

8CH HIGH-VOLTAGE SOURCE DRIVER

The KID65783BF is comprised of eight source current transistor array. This driver is specifically designed for fluorescent display applications. Applications include relay, lamp drivers.

FEATURES

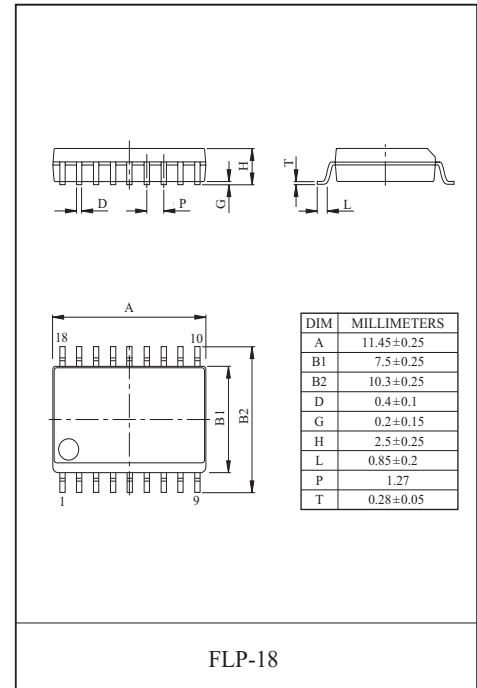
- High Output Voltage : $V_{CC}=50V(\text{Min.})$.
- Output Current (Single Output) $I_{OUT} : -500mA(\text{Min.})$.
- Output Clamp Diodes.
- Single Supply Voltage.
- Input Compatible With Various Types of Logic.
- Suffix U : Qualified to AEC-Q100
ex) KID65783BF-EL/PU

TYPE	DESIGNATION
KID65783BF	TTL, 5V CMOS

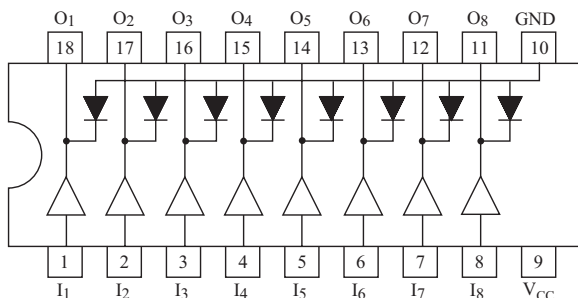
MAXIMUM RATINGS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	50	V
Output Current	I_{OUT}	-500	mA/ch
Input Voltage	V_{IN}	15	V
Clamp Diode Reverse Voltage	V_R	50	V
Clamp Diode Forward Current	I_F	500	mA
Power Dissipation	$P_D(\text{Note})$	0.96	W
Operating Temperature	T_{opr}	-40 85	
Storage Temperature	T_{stg}	-55 150	

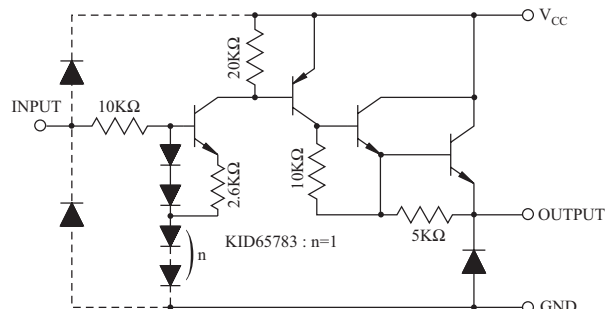
Note) Delated above 25 °C in the proportion of 7.7W/ °C.



PIN CONNECION (TOP VIEW)



SCHEMATICS (EACH DRIVER)



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

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RECOMMENDED OPERATING CONDITIONS (Ta=-40 85)

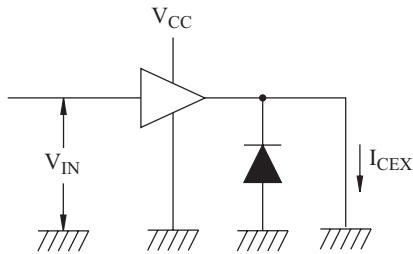
CHARACTERISTIC		SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Supply Voltage		V _{CC}	-		-	-	50	V
Output Current		I _{OUT}	Ta=85 Tj=120 TpW=25mS	Duty=10% 8 Circuits	-	-	-180	mA/ch
				Duty=50% 8 Circuits	-	-	-38	
Input Voltage		V _{IN}	-		-	-	12	V
Input Voltage	Output ON	V _{IN(ON)}	-		2.0	5.0	15	V
	Output OFF	V _{IN(OFF)}	-		0	-	0.8	
Clamp Diode Reverse Voltage		V _R	-		-	-	35	V
Clamp Diode Forward Current		I _F	-		-	-	400	mA
Power Dissipation		P _D	-		-	-	0.35	W

ELECTRICAL CHARACTERISTICS (Ta=25)

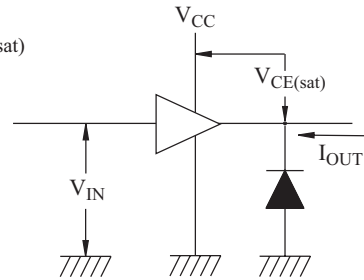
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Curret	I _{CEX}	1	V _{CC} =V _{CC MAX.} V _{IN} =0.4V Ta=25	-	-	100	μA
Output Saturation Voltage	V _{CE(sat)}	2	V _{IN} =V _{IN(ON)} , I _{OUT} =-350mA	-	-	2.0	V
			V _{IN} =V _{IN(ON)} , I _{OUT} =-225mA	-	-	1.9	
			V _{IN} =V _{IN(ON)} , I _{OUT} =-100mA	-	-	1.8	
Input Current	I _{IN(ON)}	3	V _{IN} =2.4V	-	36	52	μA
			V _{IN} =3.85V	-	180	260	
Input Voltage	V _{IN(ON)}	4	V _{CE} =2.0V, I _{OUT} =-350mA	-	-	2.0	V
	V _{IN(OFF)}		I _{OUT} =-500 μA	0.8	-	-	
Supply Current	I _{CC(ON)}	3	V _{IN} =V _{IN(ON)} , V _{CC} =50V	-	-	2.5	mA/ch
Clamp Diode Reverse Current	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 Ω C _L =15pF	-	0.15	-	μs
Turn-Off Delay	t _{OFF}			-	1.8	-	

TEST CIRCUIT

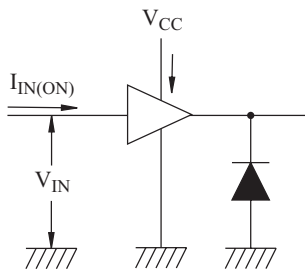
1. I_{CEX}



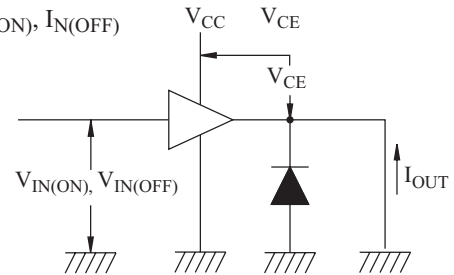
2. $V_{CE(sat)}$



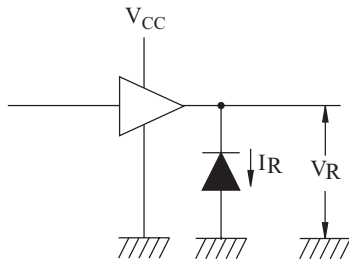
3. $I_{IN(ON)}$, I_{CC}



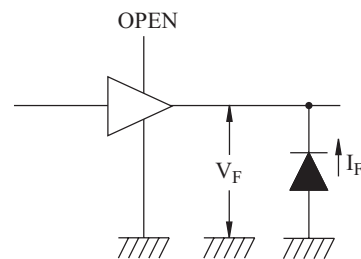
4. $V_{IN(ON)}$, $I_{N(OFF)}$



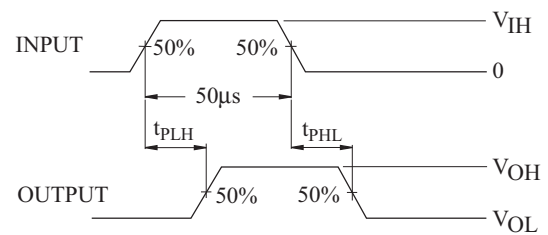
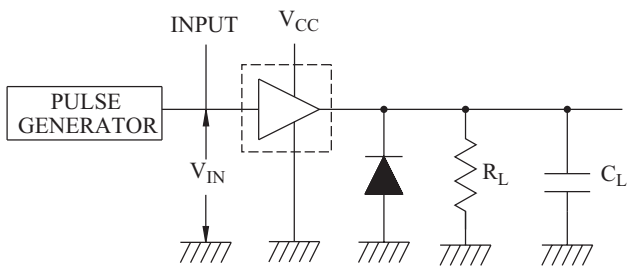
5. I_R



6. V_F



7. t_{ON} , t_{OFF}

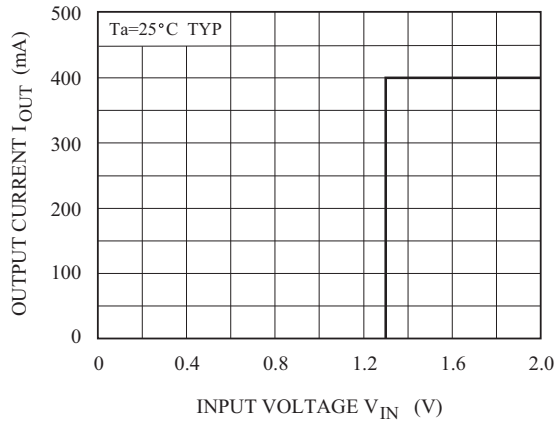


(Note 1) Pulse width 50μs, duty cycle 10%
Output impedance 50Ω, $t \leq 5ns$, $t \leq 10ns$

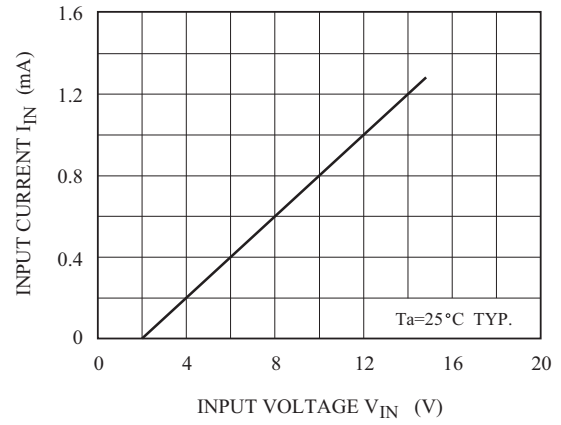
(Note 2) C_L includes probe and jig capacitance

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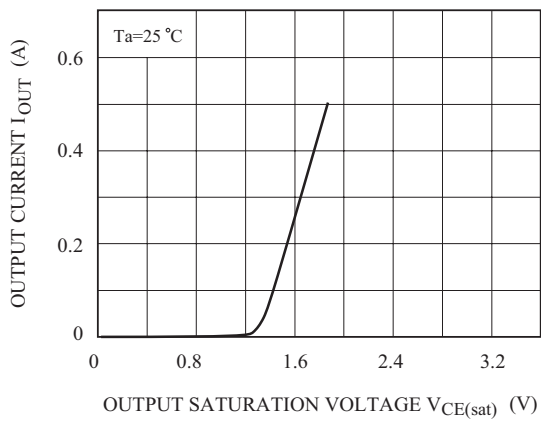
$I_{OUT} - V_{IN}$



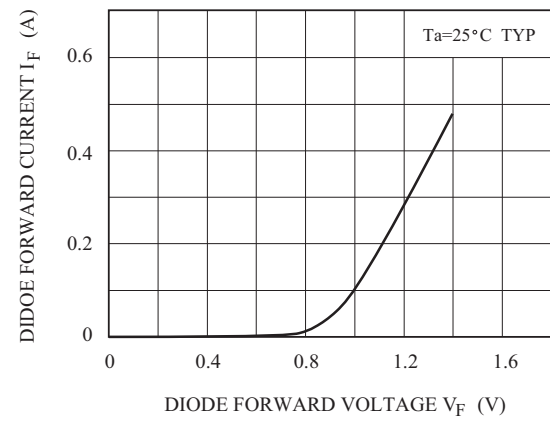
$I_{IN} - V_{IN}$



$I_{OUT} - V_{CE(sat)}$



$I_F - V_F$



$P_D - T_a$

