

Micro Monitor Supply Control

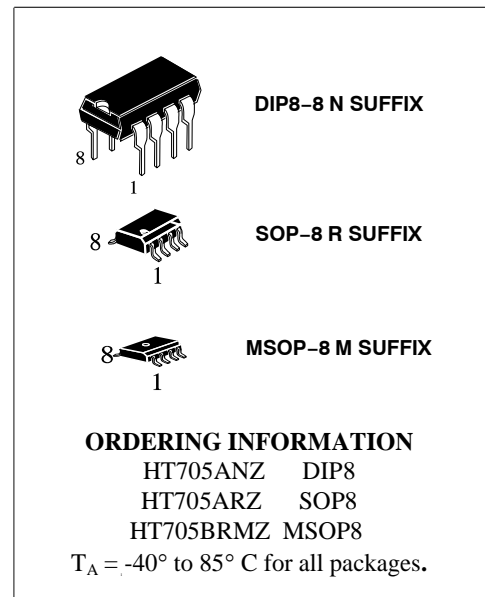
(compatible to MAX705/SP705/ADM705/DS1705/ISL88705)

The HT705 is designed to control power supply and to start microcontroller and microprocessor systems. It is used for securing stable functioning of the system when starting and halting the device as well as in the case of the supply voltage drops.

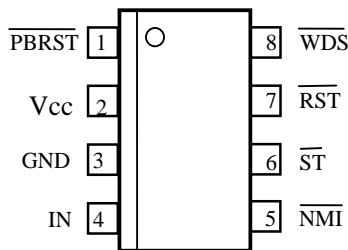
The HT705 contains a source of reference voltage, two analog comparators, watchdog timer, digital sampler, digital delay.

Features:

- rated supply voltage 5.0 V;
- generation of reset signal when power supply is on for correct start of microprocessor;
- generation of reset signal when power supply drops below the operating one to avoid incorrect functioning of microprocessor;
- generation of reset signal when pushing reset button;
- possibility to program threshold voltage at which reset signal is generated.
- generation of reset signal per fixed level of supply voltage;
- generation of reset signal from external “Reset” button;
- generation of signal of watchdog timer status;
- emergency interruption of primary power source.

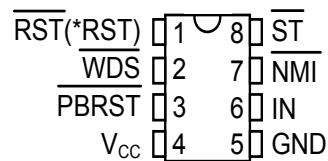


PIN DESCRIPTION



DIP8,SOP8

- | | |
|---------------------------|--|
| $\overline{\text{PBRST}}$ | - Pushbutton Reset Input |
| V_{CC} | - Power Supply |
| GND | - Ground |
| IN | - Input |
| $\overline{\text{NMI}}$ | - Non-maskable Interrupt |
| $\overline{\text{ST}}$ | - Strobe Input |
| $\overline{\text{RST}}$ | - Active Low Reset Output |
| *RST | - Active High Reset Output (HT1706P and HT1706L only) |
| $\overline{\text{WDS}}$ | - Watchdog Status Output |



MSOP8 (118-mil)

Industrial temperature range

Industrial temperature range - 40°C to + 85°C.

Table 1 – Recommended operating conditions

| Symbol | Parameter | Typical | | Units |
|-----------------|-----------------------------|---------|----------------------|-------|
| | | min | max | |
| V _{CC} | Supply voltage | 1.2 | 5.5 | V |
| V _{IH} | Input voltage, high level | 2.0 | V _{CC} +0.3 | V |
| V _{IL} | Input voltage, low level | -0.03 | 0.5 | V |
| T _A | Operating temperature range | -40 | 85 | °C |

Table 2 – Absolute maximum ratings

| Symbol | Parameter | Typical | | Units |
|------------------|---------------------------|---------|----------------------|-------|
| | | min | max | |
| V _{CC} | Supply voltage | -0.5 | 7.0 | V |
| V _{IH} | Input voltage, high level | - | V _{CC} +0.5 | V |
| V _{IL} | Input voltage, low level | -0.5 | - | V |
| T _{stg} | Storage temperature | -60 | 125 | °C |

Exposure to absolute maximum rating conditions may affect reliability of IC and its functional operation. Upon removing the absolute maximum ratings conditions, functional operation is guaranteed in recommended operating conditions.

* Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied.

Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

Table 3 – DC electrical characteristics ($T_A = -40^\circ$ to $+85^\circ\text{C}$)

| Symbol | Parameter | Test conditions | Typical | | Units |
|------------|--|--|--------------|-------|---------------|
| | | | min | max | |
| V_{IL} | Input voltage, low level | V_{CC} =from 2.4 to 5.5V | - | 0.5 | V |
| V_{IH} | Input voltage, high level | V_{CC} =from 2.4 to 5.5V | 2.0 | | V |
| I_{OL} | Output current, low level (NMI, RST) | V_{CC} =from 2.4 to 5.5V $V_{OL}=0.4\text{V}$ | 10.0 | - | mA |
| I_{OH} | Output current, high level (WDS, NMI) | V_{CC} =from 4.5 to 5.5V $V_{OH}=2.4\text{V}$ | -100 | -1000 | μA |
| I_{OH1} | Output current, high level, (RST) | V_{CC} =from 5.0 to 5.5V $V_{OH}=2.4\text{V}$ | -10 | - | mA |
| V_{OH} | Output voltage, high level (RST) | V_{CC} =from 5.0 to 5.5V $I_{OH}=-500\text{mA}$ | $V_{CC}-0.3$ | - | V |
| I_{LIL1} | Input leakage current, low level (IN) | V_{CC} =from 1.2 to 5.5V $V_{IL}=0\text{V}$ | - | -1.0 | μA |
| I_{LIL2} | Input leakage current, low level (ST) | $V_{CC}=5.5\text{V}$ $V_{IL}=0\text{V}$ | -10 | -100 | μA |
| I_{LIL3} | Input leakage current, low level (PBRST) | $V_{CC}=5.5\text{V}$ $V_{IL}=0\text{V}$ | -50 | -450 | μA |
| I_{LIH} | Input leakage current, high level | V_{CC} =from 1.2 to 5.5V $V_{IH}=V_{CC}$ | - | 1.0 | μA |
| I_{CC} | Operating current | V_{CC} =from 1.2 to 5.5V $V_{IL}=0\text{V}$, $V_{IH}=V_{CC}$ | - | 60 | μA |
| V_{CCTP} | V_{CC} trip point | $V_{IL}=0\text{V}$, $V_{IH}=V_{CC}$ | 4.5 | 4.75 | V |
| V_{TP} | IN input trip point | $V_{CC}=5.0\text{V}$ $V_{IL}=0\text{V}$, $V_{IH}=V_{CC}$ | 1.2 | 1.3 | V |

Table 4 – AC electrical characteristics ($V_{CC}=5.0\text{ V}$, $T_A = -40^\circ\text{ to }+85^\circ\text{C}$)

| Symbol | Parameter | Typical | | Units |
|------------|---|---------|-----|---------------|
| | | min | max | |
| t_{TD} | Watchdog timeout | 1.0 | 2.2 | s |
| t_{PDLY} | $\overline{\text{PBRST}}$ stable low to $\overline{\text{RST}}$ and $\overline{\text{RST}}$ | - | 250 | ns |
| t_{RST} | Reset active time | 130 | 285 | ms |
| t_{RPD} | V_{CC} detect to $\overline{\text{RST}}$ and $\overline{\text{RST}}$ | - | 8.0 | μs |
| t_{RPU} | V_{CC} detect to $\overline{\text{RST}}$ and $\overline{\text{RST}}$ | 130 | 285 | ms |
| t_{IPD} | V_{IN} detect to NMI | - | 8.0 | μs |
| t_{PB} | $\overline{\text{PBRST}}=V_{IL}$ | 150 | - | ns |
| t_{ST} | $\overline{\text{ST}}$ Pulse Width | 10 | - | ns |

Timing diagrams

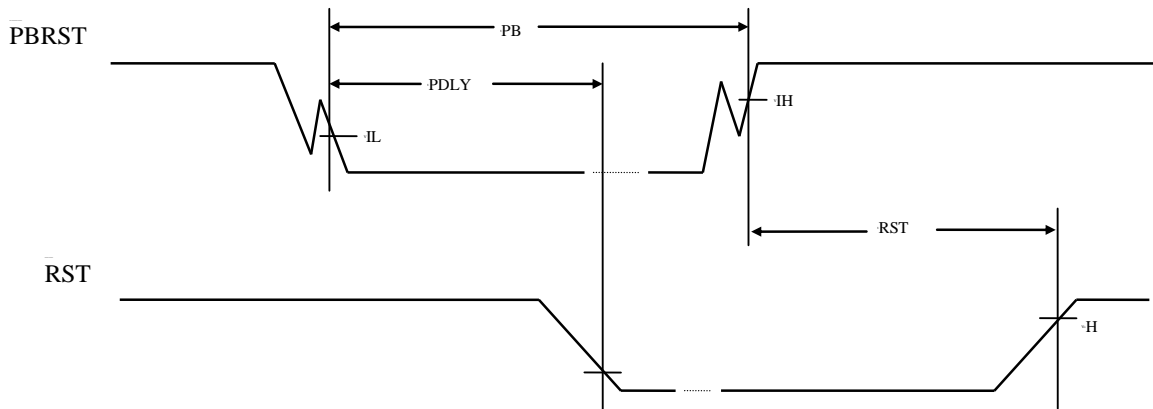


Fig. 3 – Timing diagram of forming reset signal from external PBRST control button

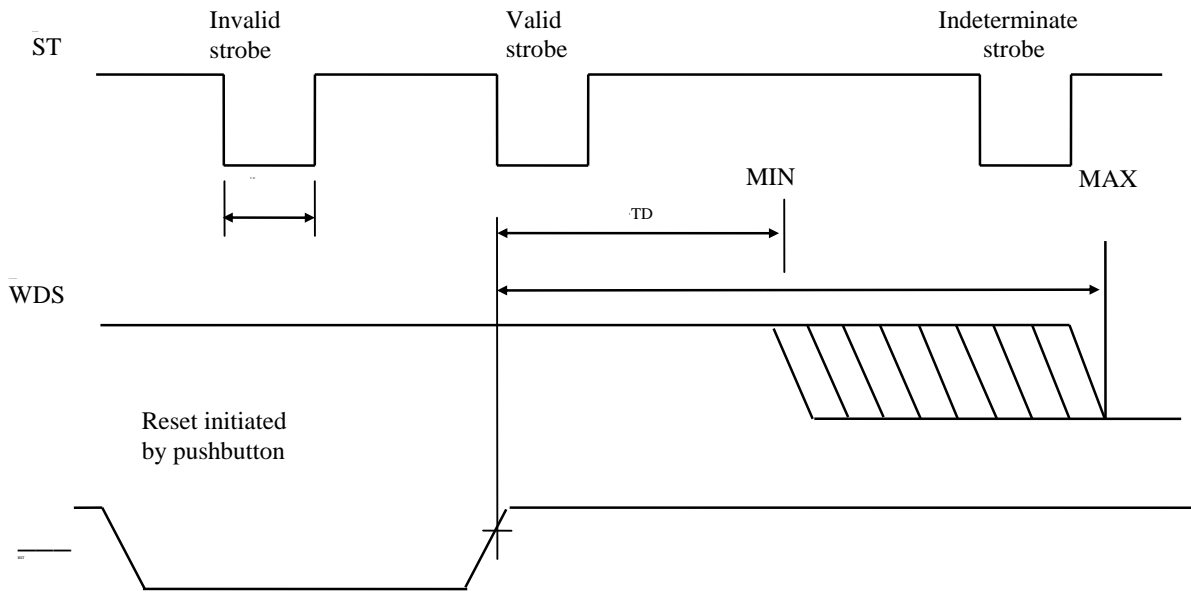
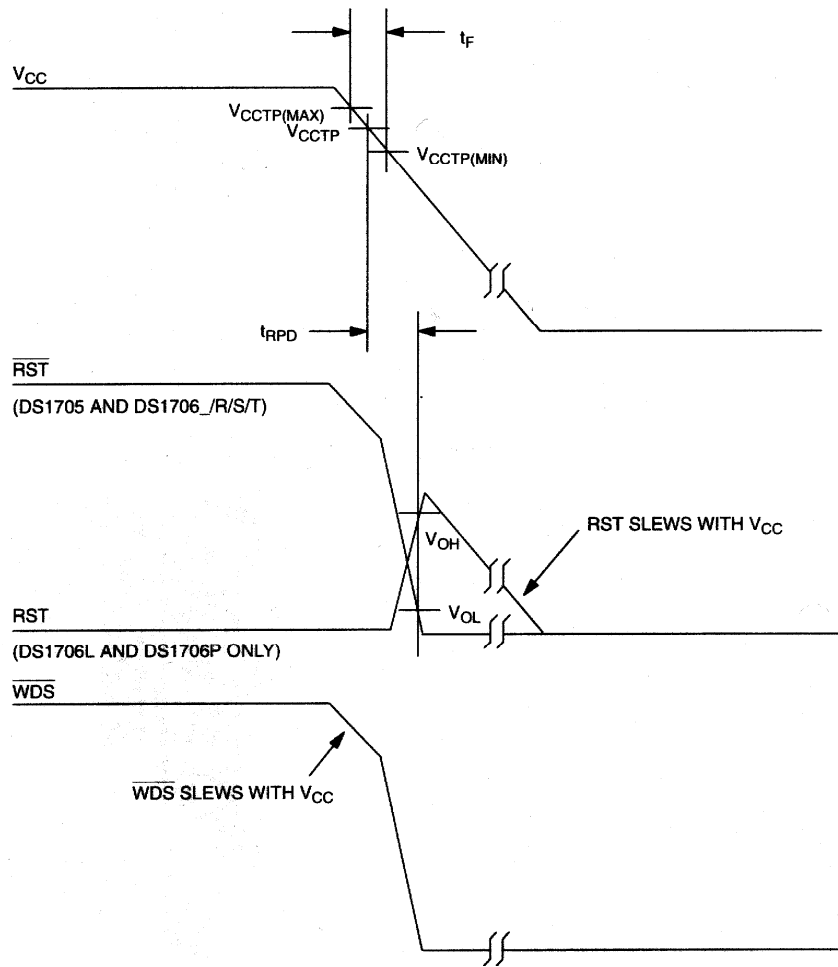
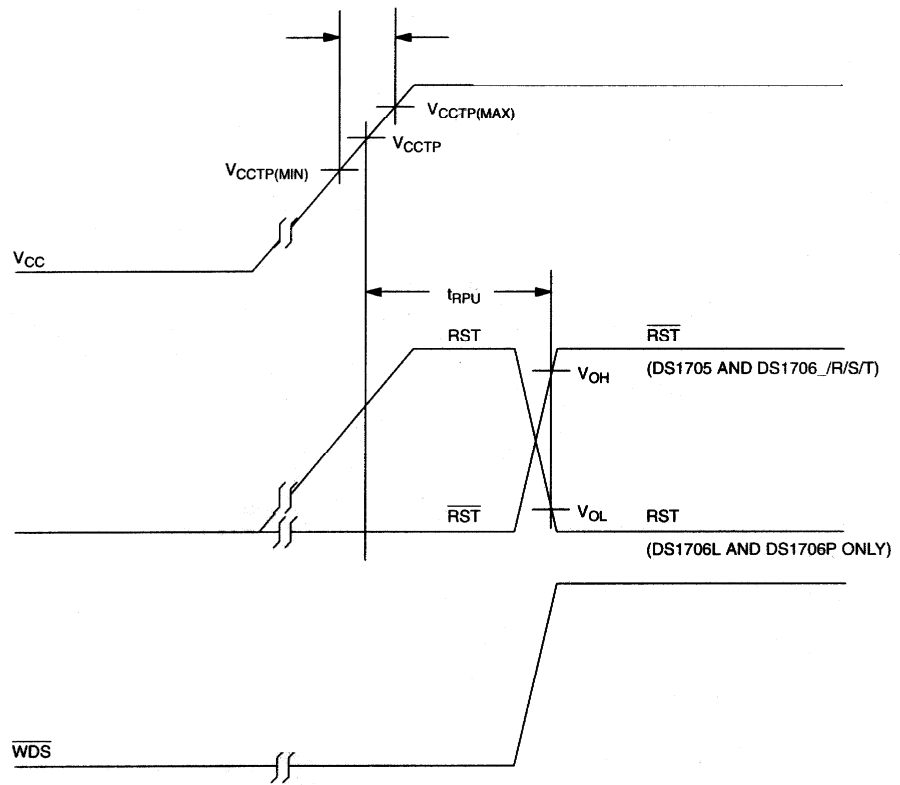


Fig. 4 – Timing diagram: strobe input

TIMING DIAGRAM: POWER-DOWN



TIMING DIAGRAM: POWER-UP



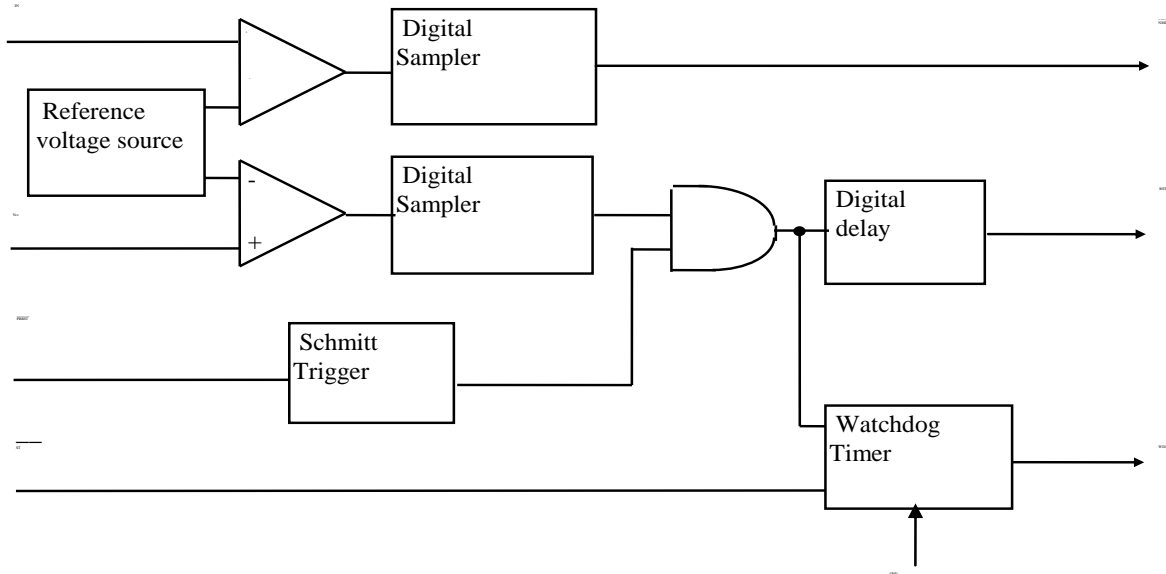
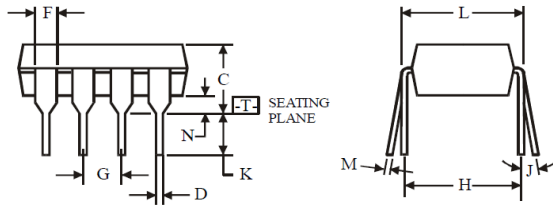
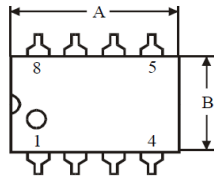
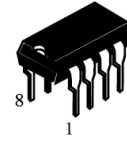


Fig. 8 – Block Diagram

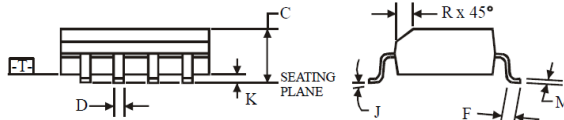
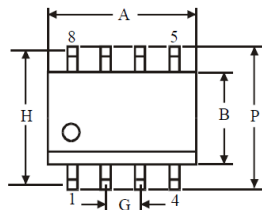
N SUFFIX DIP
(MS - 001BA)


$\oplus 0.25 (0.010) \text{ (M)} \text{ (T)}$

| Symbol | Dimension, mm | |
|--------|---------------|-------|
| | MIN | MAX |
| A | 8.51 | 10.16 |
| B | 6.10 | 7.11 |
| C | | 5.33 |
| D | 0.36 | 0.56 |
| F | 1.14 | 1.78 |
| G | 2.54 | |
| H | 7.62 | |
| J | 0° | 10° |
| K | 2.92 | 3.81 |
| L | 7.62 | 8.26 |
| M | 0.20 | 0.36 |
| N | 0.38 | |

NOTES:

- Dimensions "A", "B" do not include mold flash or protrusions.
Maximum mold flash or protrusions 0.25 mm (0.010) per side.

D SUFFIX SOP
(MS - 012AA)


$\oplus 0.25 (0.010) \text{ (M)} \text{ (T)} \text{ (C)} \text{ (M)}$

| Symbol | Dimension, mm | |
|--------|---------------|------|
| | MIN | MAX |
| A | 4.80 | 5.00 |
| B | 3.80 | 4.00 |
| C | 1.35 | 1.75 |
| D | 0.33 | 0.51 |
| F | 0.40 | 1.27 |
| G | 1.27 | |
| H | 5.72 | |
| J | 0° | 8° |
| K | 0.10 | 0.25 |
| M | 0.19 | 0.25 |
| P | 5.80 | 6.20 |
| R | 0.25 | 0.50 |

NOTES:

- Dimensions A and B do not include mold flash or protrusion.
- Maximum mold flash or protrusion 0.15 mm (0.006) per side for A; for B - 0.25 mm (0.010) per side.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Supervisory Circuits](#) category:

Click to view products by [HTCSEMI](#) manufacturer:

Other Similar products are found below :

[CAT1161LI-25-G](#) [CAT853STBI-T3](#) [CAT1026LI-30-G](#) [CAT1320LI-25-G](#) [TC54VN2402EMB713](#) [MCP1316T-44NE/OT](#) [MCP1316MT-45GE/OT](#) [MCP1316MT-23LI/OT](#) [DS1232L](#) [NCV302HSN45T1G](#) [MCP1316T-23LI/OT](#) [PT7M6130NLTA3EX](#) [S-1000N28-I4T1U](#)
[CAT1161LI-28-G](#) [MCP1321T-29AE/OT](#) [MCP1319MT-47QE/OT](#) [S-1000N23-I4T1U](#) [S-1000N19-I4T1U](#) [CAT824UTDI-GT3](#)
[PT7M6133NLTA3EX](#) [PT7M6127NLTA3EX](#) [BD48L29G-TL](#) [BD48E23G-TR](#) [BD48E49G-TR](#) [BD48E52G-TR](#) [MP6412GQGU-Z](#)
[BD52W01G-CTR](#) [BD52W05G-CTR](#) [BD70H12G-2CTR](#) [XC61GN2502HR-G](#) [MB3793-37APNF-G-JN-ER6E1](#) [CPC5712U](#) [LTC693CSW](#)
[TC1232EOE](#) [TC1270ALVRCTR](#) [TC1271MERCCTR](#) [TC32MEZB](#) [TC54VC4202EMB713](#) [TC54VN2102ECB713](#) [MB3793-27DPNF-G-JN-ERE1](#) [MCP100-475HI/TO](#) [MCP100-485DI/TO](#) [MCP101-460HI/TO](#) [MCP101-475HI/TO](#) [TCM809LVLB713](#) [TCM809SVLB713](#) [MCP102-315E/TO](#) [MCP111-475E/TO](#) [MCP120-475GITO](#) [MCP120-485DI/TO](#)