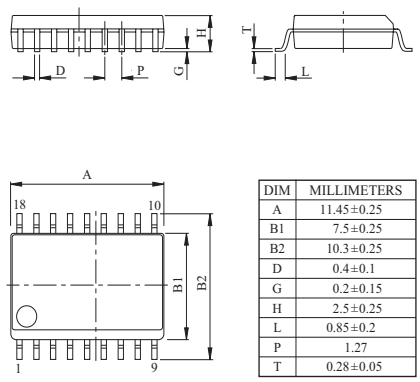
8 HIGH-VOLTAGE HIG-CURRENT DARLINGTON TRANSISTOR ARRAYS

The KID65083BF is high-voltage, high-current darlington drivers comprised of eight NPN darlington pairs.
All units feature integral clamp didoes for switching inductive loads.
Applications include relay, hammer, lamp and display(LED) drivers.



DIM	MILLIMETERS
A	11.45±0.25
B1	7.5±0.25
B2	10.3±0.25
D	0.4±0.1
G	0.2±0.15
H	2.5±0.25
L	0.85±0.2
P	1.27
T	0.28±0.05

FLP-18

FEATURES

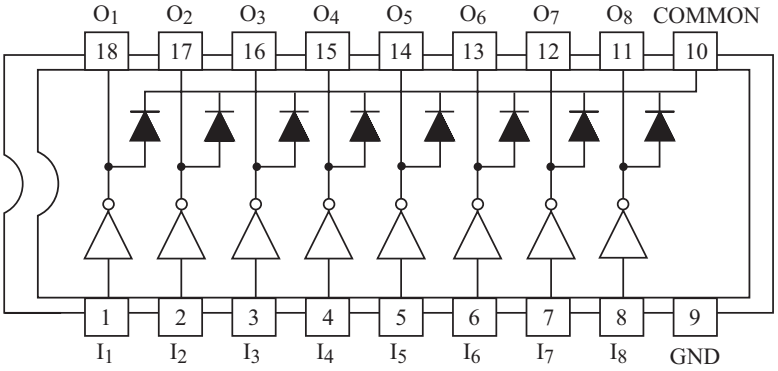
- Output Current (Single Output) : 500mA Max.
- High Sustaining Voltage Outputs : 50V Min.
- Output Clamp Diodes
- Inputs Compatible with Various Types of Logic
- Suffix **U** : Qualified to AEC-Q100
  ex) KID65083BF-EL/P**U**

TYPE	INPUT BASE RESISTOR	DESIGNATION
KID65083BF	2.7kΩ	TTL, 5V C-MOS

MAXIMUM RATINGS (Ta=25℃)

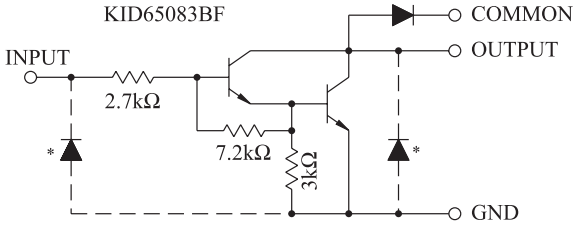
CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Sustaining Voltage		$V_{CE(SUS)}$	-0.5~50	V
Output Current		I_{OUT}	500	mA/ch
Input Voltage		V_{IN}	-0.5~+30	V
Input Current		I_{IN}	25	mA
Clamp Diode	Reverse Voltage	V_R	50	V
	Forward Current	I_F	500	mA
Power Dissipation		P_D	0.96	W
Operating Temperature		T_{opr}	-40 85	℃
Storage Temperature		T_{stg}	-55 150	℃

PIN CONNECION (TOP VIEW)



BF-TYPE (FLP-18 PACKAGE)

SCHEMATICS (EACH DRIVER)



(* : Parasitic Diodes
NOTE. The input and output parasitic diodes cannot be used as clamp diodes.)

RECOMMENDED OPERATING CONDITIONS (Ta=-40 85℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Sustaining Voltage	$V_{CE(SUS)}$	-	0	-	50	V
Output Current	I_{OUT}	T_{PW}=25ms, Duty=8%, 8 Circuits	0	-	350	mA/ch
		T_{PW}=25ms, Duty=25%, 8 Circuits	0	-	140	
Input Voltage	V_{IN}	-	0	-	30	V
Input Voltage (Output ON)	$V_{IN\ (ON)}$	-	3.5	-	30	V
Clamp Diode Reverse Voltage	V_R	-	-	-	50	V
Clamp Diode Forward Current	I_F	-	-	-	400	mA
Power Dissipation	P_D	-	-	-	0.35	W

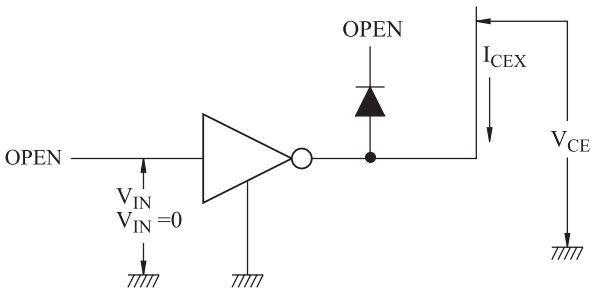
ELECTRICAL CHARACTERISTICS (Ta=25℃, unless otherwise noted)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	I_{CEX}	1	V_{CE}=50V, Ta=25℃	-	-	50	μA
			V_{CE}=50V, Ta=85℃	-	-	100	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	2	I_{OUT}=350mA, I_{IN}=500 μA	-	1.3	1.6	V
			I_{OUT}=200mA, I_{IN}=350 μA	-	1.1	1.3	
			I_{OUT}=100mA, I_{IN}=250 μA	-	0.9	1.1	
Input Current	$I_{IN(ON)}$	3	V_{IN}=3.85V	-	0.93	1.35	mA
	$I_{IN(OFF)}$	4	I_{OUT}=500 μA, Ta=85℃	50	65	-	μA
Input Voltage (Output On)	$V_{IN(ON)}$	5	V_{CE}=2V, I_{OUT}=200mA	-	-	2.4	V
			V_{CE}=2V, I_{OUT}=250mA	-	-	2.7	
			V_{CE}=2V, I_{OUT}=300mA	-	-	3.0	
DC Current Transfer Ratio	h_{FE}	2	V_{CE}=2V, I_{OUT}=350mA	1000	-	-	
Clamp Diode Reverse Current	I_R	6	Ta=25℃ (*1)	-	-	50	μA
			Ta=85℃ (*1)	-	-	100	
Clamp Diode Forward Voltage	V_F	7	I_F=350mA	-	-	2.0	V
Input Capacitance	C_{IN}	-	-	-	15	-	pF
Turn-On Delay	t_{ON}	8	R_L=120Ω, V_{OUT}=50V	-	0.1	-	μs
Turn-Off Delay	t_{OFF}			-	0.2	-	

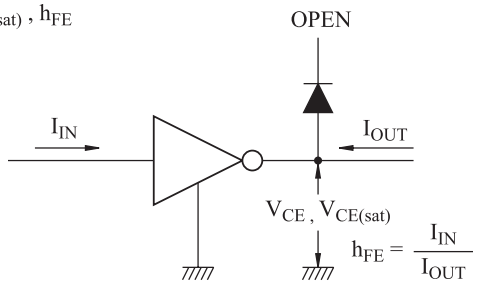
*1 V_R=V_R Max.

TEST CIRCUIT

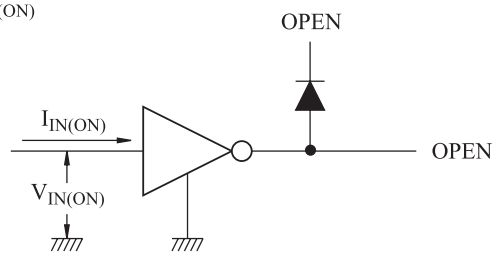
1. I_{CEX}



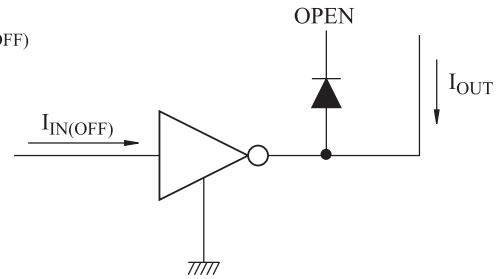
2. $V_{CE(sat)}$, h_{FE}



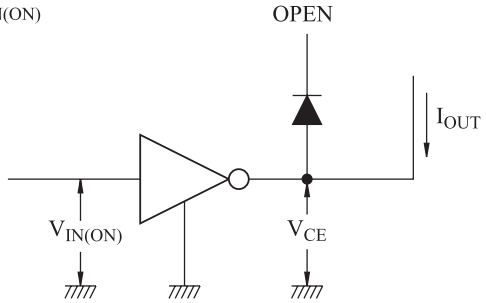
3. $I_{IN(ON)}$



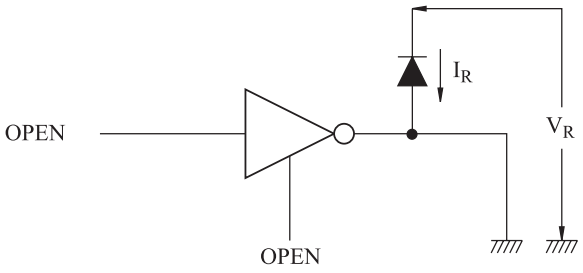
4. $I_{IN(OFF)}$



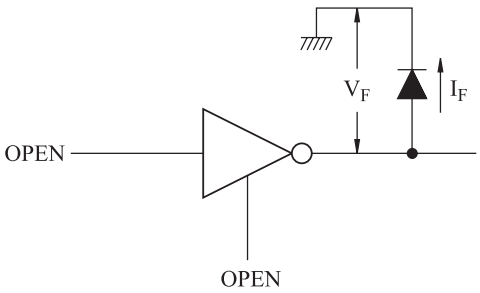
5. $V_{IN(ON)}$



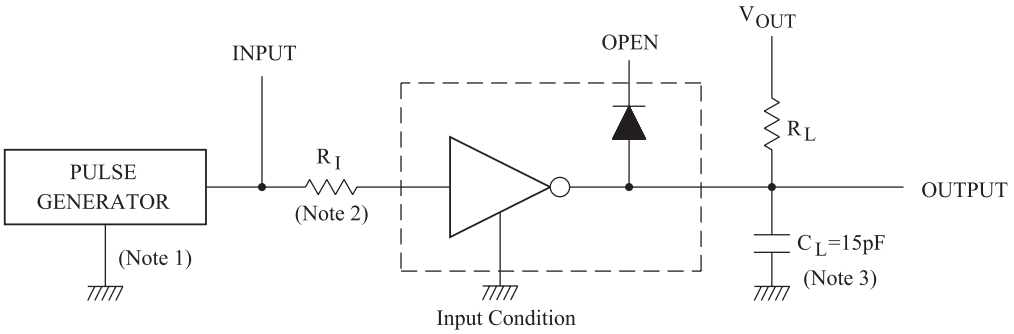
6. I_R

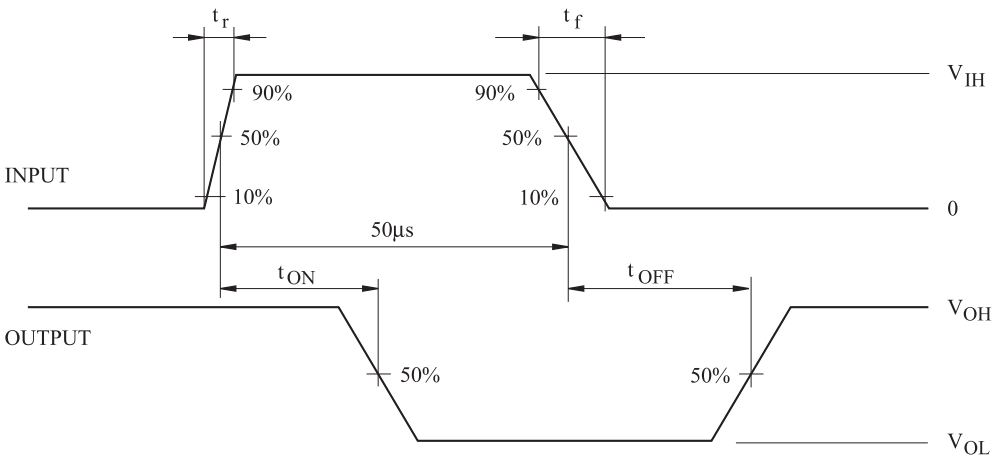


7. V_F



8. t_{ON} , t_{OFF}





Notes : 1. Pulse Width 50 μs, Duty Cycle 10%
Output Impedance 50Ω, $t_r \leqq 5$ns, $t_f \leqq 10$ns

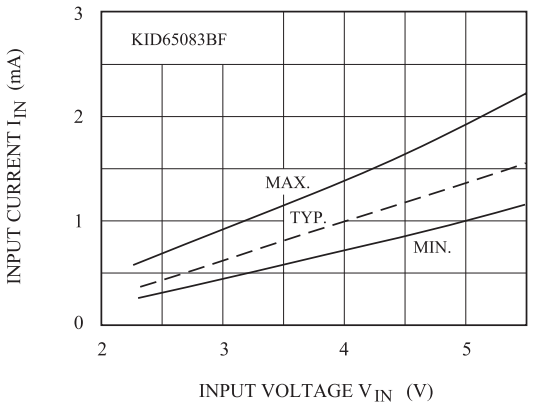
2. See below

Input Conditions

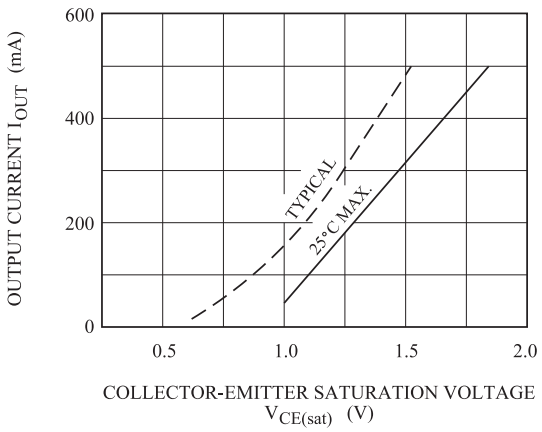
Type Number	R_I	V_{IH}
KID65083BF	0	3V

3. C_L includes probe and Jig capacitance.

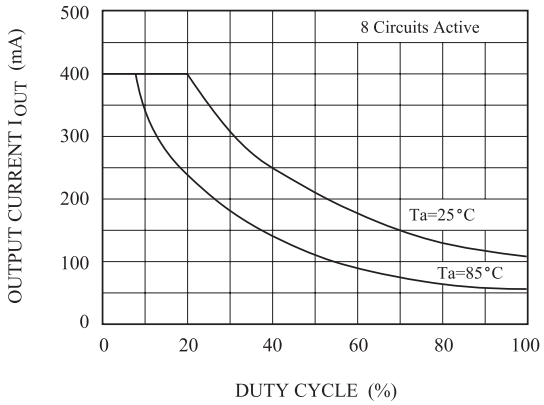
I_{IN} - V_{IN}



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



I_{OUT} - DUTY CYCLE



P_D - Ta