

Silicon Monolithic Bipolar Digital Integrated Circuit

TD62783AP/AF

TD62784AP/AF

8-channel High-Voltage Source Driver

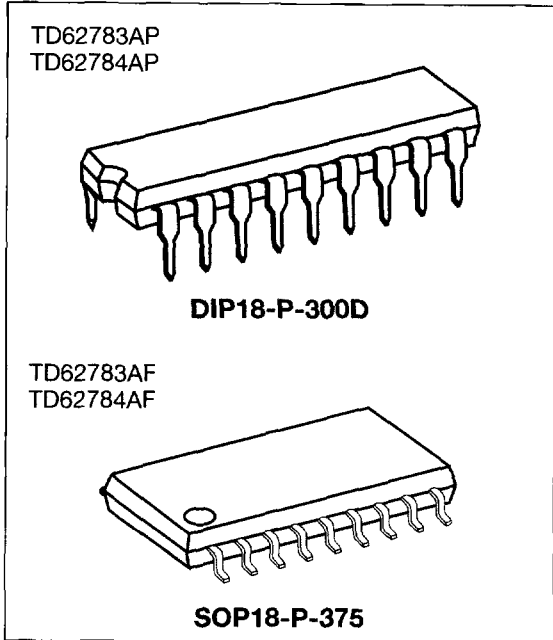
The TD62783AP/AF Series drivers are composed of eight source current Transistor Arrays.

These drivers are specifically designed for fluorescent display applications.

Applications include relay, hammer and lamp drivers.

Features

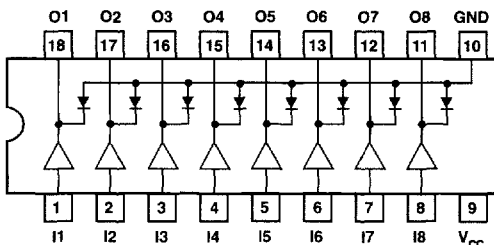
- High output voltage
Type-AP, AF: $V_{CC} = 50V$ (Min.)
- Output current (single output) $I_{OUT} = -500mA$ (Min.)
- Output clamp diodes
- Single supply voltage
- Input compatible with various types of logic
- Package Type-AP: DIP-18pin
- Package Type-AF: SOP-18pin



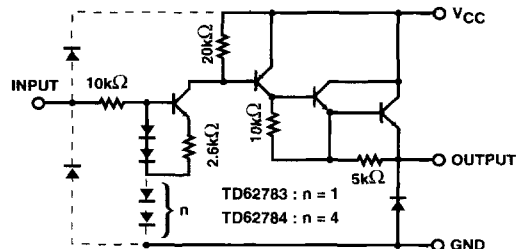
Weight: DIP18-P-300D: 1.47g (Typ.)
SOP18-P-375: 0.50g (Typ.)

| TYPE | DESIGNATION |
|--------------|------------------|
| TD62783AP/AF | TTL, 5V CMOS |
| TD62784AP/AF | 6~15V PMOS, CMOS |

Pin Connection (Top View)



Schematics (Each Driver)



Note: The input and output parasitic diodes cannot be used as clamp diodes.

Technical Data

Maximum Ratings (Ta=25°C)

| Characteristic | | Symbol | Rating | Unit |
|-----------------------------|--------|-------------------|---------|-------|
| Supply Voltage | AP, AF | V_{CC} | 50 | V |
| Output Current | | I_{OUT} | -500 | mA/ch |
| Input Voltage | | V_{IN} (Note 1) | 15 | V |
| | | V_{IN} (Note 2) | 30 | |
| Clamp Diode Reverse Voltage | AP, AF | V_R | 50 | V |
| Clamp Diode Forward Current | | I_F | 500 | mA |
| Power Dissipation | AP | P_D (Note 3) | 1.47 | W |
| | AF | | 0.96 | |
| Operating Temperature | | T_{opr} | -40~85 | °C |
| Storage Temperature | | T_{stg} | -55~150 | °C |

Note 1: Only TD62783AP / AF

Note 2: Only TD62784AP / AF

Note 3: Above 25°C in the proportion of 11.7W / °C (AP Type), 7.7W / °C (F, AF Type).

Recommended Operating Conditions (Ta=-40~85°C)

| Characteristic | | Symbol | Condition | Min. | Typ. | Max. | Unit | |
|-----------------------------|--------------|--------------|---------------------------------|------------------------|------|------|------|-------|
| Supply Voltage | AP, AF | V_{CC} | — | — | — | 50 | V | |
| Output Current | AF | I_{OUT} | Ta=85°C Tj=120°C Tpw=25ms | Duty=10% 8 Circuits | — | — | -260 | mA/ch |
| | | | | Duty=50% 8 Circuits | — | — | -59 | |
| | | | | Duty=10% 8 Circuits | — | — | -180 | |
| | | | | Duty=50% 8 Circuits | — | — | -38 | |
| Input Voltage | TD62783AP/AF | V_{IN} | — | — | — | 12 | V | |
| | TD62784AP/AF | | — | — | — | 24 | | |
| Input Voltage | (Output On) | TD62783AP/AF | V_{IN} (ON) | — | 2.0 | 5.0 | 15 | V |
| | | | | TD62784AP/AF | — | 4.5 | 12.0 | |
| | (Output Off) | TD62783AP/AF | V_{IN} (OFF) | — | 0 | — | 0.8 | |
| | | | | TD62784AP/AF | — | 0 | — | |
| Clamp Diode Reverse Voltage | AP | V_R | — | — | — | 50 | V | |
| | AF | | — | — | — | 35 | | |
| Clamp Diode Forward Current | | I_F | — | — | — | 400 | mA | |
| Power Dissipation | AP | P_D | — | — | — | 0.52 | W | |
| | AF | | — | — | — | 0.35 | | |

Technical Data

Electrical Characteristics (Ta=25°C)

| Characteristic | | Symbol | Test Circuit | Test Condition | Min. | Typ. | Max. | Unit |
|-----------------------------|--------------|-----------------|--------------|---|------|------|------|---------|
| Output Leakage Current | | I_{CEX} | 1 | $V_{CC}=V_{CC\ MAX}, V_{IN}=0.4V, T_a=25^\circ C$ | — | — | 100 | μA |
| Output Saturation Voltage | | $V_{CE\ (sat)}$ | 2 | $V_{IN}=V_{IN\ (ON)}, I_{OUT}=-350mA$ | — | — | 2.0 | V |
| | | | | $V_{IN}=V_{IN\ (ON)}, I_{OUT}=-225mA$ | — | — | 1.9 | |
| | | | | $V_{IN}=V_{IN\ (ON)}, I_{OUT}=-100mA$ | — | — | 1.8 | |
| Input Current | TD62783AP/AF | $I_{IN\ (ON)}$ | 3 | $V_{IN}=2.4V$ | — | 36 | 52 | μA |
| | TD62784AP/AF | | | $V_{IN}=3.85V$ | — | 180 | 260 | |
| | | | | $V_{IN}=5V$ | — | 92 | 130 | |
| | | | | $V_{IN}=12V$ | — | 790 | 1130 | |
| Input Voltage | TD62783AP/AF | $V_{IN\ (ON)}$ | 4 | $V_{CE}=2.0V$ | — | — | 2.0 | V |
| | TD62784AP/AF | | | $I_{OUT}=-350mA$ | — | — | 4.5 | |
| | TD62783AP/AF | $V_{IN\ (OFF)}$ | | $I_{OUT}=-500\mu A$ | 0.8 | — | — | |
| | TD62784AP/AF | | | $I_{OUT}=-500\mu A$ | 2.0 | — | — | |
| Supply Current | | $I_{CC\ (ON)}$ | 3 | $V_{IN}=V_{IN\ (ON)}, V_{CC}=-50V$ | — | — | 2.5 | mA/ch |
| Clamp Diode Reverse Current | AP, AF | I_R | 5 | $V_R=50V$ | — | — | 50 | μA |
| Clamp Diode Forward Voltage | | V_F | 6 | $I_F=350mA$ | — | — | 2.0 | V |
| Turn-On Delay | | t_{ON} | 7 | $V_{CC}=V_{CC\ MAX}, R_L = 125\Omega$ $C_L=15pF$ | — | 0.15 | — | μs |
| Turn-Off Delay | | t_{OFF} | | | — | 1.8 | — | |