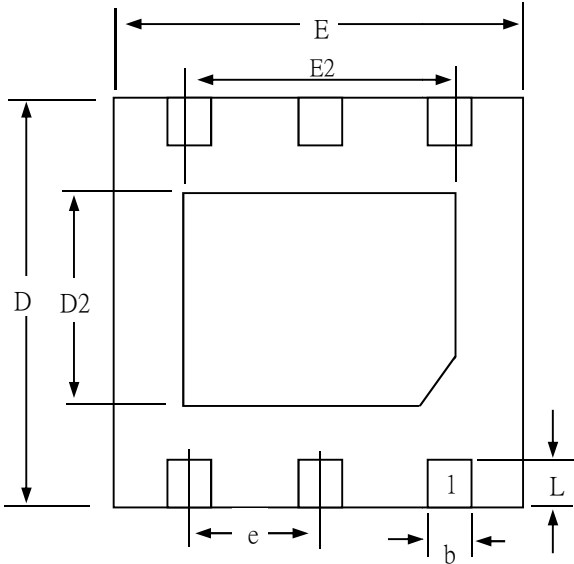


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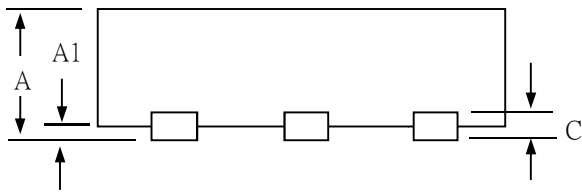


PACKAGE OUTLINE

DFN 1.5x2-6L



Bottom View



SYMBOLS	Millimeters		
	MIN	NOM	MAX
A	0.35	0.40	0.45
A1	0.00		0.05
b	0.20		0.30
C	0.127 (ref.)		
D	1.924	2.000	2.076
D2	0.80		1.00
E	1.424	1.500	1.576
E2	1.10	1.10	1.20
e	0.5 (ref.)		
L	0.174	0.250	0.326

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2. Dimension Does Not Include Mold Protrusions.