

TD62786AP/F/AF TD62787AP/F/AF

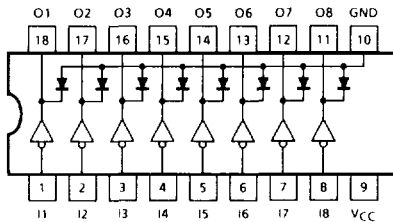
8CH HIGH-VOLTAGE SOURCE DRIVER

The TD62786AP/F/AF series are eight channel huxy non-inverting source current transistor array. All units feature integral clamp diodes for switching inductive loads. Applications include relay, hammer and lamp drivers.

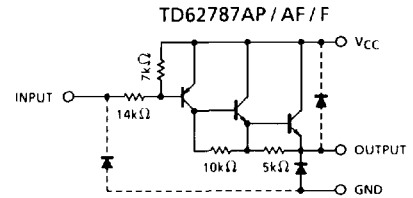
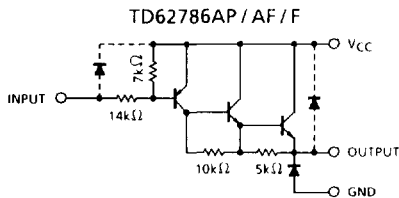
FEATURES

- High output voltage type-AP, AF : $V_{CE(SUS)} = 50V$ (Min.)
 type-F : $V_{CE(SUS)} = 35V$ (Min.)
- Output current (single output) : $I_{OUT} = -500mA/ch$ (Max.)
- Output clamp diodes
- Single supply voltage
- Input compatible with TTL, 5V CMOS
- Low level active input
- Package type-AP : DIP-18 pin
- Package type-F, AF : SOP-18 pin

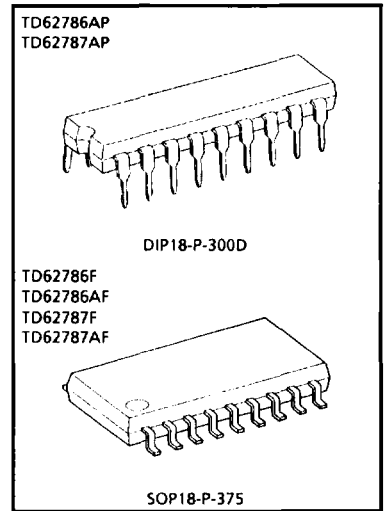
PIN CONNECTION (TOP VIEW)



SCHEMATICS (EACH DRIVER)



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



Weight DIP18-P-300D : 1.47g (Typ.)
 SOP18-P-375 : 0.41g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Supply Voltage	AP / AF	V _{CC} - V _{GND}	50	V
	F		35	
Output Sustaining Voltage	AP / AF	V _{OUT}	- 50	V
	F		- 35	
Output Current		I _{OUT}	- 500	mA / ch
Input Voltage		V _{IN} (Note 1)	- 30~0.5	V
Input Voltage		V _{IN} (Note 2)	V _{GND} ~7	V
Clamp Diode Forward Current	AP / AF	V _R	50	V
	F		35	
Clamp Diode Forward Current		I _F	500	mA
Power Dissipation	AP	P _D (Note 3)	1.47	W
	F / AF		0.96	
Operating Temperature		T _{opr}	- 40~85	°C
Storage Temperature		T _{stg}	- 55~150	°C

(Note 1) Only TD62786AP / F / AF

(Note 2) Only TD62787AP / F / AF

(Note 3) Delated above 25°C in the proportion of 11.7mW/°C (AP Type), 7.7mW/°C (F, AF Type).

RECOMMENDED OPERATING CONDITIONS (Ta = - 40~85°C, V_{CC} = 0V)

CHARACTERISTIC		SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	AP / AF	V _{CC} - V _{GND}	—	—	—	50	V
	F		—	—	—	35	
Output Voltage	AP / AF	V _{OUT}	—	—	—	- 50	V
	F		—	—	—	- 35	
Output Current		I _{OUT}	—	—	—	- 350	mA / ch
Input Voltage	TD62786	V _{IN}	—	- 30	—	0	V
	TD62787		—	V _{GND}	—	7	
Clamp Diode Reverse Voltage	AP / AF	V _R	—	—	—	50	V
	F		—	—	—	35	
Clamp Diode Forward Current		I _F	—	—	—	350	mA
Power Dissipation	AP	P _D	—	—	—	0.52	W
	AF / F		—	—	—	0.35	

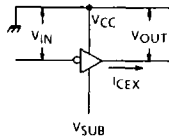
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$, $V_{CC} = 0\text{V}$)

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current		I_{CEX}	1	$V_{OUT} = V_{GND} = -50\text{V}$ $T_a = 85^\circ\text{C}$	—	—	-100	μA
Output Saturation Voltage		$V_{CE}(\text{sat})$	2	$V_{IN} = V_{IL} \text{ MAX.}$ $I_{OUT} = -100\text{mA}$	—	—	-1.8	V
				$V_{IN} = V_{IL} \text{ MAX.}$ $I_{OUT} = -350\text{mA}$	—	—	-2.0	
DC Current transfer Ratio		h_{FE}	2	$V_{CC} = 0\text{V}$, $V_{CE} = 3\text{V}$ $I_{OUT} = -350\text{mA}$	1000	—	—	—
Input Voltage	"H" Level	TD62786	V_{IN}	—	-1.2	—	0	V
		TD62787			-1.6	—	5.5	
	"L" Level	TD62786			-30	—	-2.8	
		TD62787			V_{GND}	—	-3.7	
Input Current		I_{IL}	—	$V_{CC} = 5.5\text{V}$, $V_{IN} = 0.4\text{V}$	—	—	-0.4	mA
Clamp Diode Reverse Current		I_R	—	$V_R = V_R \text{ MAX.}$, $T_a = 85^\circ\text{C}$	—	—	100	μA
Clamp Diode Forward Voltage		V_F	—	—	—	—	2.0	V
Turn-On Delay		t_{ON}	5	$V_{OUT} = -50\text{V}$, $R_L = 163\Omega$ $C_L = 15\text{pF}$ (Note)	—	0.2	—	μs
Turn Off Delay		t_{OFF}			—	1.0	—	

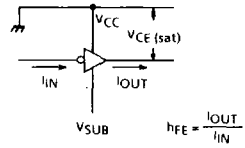
(Note) $V_{OUT} = -35\text{V}$, $R_L = 116\Omega$ for Type-F

TEST CIRCUIT

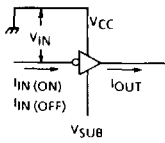
1. I_{CEX}



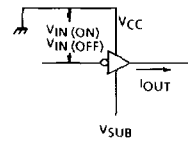
2. $V_{CE(sat)}$, h_{FE}



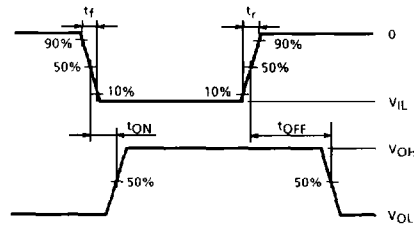
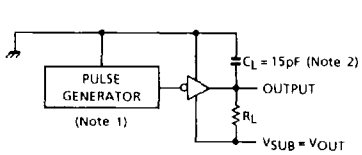
3. $I_{IN(ON)}$, $I_{IN(OFF)}$



4. $V_{IN(ON)}$, $V_{IN(OFF)}$



5. t_{ON} , t_{OFF}



- (Note 1) Pulse Width $50\mu s$, Duty Cycle 10%
 Output Impedance 50Ω , $t_r \leq 10ns$, $t_f \leq 5ns$
 (Note 2) C_L includes probe and jig capacitance.

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