

## Processor Supervisor 2.93V 1 Active Low/Push-Pull Automotive 5-Pin SOT-23 T/R

<b>Manufacturer:</b>	<a href="#">Texas Instruments, Inc</a>	<a href="#">TPS3820-33QPDBVRQ1 Image</a>
<b>Package/Case:</b>	SOT23-5	Images are for reference only
<b>Product Type:</b>	Power Management ICs	<a href="#" style="background-color: #f4a460; color: white; padding: 5px 15px; border-radius: 3px;">Inquiry</a>
<b>RoHS:</b>	RoHS Compliant/Lead free 	
<b>Lifecycle:</b>	Active	

### General Description

For all new designs with TPS3820-xx-Q1, use the TPS3820-xxQPDBVRQ1 part number. The TPS3820-xxQP is functionally equivalent and a replacement to the TPS3820xxQ. The TPS3820-xxQDBVRQ1 is not recommended for new designs (NRND).

The TPS382x-xx-Q1 family of supervisors provide circuit initialization and timing supervision, primarily for DSP and processor-based systems. During power on,  $\overline{\text{RESET}}$  asserts when the supply voltage  $V_{DD}$  becomes greater than 1.1 V. Thereafter, the supply voltage supervisor monitors  $V_{DD}$  and keeps  $\overline{\text{RESET}}$  active low as long as  $V_{DD}$  remains below the threshold voltage,  $V_{IT}$ . An internal timer delays the return of the output to the inactive state (high) to ensure proper system reset. The delay time,  $t_d$ , starts after  $V_{DD}$  has risen above the threshold voltage  $V_{IT}$ . When the supply voltage drops below the threshold voltage  $V_{IT}$ , the output becomes active (low) again. No external components are required. All the devices of this family have a fixed-sense threshold voltage,  $V_{IT}$ , set by an internal voltage divider. The TPS382x-xx-Q1 family also offers watchdog time out options of 200 ms (TPS3820-xx-Q1) and 1.6 s (TPS3823/4/8-xx-Q1).

## Key Features

Qualified for automotive applications

AEC-Q100 Qualified With the Following Results:

Device temperature grade 1:  $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$

Device HBM ESD classification level 2

Device CDM ESD classification level C4B

ESD protection exceeds 2000 V Per MIL-STD-883, Method 3015; using human body model ( $C = 100\text{ pF}$ ,  $R = 1500\ \Omega$ )

Power-on reset generator with fixed delay time of 200 ms (TPS3823/4/5/8-xx-Q1) or 25 ms (TPS3820-xx-Q1)

Manual reset input (TPS3820/3/5/8-xx-Q1)

Reset output available in active-low (TPS3820/3/4/5-xx-Q1), Active-High (TPS3824/5-xx-Q1), and open drain (TPS3828-xx-Q1)

Supply voltage supervision range:

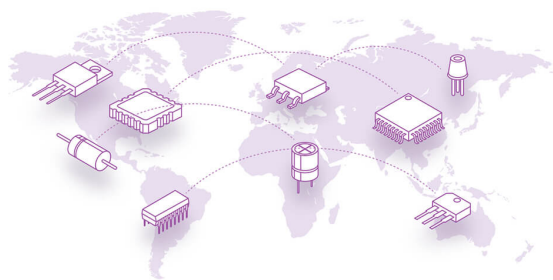
2.5 V, 3 V, 3.3 V, 5 V

Watchdog timer (TPS3820/3/4/8-xx-Q1)

Supply current of 15  $\mu\text{A}$  (Typical)

5-Pin SOT-23 package

Temperature range:  $40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$



## Recommended For You

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**TPD3S014DBVR**

Texas Instruments, Inc  
SOT23-6

**TPS2065CDBVR**

Texas Instruments, Inc  
SOT23-5

**TPS2557DRBT**

Texas Instruments, Inc  
SON8

**TPS2042BDR**

Texas Instruments, Inc  
SOP8

**TPS2051BDR**

Texas Instruments, Inc  
SOP8

**TPL7407LPWR**

Texas Instruments, Inc  
TSSOP16

**TPS23753APWR**

Texas Instruments, Inc  
TSSOP14

**TPS2116DRLR**

Texas Instruments, Inc  
SOT5X3-8

**TPS259460ARPWR**

Texas Instruments, Inc  
VQFN-10

**TPS23751PWPR**

Texas Instruments, Inc  
HTSSOP16

**TPS65150QPWPRQ1**

Texas Instruments, Inc  
HTSSOP-24

**TPS2410PWR**

Texas Instruments, Inc  
TSSOP-14

**TPS22914BYFPR**

Texas Instruments, Inc  
DSBGA4

**TPS2115ADRBR**

Texas Instruments, Inc  
VSON8

**TPS2113ADRBR**

Texas Instruments, Inc  
SON8