PRELIMINARY

MITSUBISHI Dig./Ana.INTERFACE

M51943AGP

VOLTAGE DETECTING, SYSTEM RESETTING IC SERIES

DESCRIPTION

M51943A are semiconductor integrated circuits designed for detecting supply voltage and resetting all types of logic circuits such as CPUs.

They find extensive applications,including battery checking circuits, level detecting circuit and waveform shaping circuit.

FEATURES

• Few external parts
• Detecting Voltage ………4.25V typ. (4.05V to 4.45V)
• Low threshold operating voltage (Supply voltage to keep low-state at low supply voltage) …0.6V(TYP.) at R_L=22k
• Wide supply voltage range ………… 2 to 17V
• Sudden change in power supply has minimal effect on the ICs
• Wide application range
• Extra small package (SOT-25)
      (M51943ASL:3pin SIP,M51943AML:3pin SOP, M51943AL:5pin SIPalready Mass production)

APPLICATION

• Reset pulse generation for almost all logic circuits
• Battery checking, level detecting, waveform shaping circuits
• Delayed waveform generator
• Switching circuit to a back-up power supply
• DC/DC converter
• Over voltage protection circuit

RECOMMENDED OPERATING CONDITION

• Supply voltage range ………… 2 to 17V

This product is under the development, therefore the technical specifications may be changed in the future.
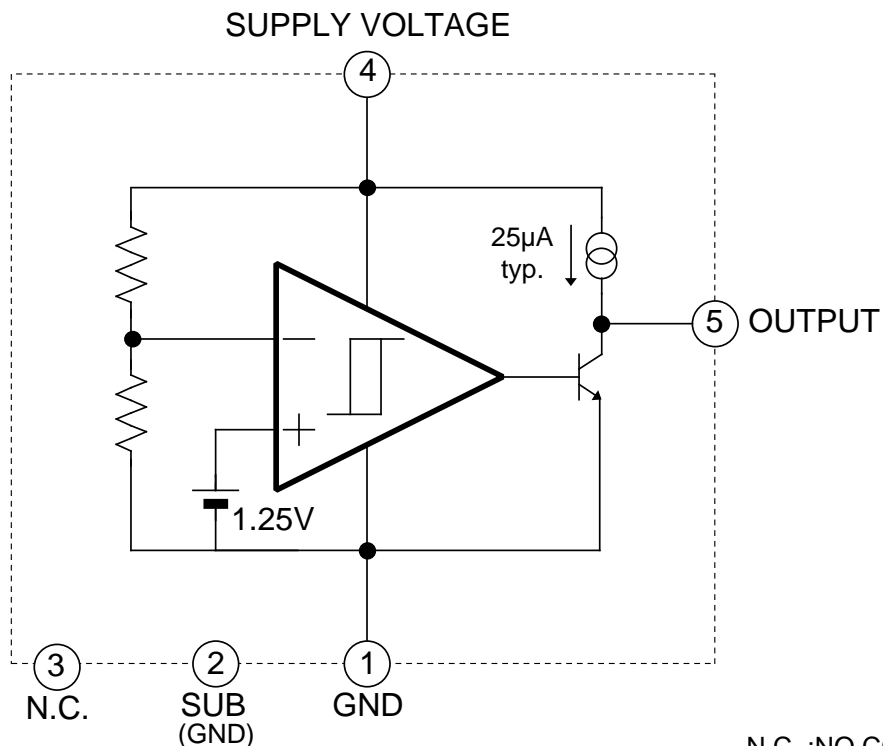
PIN CONFIGURATION (TOP VIEW)
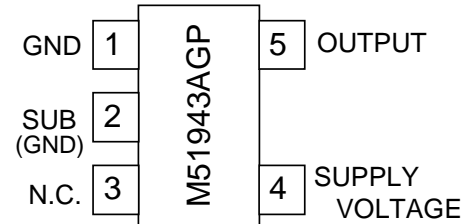
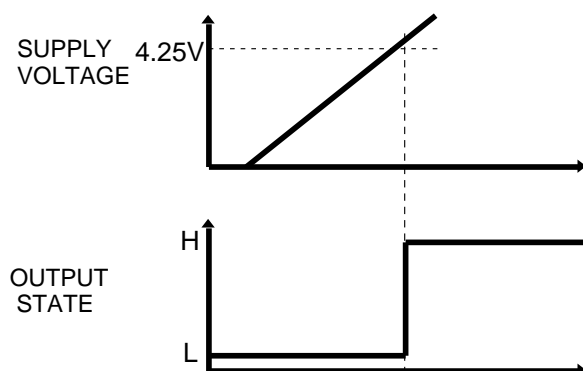Outline SOT-25

N.C. :NO CONNECTION

BLOCK DIAGRAM

N.C. :NO CONNECTION

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FUNCTION DIAGRAM

SUPPLY VOLTAGE 4.25V

OUTPUT STATE H L

ABSOLUTE MAXIMUM RATINGS (Ta=25°C Unless otherwise noted)

Symbol	Parameter	Test condition		Ratings	Unit
I_{CC}	Supply Voltage			18	V
Isink	Output Sink Current			6	mA
V_O	Output Voltage	Output with constant current load		Vcc	V
Pd	Power Dissipation	5pin SOP(SOT-25)		200	mW
K_θ	Thermal Derating	Ta 25°C	5pin SOP	2	mW/°C
Topr	Operating Temperature			-30 to +85	°C
Tstg	Storage Temperature			-40 to +125	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C, Unless otherwise noted)

Symbol	Parameter	Test condition		MIN	TYP	MAX	Unit
V_S	Detecting Voltage			4.05	4.25	4.45	V
V_S	Hysterisis Voltage			30	50	80	mV
V_S/T	Detecting Voltage Temperature Coefficient			——	0.01	——	%/°C
I_{CC}	Circut Current	VCC=5V		——	370	560	µA
Vsat	Output Saturation Voltage	VCC=4V,Isink=4mA		——	0.2	0.4	V
V_{OPL}	Threshold Operating Voltage	Minimum supply voltage for IC operation	RL=2.2k ,Vsat 0.4V	——	0.67	0.8	V
			RL=100k ,Vsat 0.4V	——	0.55	0.7	
I_{OC}	Output Load Current	VCC=5V,VO=1/2Vcc		-40	-25	-17	µA
V_{OH}	Output High Voltage			Vcc-0.2	Vcc-0.06	——	V
tPHL	Propagation Deray Time	Response time when Vcc changes H to L		——	6	——	µs
tPLH		Response time when Vcc changes L to H		——	3	——	

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Example of application circuit
Reset Circuit of M51943AGP
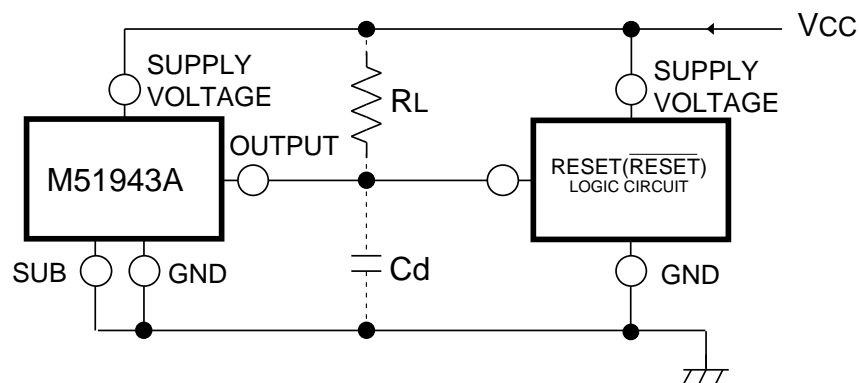
Note 1.

 This IC can be used whether a pull-up
 resistor is included in the logic circuit or not.

Note 2.

 The logic circuit preferably should not
 have a pull-down resistor,but if one is prese-
 nt,add load resistor R_L to overcome the pull-
 down resistor.

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