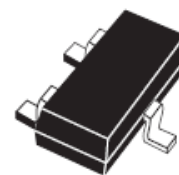


**L809LW/ IL809MW/ IL809TW/ IL809SW/ IL809RW/
IL810LW/ IL810MW/ IL810TW/ IL810SW/ IL810RW** – family of integrated circuit of system reset for case of power supply malfunction. Functional equivalents STM809LW/ STM809MW/ STM809TW/ STM809SW/ STM809RW/ STM810LW/ STM810MW/ STM810TW/ STM810SW/ STM810RW (STM, France). The device is designed for use in modern systems of data processing in order to increase reliability, improve the quality of their work, and consumer properties.



**Fig. 1 – View of IL809SW
in package SOT23-3**

Main features:

- Generation of system reset signal when the power is turned on;
- Generation of system reset signal while lowering the voltage below the threshold level U_{RST} .
- Single power supply $U_{CC} = (1,0 - 5,5) V$;
- Temperature range from minus 40 to plus 85 °C;
- Permissible electrostatic discharge potential 2000V;
- No additional external components.

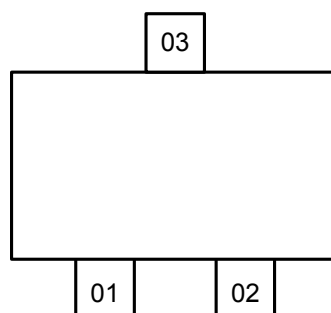


Fig 2 Pin layout

**IL809LW, IL809MW, IL809TW, IL809SW, IL809RW,
IL810LW, IL810MW, IL810TW, IL810SW, IL810RW**

Table 1 – Pin-pad description table IL809LW, IL809MW, IL809TW, IL809SW, IL809RW

| Pin number | Pad number | Symbol | Description |
|------------|------------|------------------|---------------------|
| 01 | 01 | GND | Common pin (Ground) |
| 02 | 07 | \overline{RST} | Reset output |
| 03 | 08 | V_{CC} | Power supply pin |

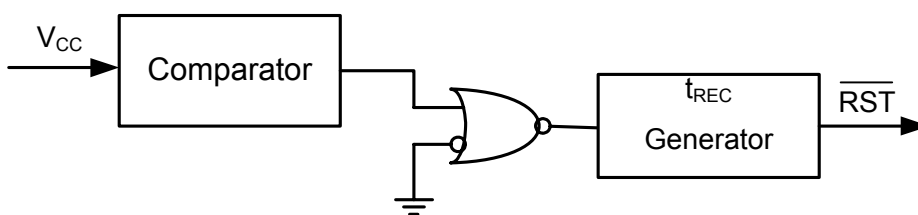


Fig 3 Block diagram of IL809LW, IL809MW, IL809TW, IL809SW, IL809RW

Table 2 – Pin-pad description table for IL810LW, IL810MW, IL810TW, IL810SW, IL810RW

| Pin number | Pad number | Symbol | Description |
|------------|------------|----------|---------------------|
| 01 | 01 | GND | Common pin (Ground) |
| 02 | 07 | RST | Reset output |
| 03 | 08 | V_{CC} | Power supply pin |

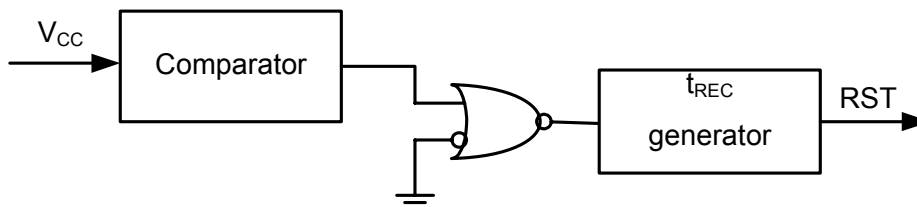


Fig. 4 Block diagram of IL810LW, IL810MW, IL810TW, IL810SW, IL810RW

**IL809LW, IL809MW, IL809TW, IL809SW, IL809RW,
IL810LW, IL810MW, IL810TW, IL810SW, IL810RW**

Table 2 Absolute maximum ratings

| Parameter | Symbol | Norm | | Unit |
|-----------------------------|-----------|------|----------|-------------|
| | | Min | Max | |
| Supply voltage | U_{CC} | -0,3 | 7,0 | V |
| Output diode current | I_{OD} | - | ± 20 | mA |
| Operating temperature range | T_a | -40 | 85 | $^{\circ}C$ |
| Storage temperature | T_{STG} | -55 | 150 | $^{\circ}C$ |

Table 3 Recommended operation mode

| Parameter | Symbol | Norm | | Unit |
|-----------------------------|----------|------|-----|-------------|
| | | Min | Max | |
| Supply voltage | U_{CC} | 1,0 | 5,5 | V |
| Operating temperature range | T_a | -40 | 85 | $^{\circ}C$ |

Table 5 Electric parameters

| Parameter, unit | Symbol | Measurement mode | Norm | | Ambient temperature, $^{\circ}C$ |
|--|-----------|--|--|---------------------|----------------------------------|
| | | | Min | Max | |
| Consumption current, μA | I_{CC} | $U_{CC} = 3,6 V$ | - | 10,0 | 25 \pm 10; -40; 85 |
| | | $U_{CC} = 5,5 V$ | | 15,0 | |
| Low level output voltage, V IL809TW, IL809SW, IL809RW | U_{OL} | $I_{OL} = 1,2 mA$; $U_{CC} = U_{RSTmin}$ | - | 0,3 | 25 \pm 10; -40; 85 |
| IL809LW, IL809MW | | $I_{OL} = 3,2 mA$; $U_{CC} = U_{RSTmin}$ | - | 0,4 | 25 \pm 10; -40; 85 |
| IL809TW, IL809SW, IL809RW, IL809LW, IL809MW | | $I_{OL} = 50 \mu A$; $U_{CC} = 1,0 V$ | - | 0,3 | 25 \pm 10; -40; 85 |
| IL810TW, IL810SW, IL810RW | | $I_{OL} = 1,2 mA$; $U_{RSTmax} < U_{CC} < 5,5 V$ | - | 0,3 | 25 \pm 10; -40; 85 |
| IL810LW, IL810MW | | $I_{OL} = 3,2 mA$; $U_{RSTmax} < U_{CC} < 5,5 V$ | - | 0,4 | |
| High level output voltage, V | | U_{OH} | $I_{OH} = -500 \mu A$; $U_{RSTmax} < U_{CC} < 5,5 V$ | $0,8 \times U_{CC}$ | - |
| Reset threshold voltage, V IL809LW, IL810LW IL809MW, IL810MW IL809TW, IL810TW IL809SW, IL810SW IL809RW, IL810RW | U_{RST} | - | 4,56 | 4,70 | 25 \pm 10 |
| | | | 4,50 | 4,75 | -40; 85 |
| | | | 4,31 | 4,45 | 25 \pm 10 |
| | | | 4,25 | 4,50 | -40; 85 |
| | | | 3,04 | 3,11 | 25 \pm 10 |
| | | | 3,00 | 3,15 | -40; 85 |
| | | | 2,89 | 2,96 | 25 \pm 10 |
| | | | 2,85 | 3,00 | -40; 85 |
| | | | 2,59 | 2,66 | 25 \pm 10 |
| | | | 2,55 | 2,70 | -40; 85 |

Operation:

Reset at power turn on and supply voltage fall under $U_{CC} < U_{RST}$,

When the voltage U_{CC} increases, the voltage detector keeps the reset signal active until U_{CC} not exceed U_{RST} and kept active during the time (not less than 280 ms), which is determined by the frequency of internal oscillator and the selected bit of internal counter by using which \overline{RST} RST signal of given duration and stop signal of the internal generator is produced.

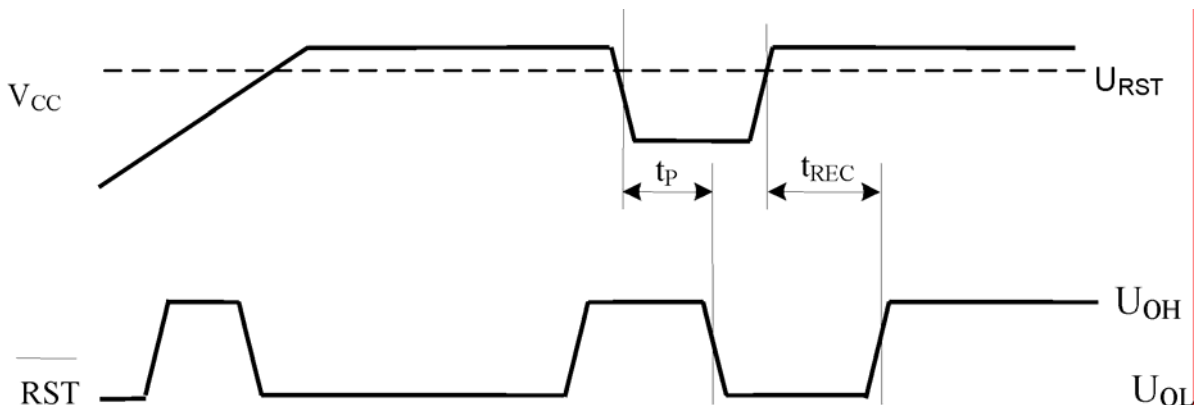


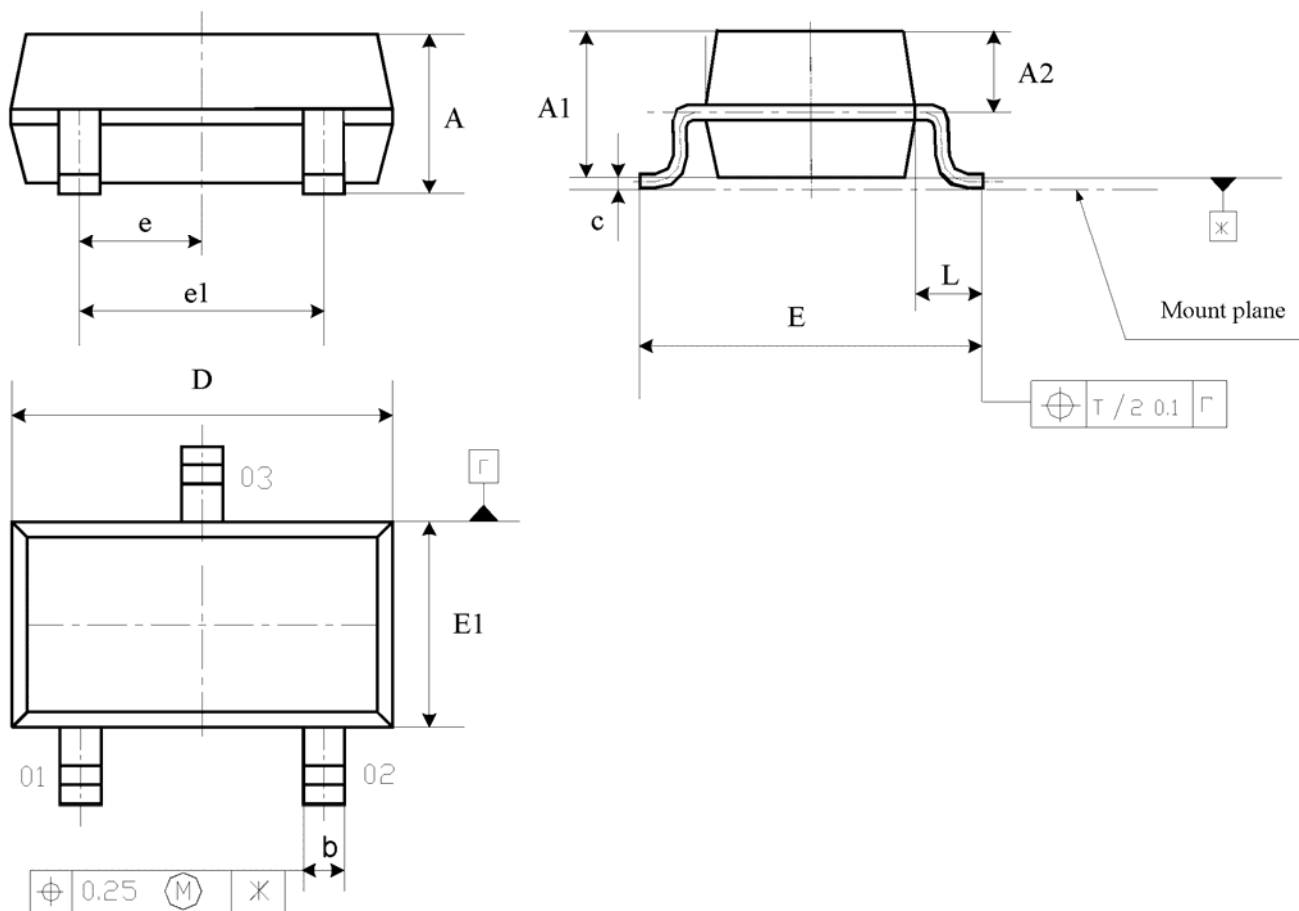
Fig.5 - \overline{RST} (RST) signal time diagram

If supply voltage varies cyclically, the level should fall below the value U_{RST} , that guaranteed a new \overline{RST} (RST) signal when the voltage will recover again. If the voltage U_{CC} not falls below the level U_{RST} the \overline{RST} (RST) signal is not generated.

Table 6 Reference electric parameters at Ta from minus 20 to plus 85 °C

| Symbol | Parameter, unit | Norm | | | Unit |
|--|--|------|-----|-----|---------|
| | | Min | Typ | Max | |
| $K_{T_{URST}}$ | Threshold voltage temperature coefficient | - | 45 | - | ppm/°C |
| $t_P^{1)}$ | \overline{RST} signal delay IL809TW, IL809SW, IL809RW | - | 20 | - | μ s |
| | IL809LW, IL809MW | | 40 | | |
| $t_{REC}^{1)}$ | Reset signal duration | 140 | - | 280 | μ s |
| ¹⁾ For IL809LW, IL809MW, IL809TW, IL809SW, IL809RW only | | | | | |

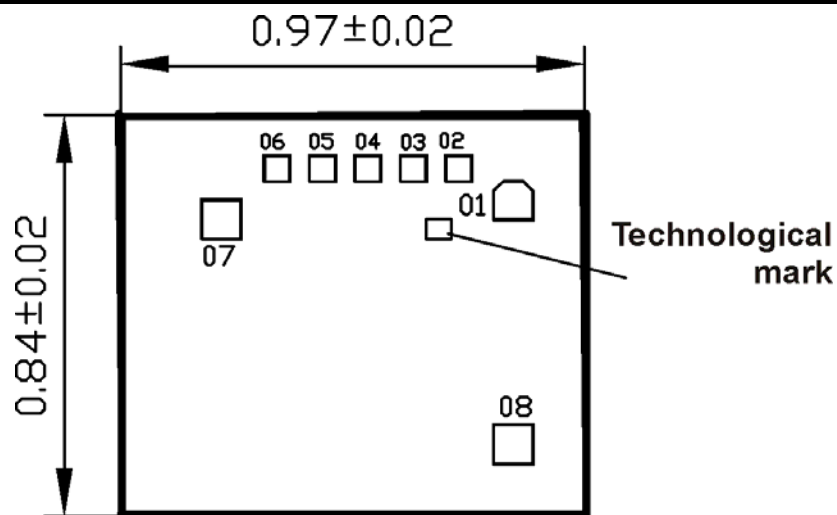
PACKAGE DIMENSIONS



| | A | A1 | A2 | b | c | D | E | E1 | e | e1 | L |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| mm | | | | | | | | | | | |
| min | 1,00 | 0,75 | 0,50 | 0,38 | 0,09 | 2,80 | 2,48 | 1,38 | 0,95 | 1,90 | 0,50 |
| max | 1,20 | 0,95 | 0,65 | 0,50 | 0,15 | 3,00 | 2,50 | 1,40 | | | 0,60 |
| inches | | | | | | | | | | | |
| min | 0,039 | 0,030 | 0,020 | 0,015 | 0,004 | 0,110 | 0,097 | 0,054 | 0,037 | 0,075 | 0,020 |
| max | 0,047 | 0,037 | 0,026 | 0,020 | 0,006 | 0,118 | 0,098 | 0,055 | | | 0,024 |

Fig. 6 SOT23-3 package outline drawing

**IL809LW, IL809MW, IL809TW, IL809SW, IL809RW,
IL810LW, IL810MW, IL810TW, IL810SW, IL810RW**



Technological mark coordinates mm IL809LW/ IL809MW/ IL809TW/ IL809SW/ IL809RW/
IL810LW/ IL810MW/ IL810TW/ IL810SW/ IL810RW: left bottom corner $x = 0,68, y = 0,47$

Die thickness $0,46 \pm 0,02$ mm.

| Contact pad number | Coordinates (left bottom corner), mm | | Contact pad size, mm |
|--------------------|--------------------------------------|-------|----------------------|
| | X | Y | |
| 01 | 0,780 | 0,620 | 0,082 x 0,082 |
| 02 | 0,680 | 0,700 | 0,054 x 0,054 |
| 03 | 0,585 | 0,700 | 0,054 x 0,054 |
| 04 | 0,490 | 0,700 | 0,054 x 0,054 |
| 05 | 0,395 | 0,700 | 0,054 x 0,054 |
| 06 | 0,300 | 0,700 | 0,054 x 0,054 |
| 07 | 0,170 | 0,580 | 0,082 x 0,082 |
| 08 | 0,780 | 0,110 | 0,082 x 0,082 |

Note: Contact pad coordinates and size are indicated under «Passivation» layer

Fig. 7 Chip diagram and contact pad location