



Winbond
DC Fan Pre-Driver
W83391TS
W83391TG

W83391TS/TG**Data Sheet Revision History**

| | PAGES | DATES | VERSION | VERSION ON WEB | MAIN CONTENTS |
|----|-------|---------|---------|----------------|---|
| 1. | N.A | Sep/04 | 0.5 | N.A. | All versions before 0.5 are for internal use and W83391DG/TG/QG are Pb-free package. |
| 2. | N.A | Jan/06 | 0.51 | N.A | Remove W83391DS/DG |
| 3. | N.A | Jan./06 | 0.52 | N.A | Remove W83391QS/QG. |
| 4 | N.A | Jan./06 | 0.53 | N.A | Update the datasheet with new templet. |
| | | | | | |
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LIFE SUPPORT APPLICATIONS

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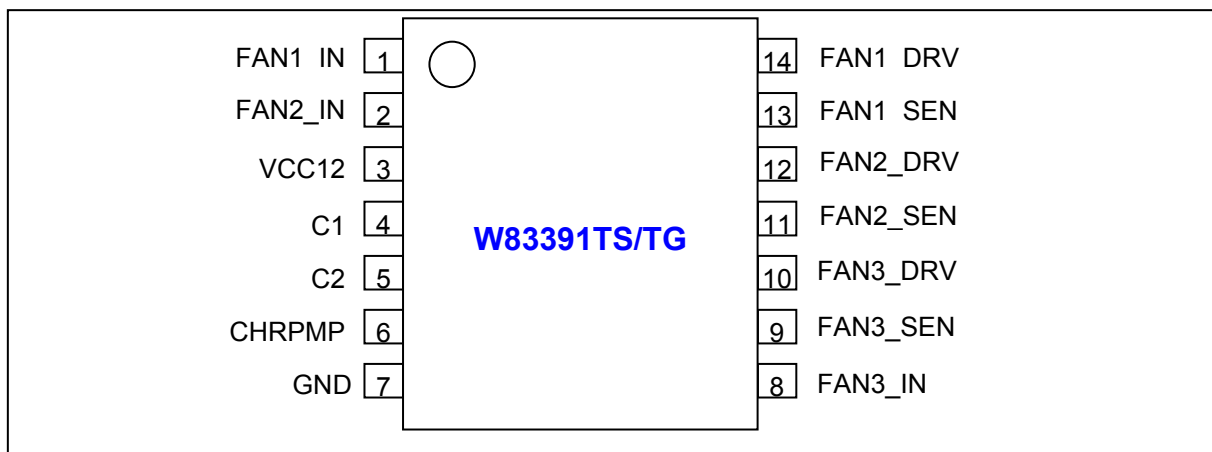
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1. FEATURES

- Provide up to 24V gate voltage for external N-channel MOSFET driving
- Pairing with Winbond all new series Super IO and Hardware Monitoring IC for DC Fan voltage regulation
- External resistors for output voltage scale adjustment
- W83391TS/TG provides 3 channels Fan control.

2. PIN CONFIGURATION AND DESCRIPTION

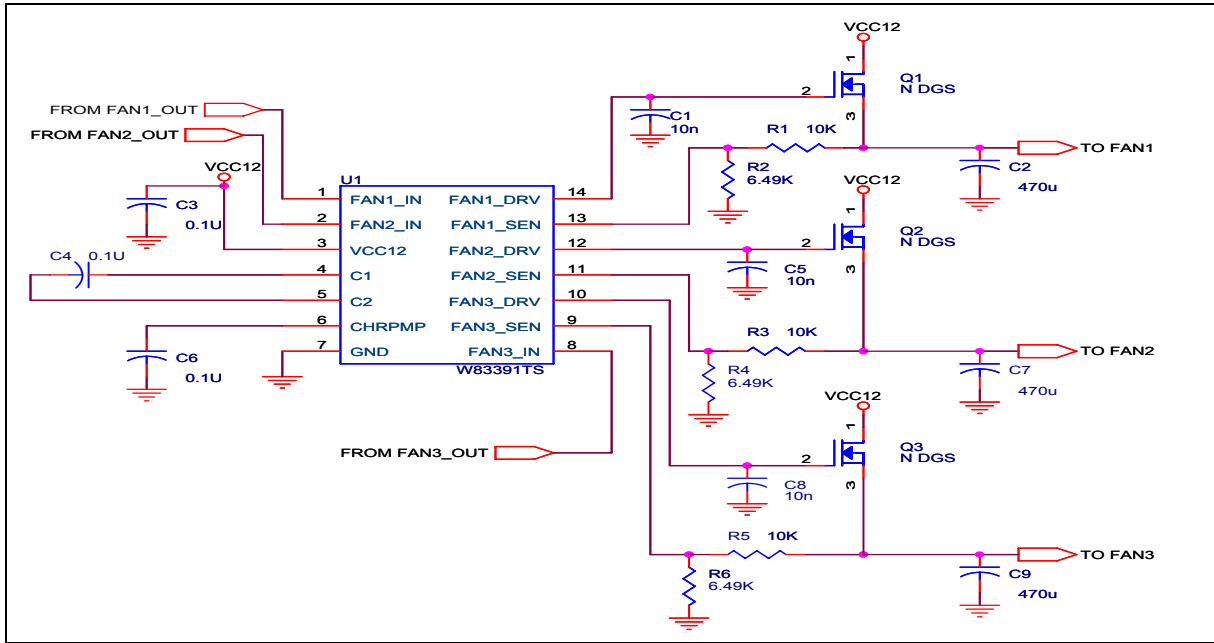


| PIN | SYMBOL | FUNCTION |
|-----|----------|---|
| 1 | FAN1_IN | DC FAN1 Voltage Input Ranging from 0V~8V. |
| 2 | FAN2_IN | DC FAN2 Voltage Input Ranging from 0V~8V. |
| 3 | VCC12 | 12Vcc input. |
| 4 | C1 | Charge Pump Pins. It insures output voltage achieve to 24V. |
| 5 | C2 | |
| 6 | CHRPMP | |
| 7 | GND | Power Ground. |
| 8 | FAN3_IN | DC FAN3 Voltage Input Ranging from 0V~8V. |
| 9 | FAN3_SEN | Voltage Sensing Pin for 3 rd Fan Voltage Regulation. |
| 10 | FAN3_DRV | Voltage Driving Pin for 3 rd Fan Voltage Regulation. |
| 11 | FAN2_SEN | Voltage Sensing Pin for 2 nd Fan Voltage Regulation. |
| 12 | FAN2_DRV | Voltage Driving Pin for 2 nd Fan Voltage Regulation. |
| 13 | FAN1_SEN | Voltage Sensing Pin for 1 st Fan Voltage Regulation. |
| 14 | FAN1_DRV | Voltage Driving Pin for 1 st Fan Voltage Regulation. |



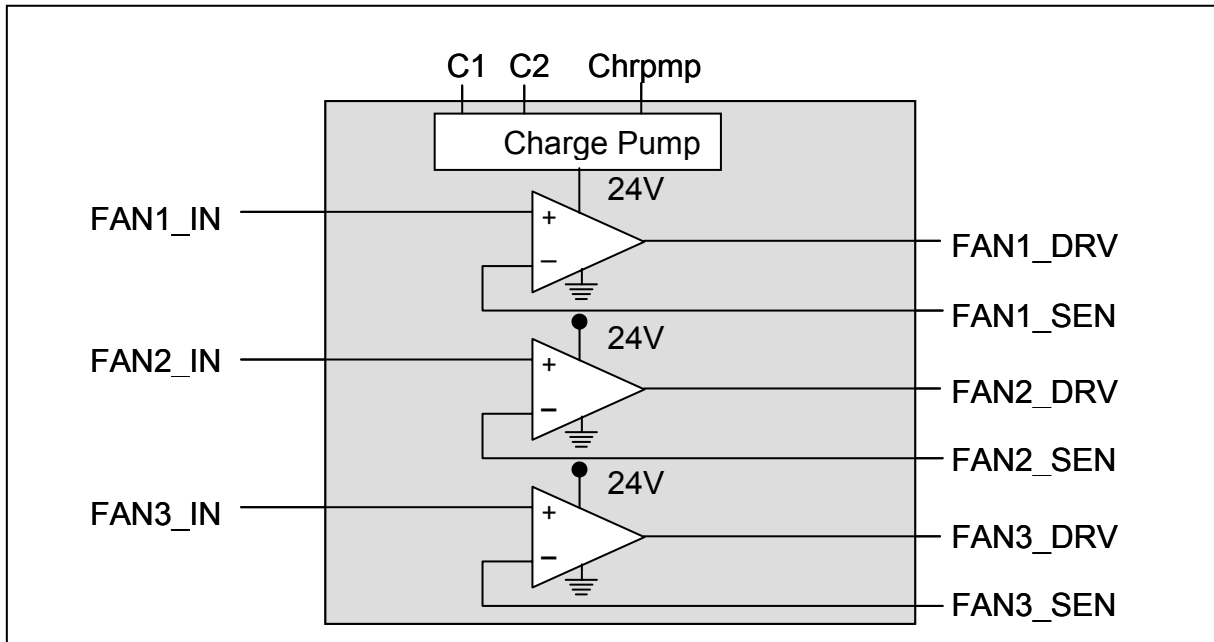
3. APPLICATION CIRCUIT

- W83391TS/TG



4. INTERNAL BLOCK DIAGRAM

- W83391TS/TG





5. ELECTRICAL SPECIFICATION

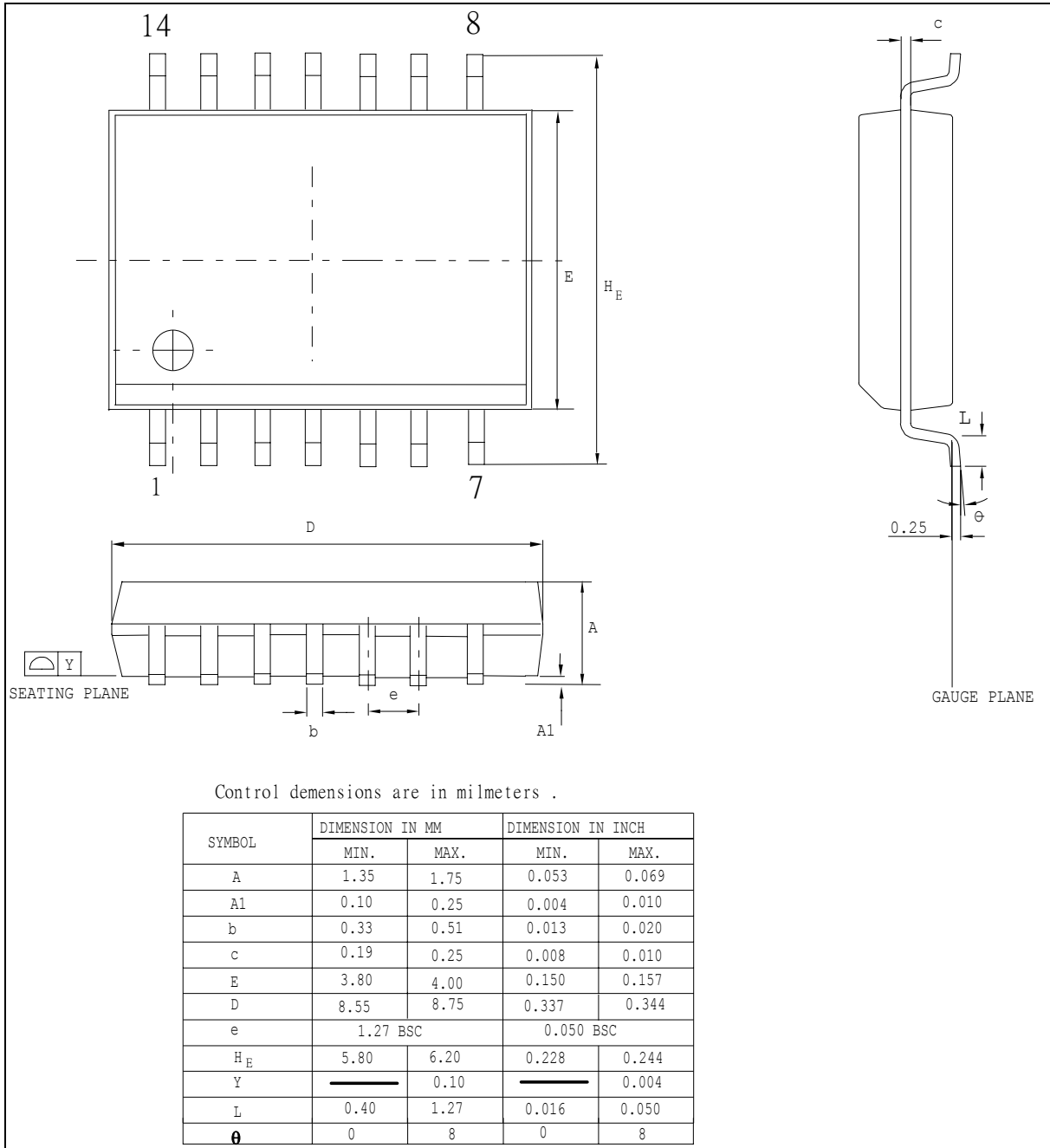
6. AC CHARACTERISTICS

| $V_{cc12}=12V \pm 5\%, T_A = 0^\circ C \text{ to } +70^\circ C$ | | | | | | |
|---|----------|------|------|-----|-------|-----------------|
| PARAMETER | SYMBOL | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
| FAN#_IN Input | | | | | | |
| Input Offset Voltage | V_{io} | 2 | 5 | 50 | mV | |
| Input Voltage Range | | 0 | | 8 | V | |
| FAN#_DRV Output | | | | | | |
| Output Drive Current | | | 45 | | uA | Cout=10nF |
| Output Voltage Range | | 1.5 | | 24 | V | |
| Charge Pump | | | | | | |
| Charge Pump Frequency | | | 180 | | KHz | |
| Charge Pump Voltage | | 22.8 | 23.2 | 24 | | |



7. PACKAGE DIMENSION

- W83391TS/TG; 14L SOP 150mil

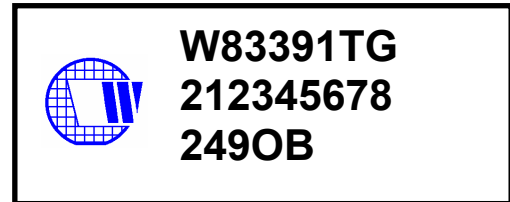
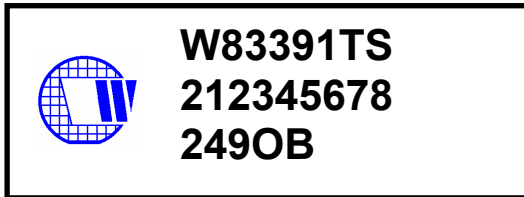




8. ORDERING INFORMATION

| PART NUMBER | PACKAGE TYPE | PRODUCTION FLOW |
|-------------|----------------------------|--------------------------|
| W83391TS | 14PIN SOP | Commercial, 0°C to +70°C |
| W83391TG | 14PIN SOP(Pb-free package) | Commercial, 0°C to +70°C |

9. HOW TO READ THE TOP MARKING



Left line: Winbond logo

1st line: W83391TS, W83391TG – the part number

2nd line: Chip lot no

3rd line: Tracking code 249 Q A

249: packages assembled in Year 02', week 49

Q: assembly house ID; Q means OSE, G means GR, etc.

B: the IC version



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