

< Multi-Function Transistor >

RT8H012C

Bipolar voltage detector

DESCRIPTION

RT8H012C is a NPN transistor, a PNP transistor, and the compound transistor constituted by resistance. A circuit designed for detecting input voltage and resetting system.

FEATURE

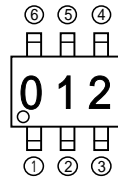
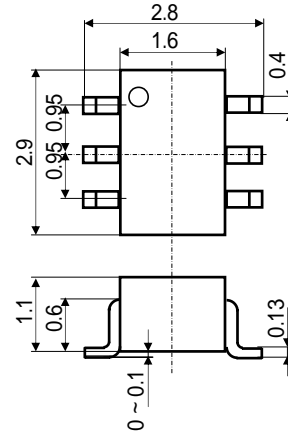
- The miniaturization of a set and high-density mounting are possible.
- Wide supply voltage range. (2V ~ 36V)
- A detection voltage setup is possible by external resistance.
- A delay time setup is possible by external capacity.
- "L" reset output of open collector.

APPLICATION

- Reset of logic circuit.
- Over voltage protection circuit.

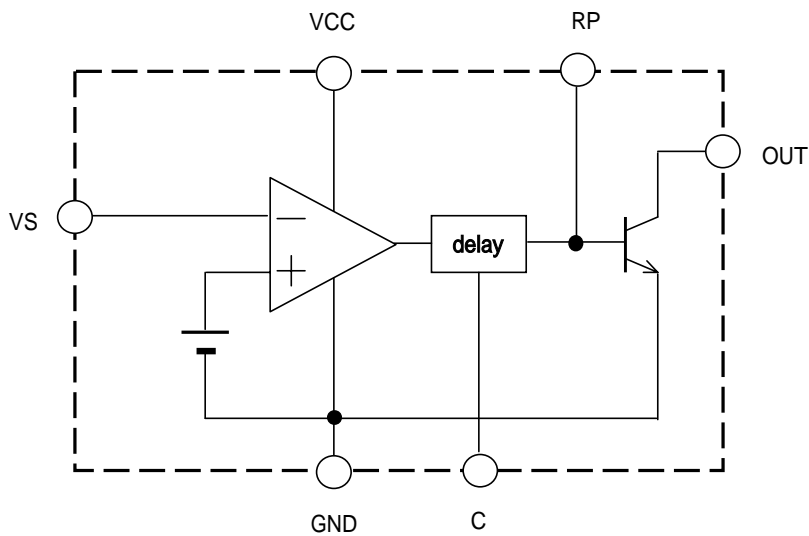
PIN CONFIGURATION

Unit : mm



Out line
VS
C
RP
OUT
GND
VCC

BLOCK DIAGRAM



Notes : The external resistance for an output capability setup needs to be connected for RP terminal.

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ABSOLUTE MAXIMUM RATINGS (Ta=25 Unless otherwise noted)

Symbol	Parameter	Ratings	Unit
V _{CC}	Supply voltage	37	V
V _{OUT}	Output voltage	V _{CC}	V
I _{OUT}	Output sink current	20	mA
PD	Power Dissipation	200	mW
T _{OPR}	Operating temperature	-20 ~ +75	
T _{STG}	Storage temperature	-40 ~ +150	

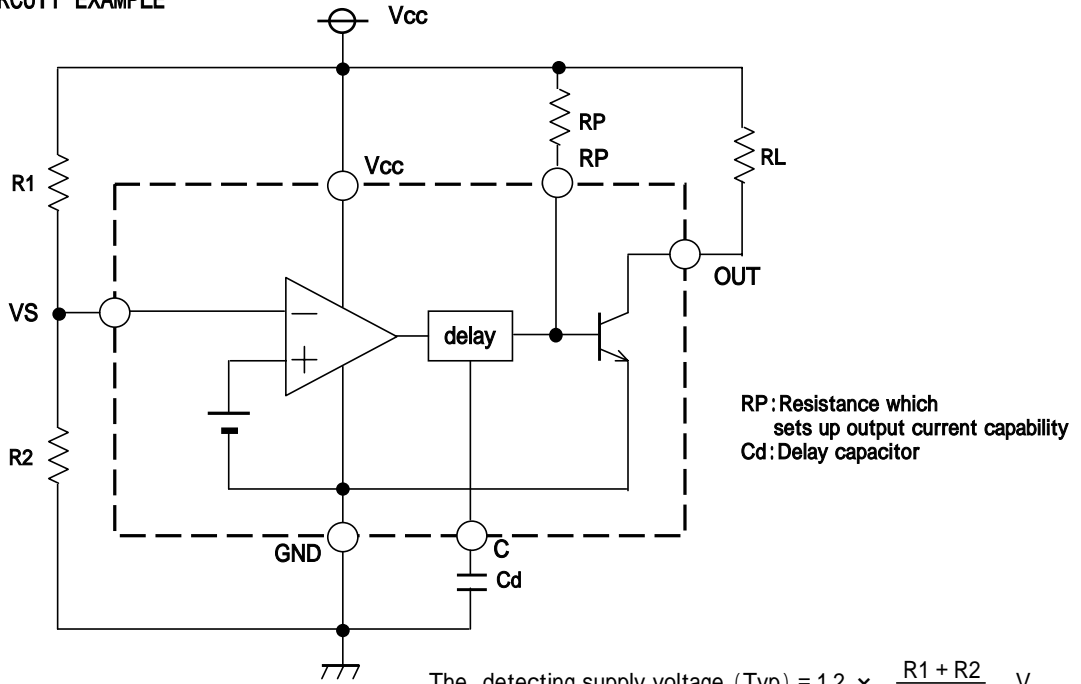
ELECTRICAL CHARACTERISTICS (V_{CC}=5V, Ta=25 Unless otherwise noted)

Symbol	Parameter	Test condition	Limits			Unit
			Min	Typ	Max	
V _{CC}	Supply voltage		2		36	V
I _{CC}	Circuit current	R _p =47k		250		uA
V _S	Detecting voltage		1.15	1.2	1.25	V
V _S	Hysteresis voltage		15	30	45	mV
V _S / T	Detecting voltage temperature coefficient			0.02		%/
V _{IN}	Input voltage range	V _{CC} - 7V	-0.3		V _{CC}	V
		V _{CC} > 7V	-0.3		7	
I _{IN}	Input current	V _S =1.25V		130	500	nA
T _{pd}	Delay time: V _{OUT} L H	C _d =0.1uF		2.4		ms
I _{cd}	Constant current at C _d pin		-80	-55	-30	uA
V _{o(sat)}	Output saturation voltage	R _p =47k, I _L =3mA		0.2	0.4	V
I _{oL}	Output leakage current	V _{OUT} =5V			1	uA

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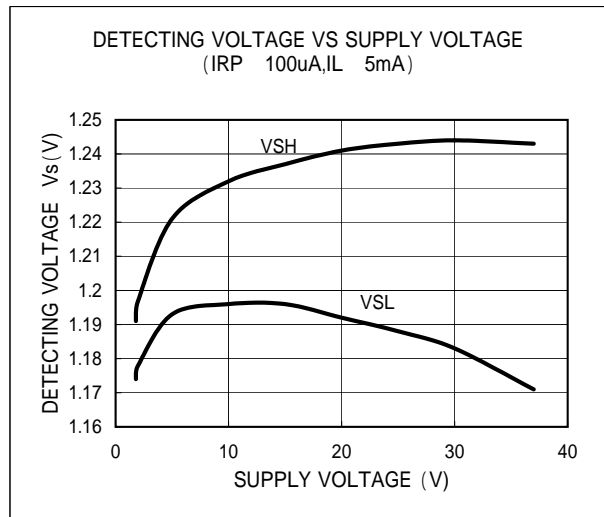
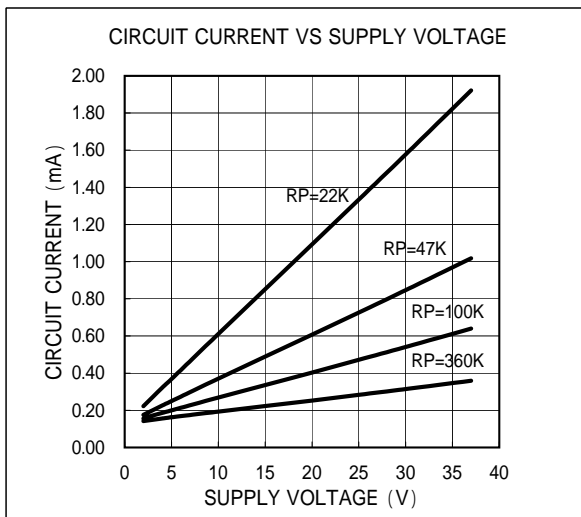
APPLICATION CIRCUIT EXAMPLE



The detecting supply voltage (Typ) = $1.2 \times \frac{R1 + R2}{R2} V$

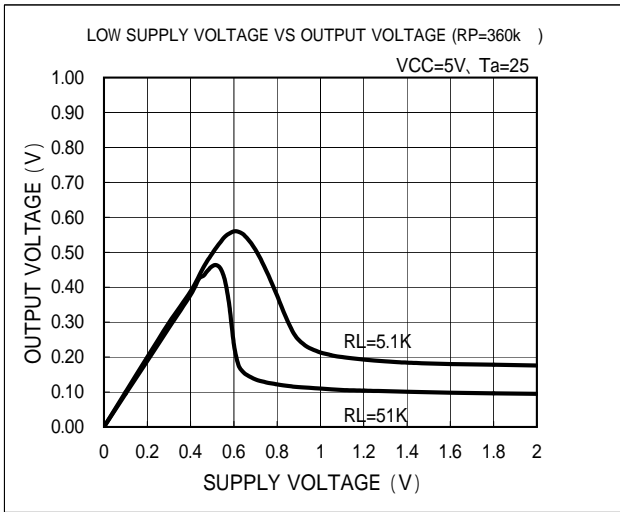
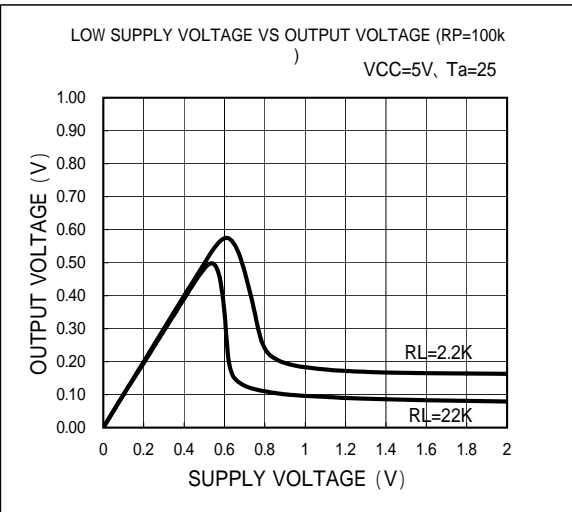
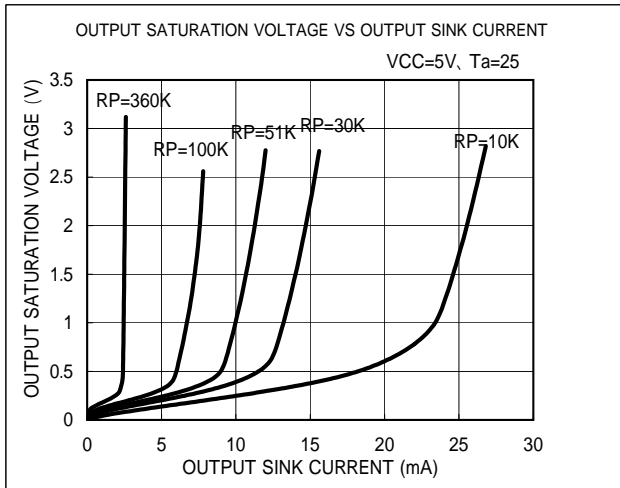
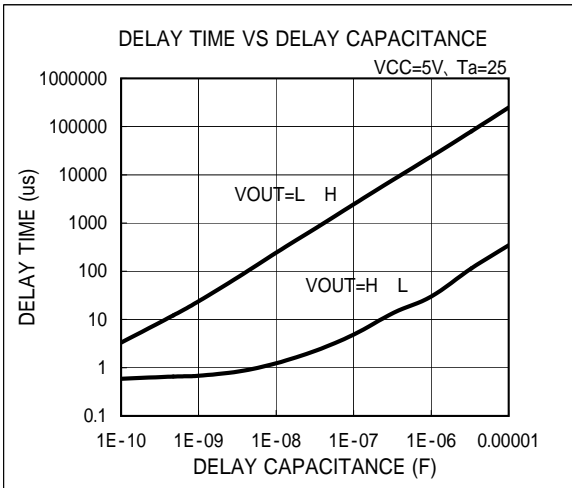
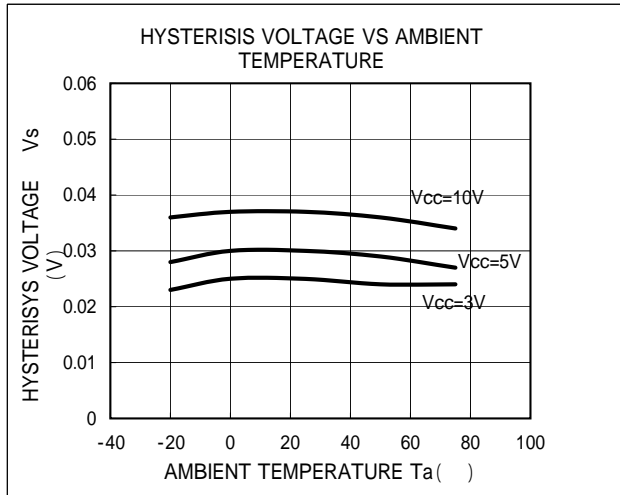
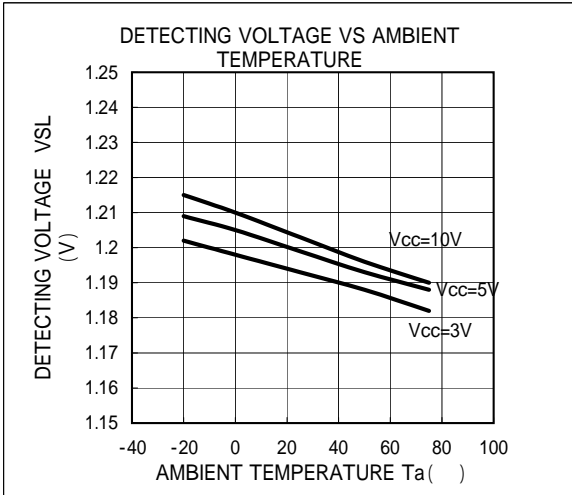
The delay time (Typ) = $0.024 \times Cd (\mu F) \text{ sec}$

TYPICAL CHARACTERISTICS



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Keep safety first in your circuit designs!

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