



THE DATASHEET OF ZSM560GTA



SUPPLY VOLTAGE MONITOR

ISSUE 4 – JULY 2006

ZSM560

DEVICE DESCRIPTION

The ZSM560 is a three terminal under voltage monitor circuit for use in microprocessor systems. The threshold voltage of the device has been set to 4.6 volts making it ideal for 5 volt circuits.

Included in the device is a precise voltage reference and a comparator with built in hysteresis to prevent erratic operation. The ZSM560 features an open collector output capable of sinking at least 10mA which only requires a single external resistor to interface to following circuits.

Operation of the device is guaranteed from one volt upwards, from this level to the device threshold voltage the output is held low providing a power on reset function. Should the supply voltage, once established, at any time drop below the threshold level then the output again will pull low.

The device is available in a TO92 package for through hole applications as well as SOT223 for surface mount requirements.

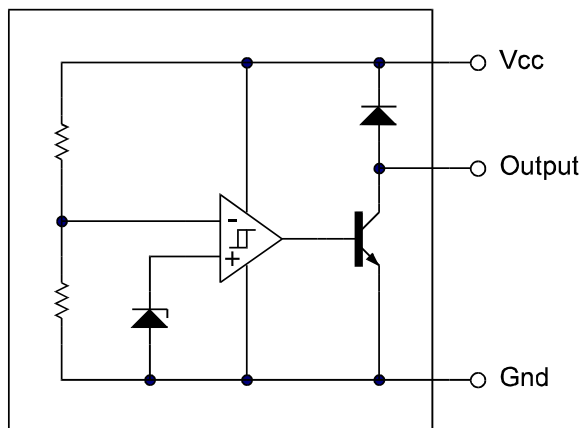
FEATURES

- SOT223 and TO92 packages
- Power on reset generator
- Automatic reset generation
- Low standby current
- Guaranteed operation from 1 volt
- Wide supply voltage range
- Internal clamp diode to discharge delay capacitor
- 4.6 volt threshold for 5 volt logic
- 20mV hysteresis prevents erratic operation

APPLICATIONS

- Microprocessor systems
- Computers
- Computer peripherals
- Instrumentation
- Automotive
- Battery powered equipment

SCHEMATIC DIAGRAM



ZSM560

ABSOLUTE MAXIMUM RATING

Input Supply Voltage	-1 to 10V	Power Dissipation	
Offstate Output Voltage	10V	TO92	780mW
Onstate Output		SOT223	2W(Note 2)
Sink Current(Note 1)	Internally limited		
Clamp Diode			
Forward Current(Note 1)	100mA		
Operating Junction Temperature	150°C		
Operating Temperature	-40 to 85°C		
Storage Temperature	-55 to 150°C		

TEST CONDITIONS

($T_{amb}=25^{\circ}\text{C}$ for typical values, $T_{amb}=-40$ to 85°C for min/max values (Note3))

COMPARATOR

PARAMETER	SYMBOL	MIN	TYP.	MAX.	UNITS
Threshold Voltage					
High state output (V _{cc} increasing)	V _{IH}	4.5	4.61	4.7	V
Threshold Voltage					
Low state output (V _{cc} decreasing)	V _{IL}	4.5	4.59	4.7	V
Hysteresis	V _H	0.01	0.02	0.05	V

OUTPUT

Output sink saturation:	V _{OL}				
(V _{cc} =4.0V, I _{sink} =8.0mA)			0.46	1.0	V
(V _{cc} =4.0V, I _{sink} =2.0mA)			0.15	0.4	V
(V _{cc} =1.0V, I _{sink} =0.1mA)				0.25	V
Onstate output sink current (V _{cc} , Output=4V)	I _{sink}	10	20	60	mA
Offstate output leakage current (V _{cc} , Output=5V)	I _{oh}		0.02	0.5	μA
Clamp diode forward voltage (I _f =10mA)	V _f	0.6	1.2	1.5	V
Propagation delay (V _{in} 5V to 4V, R _I =10k, T _{amb} =25°C)	T _d		1.5		μs

TOTAL DEVICE

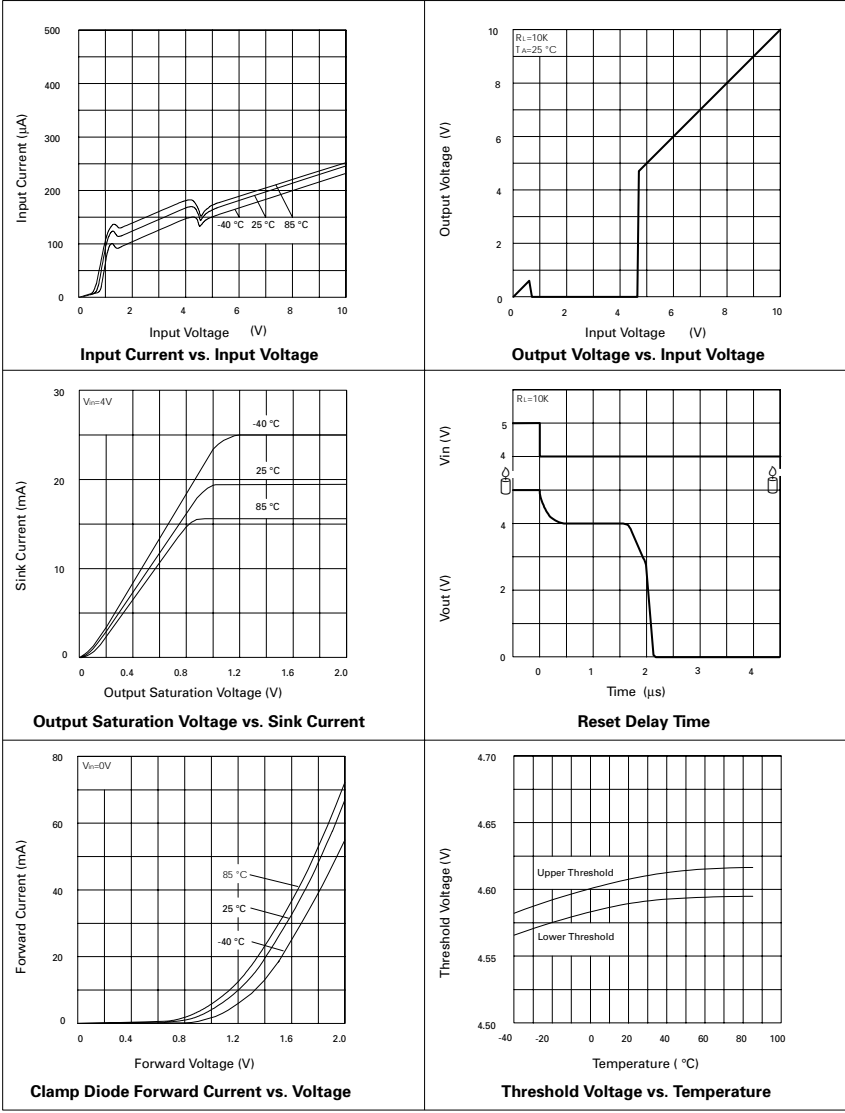
Operating input voltage range	V _{cc}	1.0 to 6.5			V
Quiescent input current (V _{cc} =5V)	I _q		135	200	μA

Note:

1. Maximum package power dissipation must be observed.
2. Maximum power dissipation for the SOT223 package is calculated assuming that the device is mounted on a PCB measuring 2 inches square.
3. Low duty cycle pulse techniques are used during test to maintain junction temperatures as close to ambient as possible.

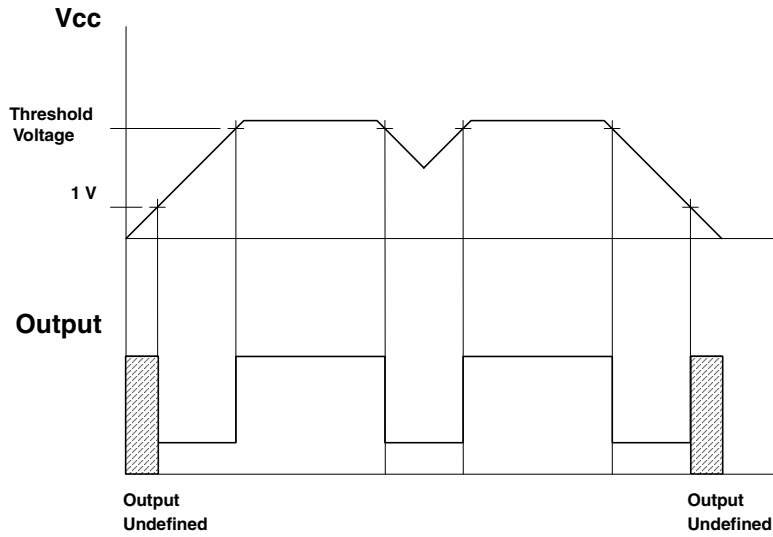
ZSM560

TYPICAL CHARACTERISTICS

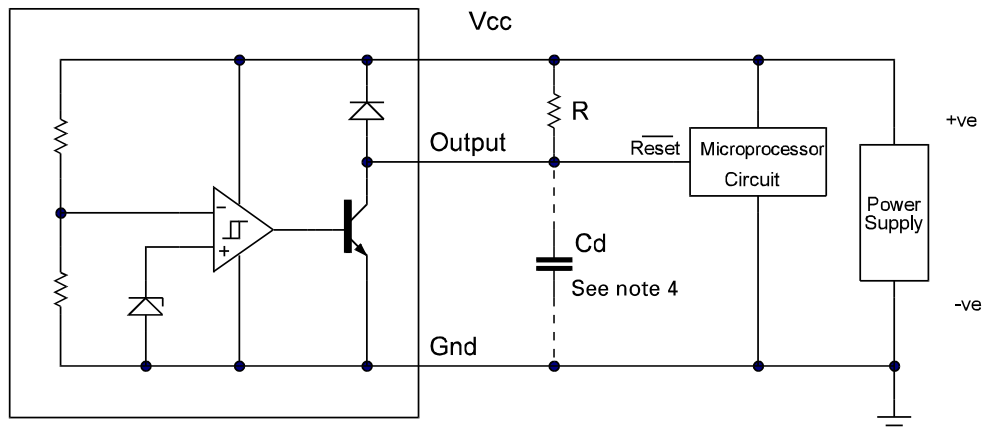


ZSM560

TIMING DIAGRAM



APPLICATION CIRCUIT



Note 4: A time delayed reset can be accomplished with the additional Cd.

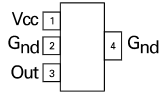
$$T_{DY} = RCd \ln \left(\frac{1}{1 - \frac{V_{TH(mpu)}}{V_{in}}} \right)$$

T_{DY} = Time (Seconds)
 V_{TH} = Microprocessor Reset Threshold
 V_{in} = Power Supply Voltage

ZSM560

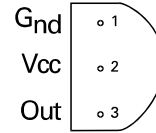
CONNECTION DIAGRAMS

SOT223 Package Suffix – G



*Top View –
Pin 4 floating or connected to pin 2*

TO92 Package Suffix – C



Bottom View

ORDERING INFORMATION

Part Number	Package	Part Mark
ZSM560G	SOT223	ZSM560
ZSM560C	TO92	ZSM560

Europe	Americas	Asia Pacific	Corporate Headquarters
Zetex GmbH Streitfeldstraße 19 D-81673 München Germany	Zetex Inc 700 Veterans Memorial Highway Hauppauge, NY 11788 USA	Zetex (Asia Ltd) 3701-04 Metroplaza Tower 1 Hing Fong Road, Kwai Fong Hong Kong	Zetex Semiconductors plc Zetex Technology Park, Chadderton Oldham, OL9 9LL United Kingdom
Telefon: (49) 89 45 49 49 0 Fax: (49) 89 45 49 49 49 europe.sales@zetex.com	Telephone: (1) 631 360 2222 Fax: (1) 631 360 8222 usa.sales@zetex.com	Telephone: (852) 26100 611 Fax: (852) 24250 494 asia.sales@zetex.com	Telephone: (44) 161 622 4444 Fax: (44) 161 622 4446 hq@zetex.com

For international sales offices visit www.zetex.com/offices

Zetex products are distributed worldwide. For details, see www.zetex.com/salesnetwork

This publication is issued to provide outline information only which (unless agreed by the company in writing) may not be used, applied or reproduced for any purpose or form part of any order or contact or be regarded as a representation relating to the products or services concerned. The company reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service.



Issue 4 - July 2006

© Zetex Semiconductors plc 2006

www.zetex.com

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View ZSM560GTA on WIN SOURCE](#)
-  [Diodes Incorporated Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management