



钜地半导体
Tudi Semiconductor

Product Specification

TUDI-IK62083

8CH Darlington Sink Driver

网址 www.sztdbdt.com 🔍

用芯智造 · 卓越品质

**semiconductor device
manufacturer**

- Design
- research and development
- production
- and sales



Features

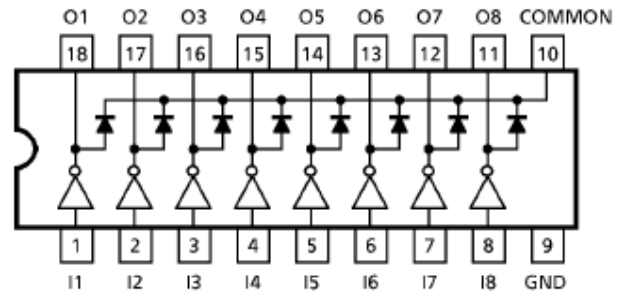
- Output current (single output) 500mA (Max)
- Output clamp diodes
- Inputs compatible with various types of logic

Description

The IK62083~IK62084 are high-voltage, high-current darlington drivers comprised of eight NPN darlington pairs.

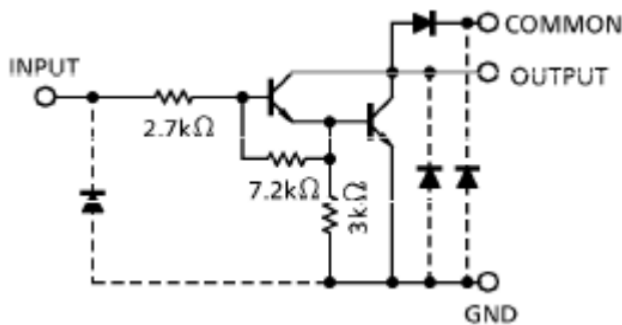
All units feature integral clamp diodes for switching inductive loads.

Application include relay, hammer, lamp and display (LED) drivers.

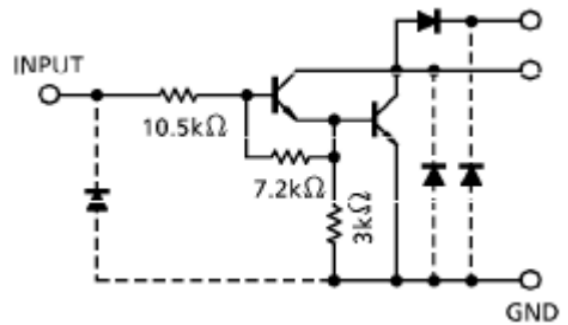


Block Schematics

IK62083



IK62084



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



Absolute Maximum Ratings

Ta = 25°C

Parameter		Symbol	Limit Values		Unit
			min.	max.	
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
Clamp Diode Reverse Voltage		V_R	50		V
Clamp Diode Forward Current		I_F	500		mA
Power Dissipation	IK62083N	P_D	1.47		W
	IK62083DW		0.96		
Operating Temperature		T_{opr}	-40	85	°C
Storage Temperature		T_{stg}	-55	150	°C

* Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

Recommended Operating Conditions

(Ta = -40~85°C)

Parameter		Symbol	Test Condition	Limit Value			Unit
				Min	Typ	Max	
Output Sustaining Voltage		V _{CE(SUS)}		0	-	50	V
Output Current	N	I _{OUT}	T _{pw} =25ms,Duty=10%, 8 Circuits	0	-	347	mA/ch
			T _{pw} =25ms,Duty=50%, 8 Circuits	0	-	123	
	DW		T _{pw} =25ms,Duty=10%, 8 Circuits	0	-	268	
			T _{pw} =25ms,Duty=50%, 8 Circuits	0	-	90	
Input Voltage		V _{IN}		0	-	30	V
Input Voltage (Output On)	IK62083N/DW	V _{IN(ON)}		3.5	-	30	V
	IK62084N/DW			8	-	30	
Clamp Diode Reverse Voltage		V _R		-	-	50	V
Clamp Diode Forward Current		I _F		-	-	400	mA



Electrical Characteristics

Ta = 25°C

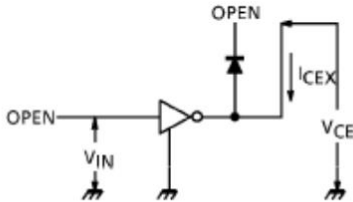
Parameter	Symbol	Test Circuit	Test Condition	Limit Values			Unit
				Min	Typ	Max	
Turn-On Delay	t _{ON}	8	R _L =125Ω, V _{OUT} =50V	-	0.1	0.2	us
Turn-Off Delay	t _{OFF}	8	R _L =125Ω, V _{OUT} =50V	-	0.21	0.42	us

Note : V_R=V_RMAX

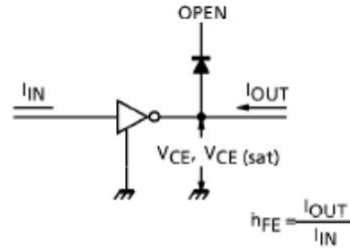


Test Circuit

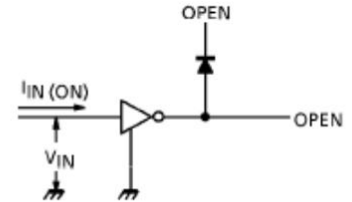
1. I_{CEX}



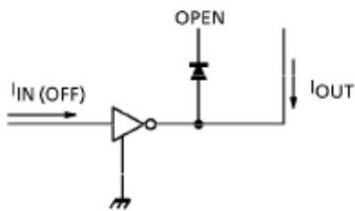
2. $V_{CE(sat)}$, h_{FE}



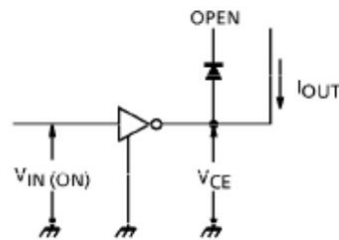
3. $I_{IN(ON)}$



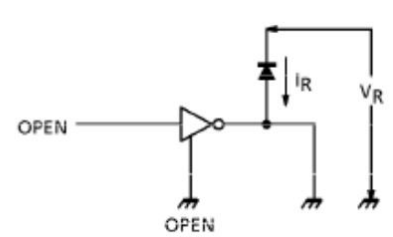
4. $I_{IN(OFF)}$



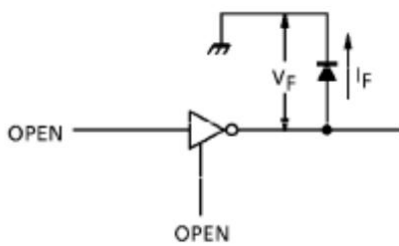
5. $V_{IN(ON)}$



6. I_R

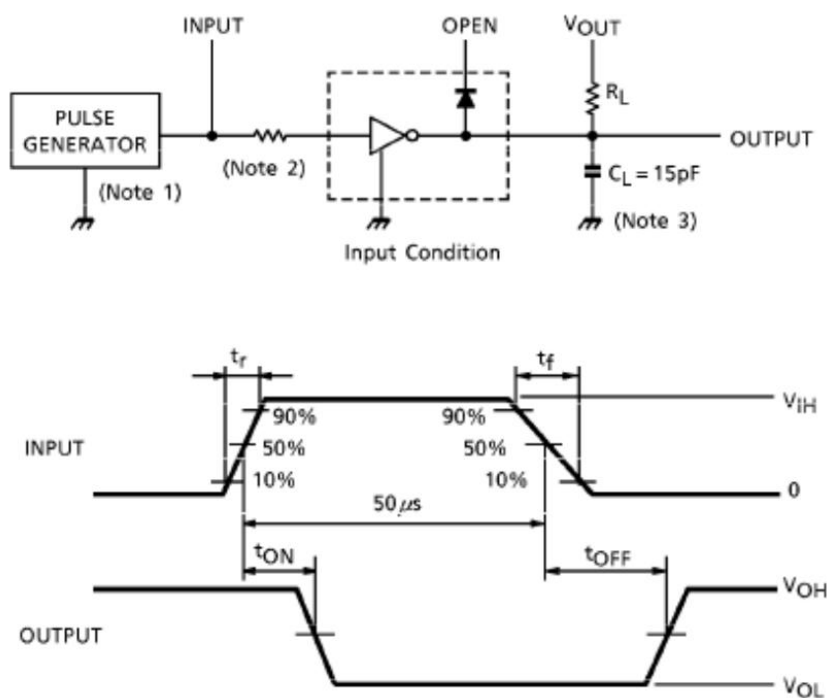


7. V_F





8. t_{ON} , t_{OFF}



Note 1 : Pulse Width 50us, Duty Cycle 10%
Output Impedance 50Ω , $t_r \leq 5ns$, $t_f \leq 10ns$

Note 2 : See below.

Input Condition

Type number	R1	V_{IH}
IK62083	0Ω	3V
IK62084	0Ω	8V

Note 3 : C_L includes probe and jig capacitance

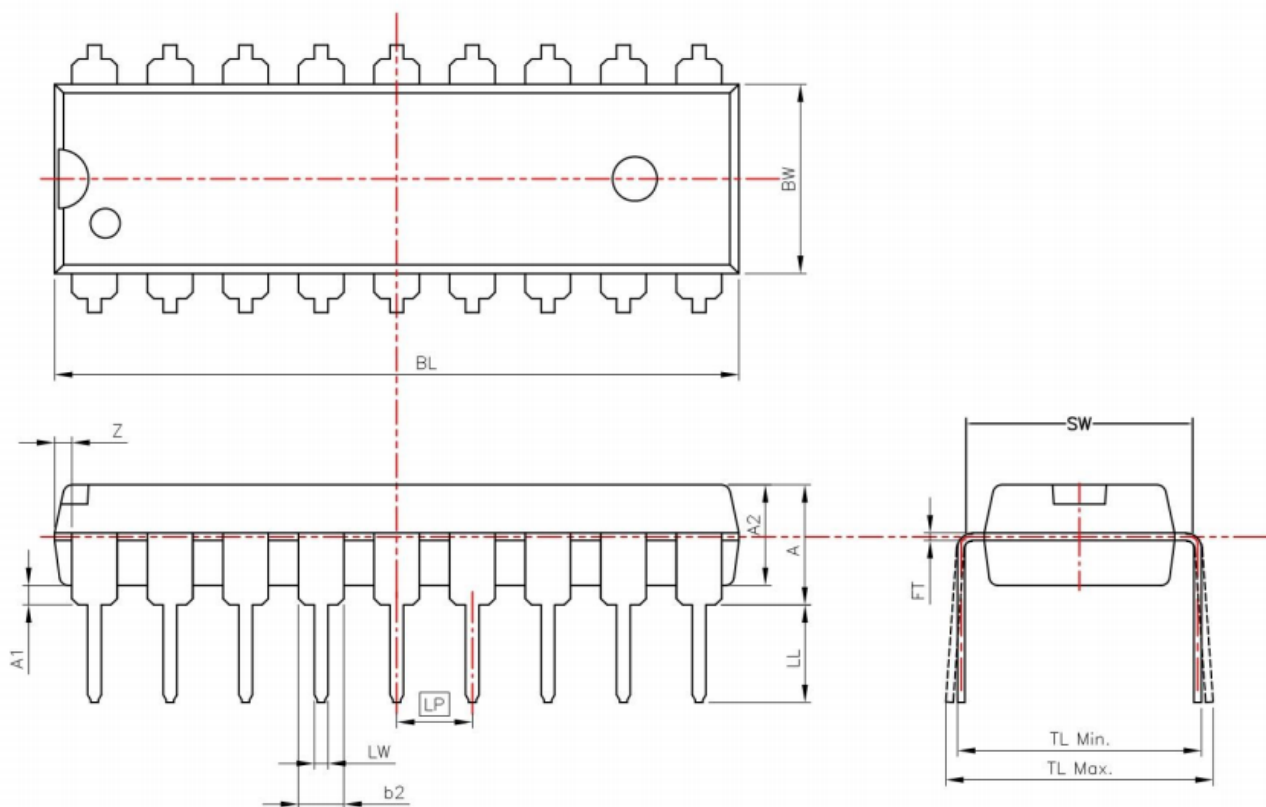


Order information

Order Number	Package	Package Quantity	Marking On The park
IK62083DWT-TUDI	SMD18	Tape,Reel,1000	IK62083DWT
IK62083N-TUDI	DIP18	Tape,Reel,2500	IK62083N



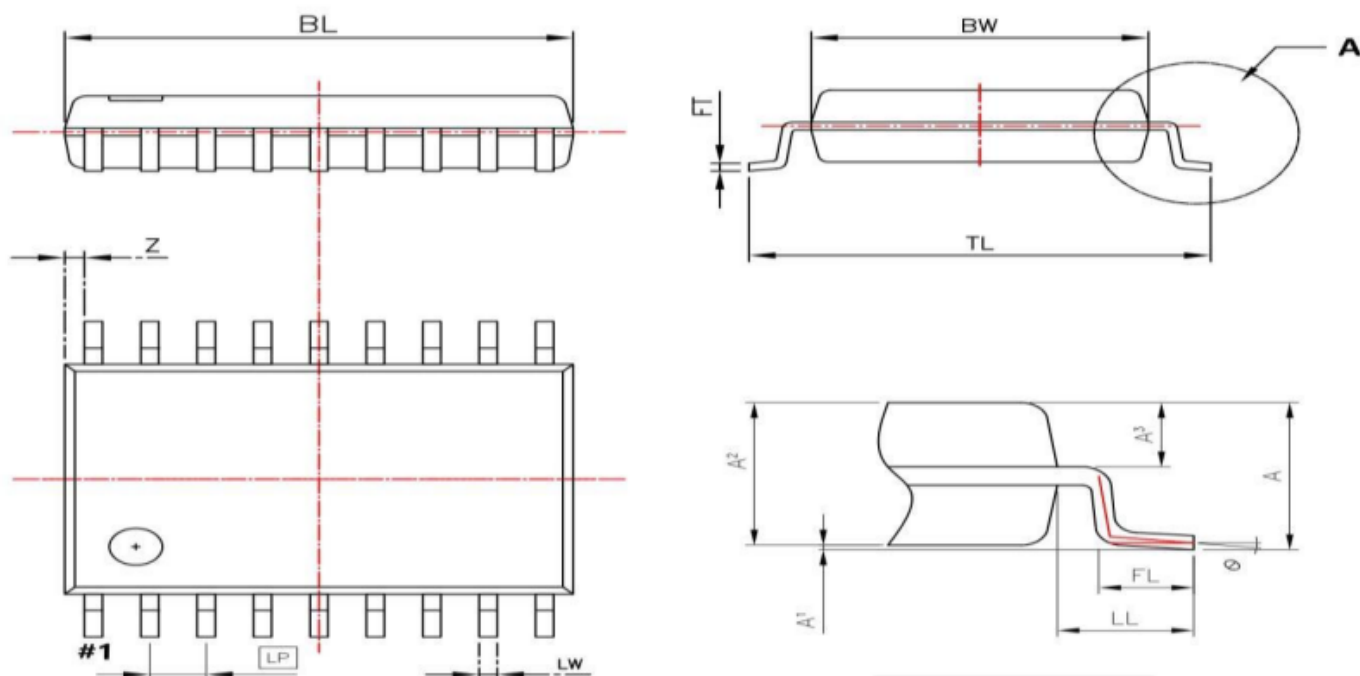
Package DIP18



SYMBOL	Dimension(mm)		
	Min	Typ	Max
BL	22.800		23.200
BW	6.200		6.600
FT	0.246		0.262
TL	7.900		8.800
LP	2.515		2.565
LW	0.432		0.482
A			4.310
A1	0.550		0.750
A2	3.300		3.500
b2		1.524	
LL	3.200		3.500
SW		7.620	
Z		0.570	



Package SOP18



SYMBOL	Dimension (mm)		
	Min	Typ	Max
BL	11.250		11.650
BW	7.400		7.800
FT	0.204		0.304
TL	10.300		10.500
LP	1.245		1.295
LW	0.381		0.431
A			2.700
A1	0.050		0.250
A2	2.250		2.450
A3	1.048BSC		
LL	1.40BSC		
FL	0.670		1.070
⊙	0		8
Z		0.440	



Important statement:

- TUDI Semiconductor reserves the right to modify the product manual without prior notice! Before placing an order, customers need to confirm whether the obtained information is the latest version and verify the completeness of the relevant information.
- Any semi-guide product is subject to failure or malfunction under specified conditions. It is the buyer's responsibility to comply with safety standards when using TUDI Semiconductor products for system design and whole machine manufacturing. And take the appropriate safety measures to avoid the potential in the risk of loss of personal injury or loss of property situation!
- TUDI Semiconductor products have not been licensed for life support, military, and aerospace applications, and therefore TUDI Semiconductor is not responsible for any consequences arising from the use of this product in these areas.
- If any or all TUDI Semiconductor products (including technical data, services) described or contained in this document are subject to any applicable local export control laws and regulations, they may not be exported without an export license from the relevant authorities in accordance with such laws.
- The specifications of any and all TUDI Semiconductor products described or contained in this document specify the performance, characteristics, and functionality of said products in their standalone state, but do not guarantee the performance, characteristics, and functionality of said products installed in Customer's products or equipment. In order to verify symptoms and conditions that cannot be evaluated in a standalone device, the Customer should ultimately evaluate and test the device installed in the Customer's product device.
- TUDI Semiconductor documentation is only allowed to be copied without any alteration of the content and with the relevant authorization. TUDI Semiconductor assumes no responsibility or liability for altered documents.
- TUDI Semiconductor is committed to becoming the preferred semiconductor brand for customers, and TUDI Semiconductor will strive to provide customers with better performance and better quality products.