

78ST200 Series

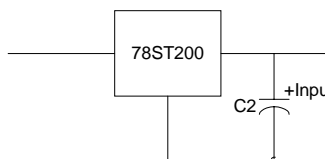
2 AMP POSITIVE STEP-DOWN INTEGRATED SWITCHING REGULATOR

- High Efficiency > 82%
- Wide Input Range
- Self-Contained Inductor
- Short-Circuit Protection
- Over-Temperature Protection
- Fast Transient Response

The 78ST200 is a series of wide input voltage, 3 terminal Integrated Switching Regulators (ISRs). Employing a ceramic substrate, these ISRs have a maximum output current of 2A. The output voltage is laser trimmed for high accuracy.

The 78ST200 series regulators have internal short-circuit and over-temperature protection and may be used in a wide variety of applications.

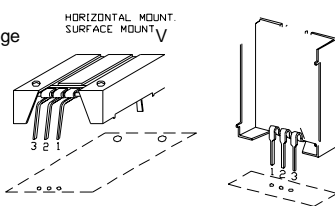
Standard Application



C1 = Optional 1 μ F ceramic
C2 = Required 100 μ F electrolytic

Pin-Out Information

| Pin No. | Function |
|---------|------------------|
| 1 | V _{in} |
| 2 | GND |
| 3 | V _{out} |



SUGGESTED BOARD LAYOUT COMPONENT SIDE VIEW

Ordering Information

78ST2 XX Y C

Output Voltage

33 = 3.3 Volts
35 = 3.45 Volts
05 = 5.0 Volts

Package Suffix

V = Vertical Mount
S = Surface Mount
H = Horizontal Mount

(For dimensions and PC board layout see Package Style 500.)

| | | I _o = 0.1 to 3.0A | V _o < 3.5V V _o = 5.0V | 7 8 | — — | 15 20 | V V |
|---|---------------------|--|--|--------|------------|----------|------------------------------|
| Output Voltage Tolerance | ΔV_o | Over V _{in} range, I _o = 2.0A T _a = 0°C to +60°C | | — | ±1.0 | ±2.0 | %V _o |
| Line Regulation | Reg _{line} | Over V _{in} range | | — | ±0.4 | ±0.8 | %V _o |
| Load Regulation | Reg _{load} | 0.1 ≤ I _o ≤ 2.0A | | — | ±0.2 | ±0.4 | %V _o |
| Ripple/Noise | V _n | V _{in} = V _{in} min, I _o = 2.0A | | — | 1 | — | %V _o |
| Transient Response (with 100 μ F output cap) | t _{tr} | 50% load change V _o over/undershoot | | — | 100 5.0 | — | μ Sec %V _o |
| Efficiency | η | V _{in} = 9V, I _o = 2.0A, V _o = 5V | | — | 82 | — | % |
| Switching Frequency | f _o | Over V _{in} and I _o ranges | | 0.95 | 1.0 | 1.05 | MHz |
| Absolute Maximum Operating Temperature Range | T _a | — | | -40 | — | +85 | °C |

PACKAGING INFORMATION

| Orderable Device | Status (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan (2) | Lead/Ball Finish | MSL Peak Temp (3) | Samples (Requires Login) |
|------------------|---------------|--------------|-----------------|------|-------------|-----------------|------------------|----------------------|-----------------------------|
| 78ST205HC | LIFEBUY | SIP MODULE | EFA | 3 | 25 | Pb-Free (RoHS) | Call TI | N / A for Pkg Type | |
| 78ST205SC | LIFEBUY | SIP MODULE | EFC | 3 | 25 | Pb-Free (RoHS) | Call TI | Level-1-215C-UNLIM | |
| 78ST205SCT | OBSOLETE | SIP MODULE | EFC | 3 | | TBD | Call TI | Call TI | |
| 78ST205VC | LIFEBUY | SIP MODULE | EFD | 3 | 25 | Pb-Free (RoHS) | Call TI | N / A for Pkg Type | |
| 78ST235HC | NRND | SIP MODULE | EFA | 3 | | TBD | Call TI | Call TI | |
| 78ST235SC | OBSOLETE | SIP MODULE | EFC | 3 | | TBD | Call TI | Call TI | |
| 78ST235VC | OBSOLETE | SIP MODULE | EFD | 3 | | TBD | Call TI | Call TI | |

⁽¹⁾ The marketing status values are defined as follows:

ACTIVE:

