

8CH Darlington Source Driver

IK62783/4

The IK62783, IK62784 are eight current drivers with common power supply and ground.

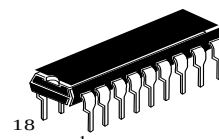
The IK62783, IK62784 are purposed to use different devices: relays, lamps, displays (LED & gas discharge cells), in fluorescent indicators, telecommunication lines and logic devices.

Features

- High output voltage up to 50 V
- One channel output current up to minus 500 mA
- Output clamp diodes
- Single supply voltage 50V

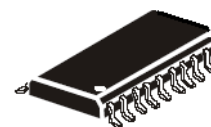
Permissible value of electrostatic potential 2000V

IK62783N
IK62784N



DIP-18

IK62783D
IK62784D



SOP-18

Ta=-40 ~ 85°C For all package

Table 1 – Electric circuitry difference of ICs

IC marking	Quantity of serially connected diodes	Applicable with ICs
IK62783N/D	3	TTL, 5 V CMOS
IK62784N/D	6	6 ~ 15 V P-MOS, CMOS

Table 2 – Pin Description

Pin number	Symbol	Description
01	IN 1	Input
02	IN 2	Input
03	IN 3	Input
04	IN 4	Input
05	IN 5	Input
06	IN 6	Input
07	IN 7	Input
08	IN 8	Input
09	Vcc	Supply voltage pin
10	GND	Common pin (ground)
11	OUT 8	Output
12	OUT 7	Output
13	OUT 6	Output
14	OUT 5	Output
15	OUT 4	Output
16	OUT 3	Output
17	OUT 2	Output
18	OUT 1	Output

Maximum Ratings

Symbol	Parameter	Norm		Unit
		Min	Max	
V_{CC}	Supply voltage	-	50	V
I_{OUT}	Output current (one channel)	-	-500	mA
V_{IN}	Input voltage for IK62783N/D	-0.5	15	V
	for IK62784N/D	-0.5	30	
V_R	Clamp diode reverse voltage	-	50	V
I_F	Clamp diode forward current	-	500	mA
T_{stg}	Storage temperature	-60	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 operation modes

Symbol	Parameter	Norm		Unit
		Min	Max	
V_{CC}	Supply voltage	-	50	V
I_{OUT}	Output current (one channel)	-	-350	mA
V_R	Control pin diode reverse voltage	-	50	V
I_F	Control pin diode forward current	-	400	mA

Electrical Characteristics

Symbol	Parameter	Measurement mode	Norm		Ambient temperature °C	Unit
			Min	Max		
V _{IN(ON)}	Input voltage at open (ON) state of output, IK62783D, IK62783N	I _{OUT} = -350 mA V _{CE} = 2 V	-	$\frac{2.0}{2.4}$	$\frac{25 \pm 10}{-40 \text{ to } 85}$	V
	IK62784D, IK62784N		-	$\frac{4.5}{5.4}$		
V _{IN(OFF)}	Input voltage at close (OFF) state of output, IK62783D, IK62783N	I _{OUT} = -500 μA	$\frac{0.8}{0.64}$	-		V
	IK62784D, IK62784N		$\frac{2.0}{1.6}$	-		
	Consumption current IK62783D, IK62783N	V _{IN} = 2 V V _{CC} = 50 V	-	$\frac{2.5}{3.0}$		mA
	IK62784D, IK62784N	V _{IN} = 4.5 V V _{CC} = 50 V				
V _{CE(sat)}	Collector-emitter saturation voltage IK62783D, IK62783N	I _{OUT} = -100 mA V _{IN} = 2 V	-	$\frac{1.8}{2.16}$		V
		I _{OUT} = -225 mA V _{IN} = 2 V	-	$\frac{1.9}{2.28}$		
		I _{OUT} = -350 mA V _{IN} = 2 V	-	$\frac{2.0}{2.4}$		
	IK62784D, IK62784N	I _{OUT} = -100 mA V _{IN} = 4.5 V	-	$\frac{1.8}{2.16}$		
		I _{OUT} = -225 mA V _{IN} = 4.5 V	-	$\frac{1.9}{2.28}$		
		I _{OUT} = -350 mA V _{IN} = 4.5 V	-	$\frac{2.0}{2.4}$		
I _{CEX}	Output leakage current at close (OFF) state of output	V _{CC} = 50 V V _{IN} = 0.4 V	-	100	25±10	μA
V _F	Forward DC voltage of clamp diode	I _F = 350 mA	-	$\frac{2.0}{2.4}$	25±10 -40 to 85	V
I _{IN(ON)}	Input current IK62783D, IK62783N	V _{IN} = 2.4 V	-	$\frac{0.052}{0.062}$		mA
		V _{IN} = 3.85 V	-	$\frac{0.26}{0.31}$		
	IK62784D, IK62784N	V _{IN} = 5 V	-	$\frac{0.13}{0.156}$		
		V _{IN} = 12 V	-	$\frac{1.13}{1.356}$		
I _R	Reverse current of clamp diode	V _R = 50 V	-	$\frac{50}{60}$		μA

Typical electric parameters at $T_a = 25\text{ }^{\circ}\text{C}$

Symbol	Parameter	Measurement mode	Typical value	Unit
t_{ON}	Switch -ON delay	$R_L = 125\text{ }\Omega$, $V_{CC} = 50\text{ V}$	0.15	μs
t_{OFF}	Switch-OFF delay	$C_L = 15\text{ pF}$	3.0	μs

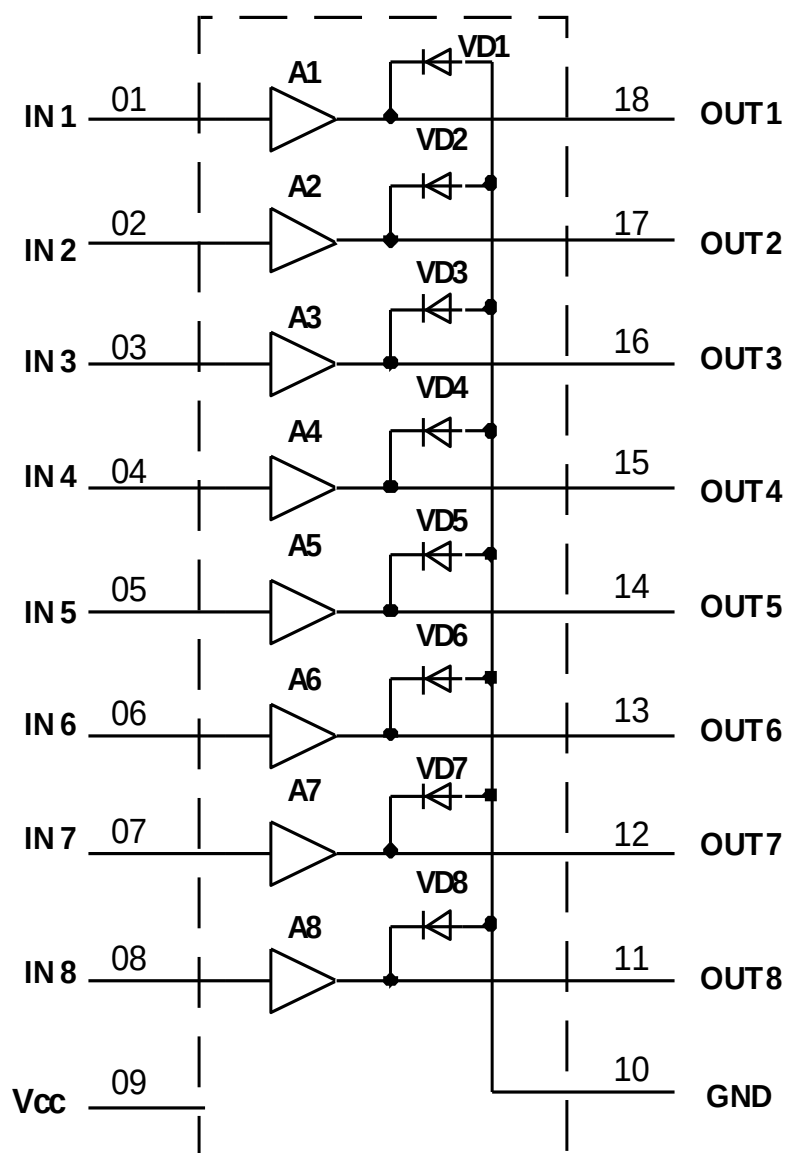


Fig 2 – Electric block diagram

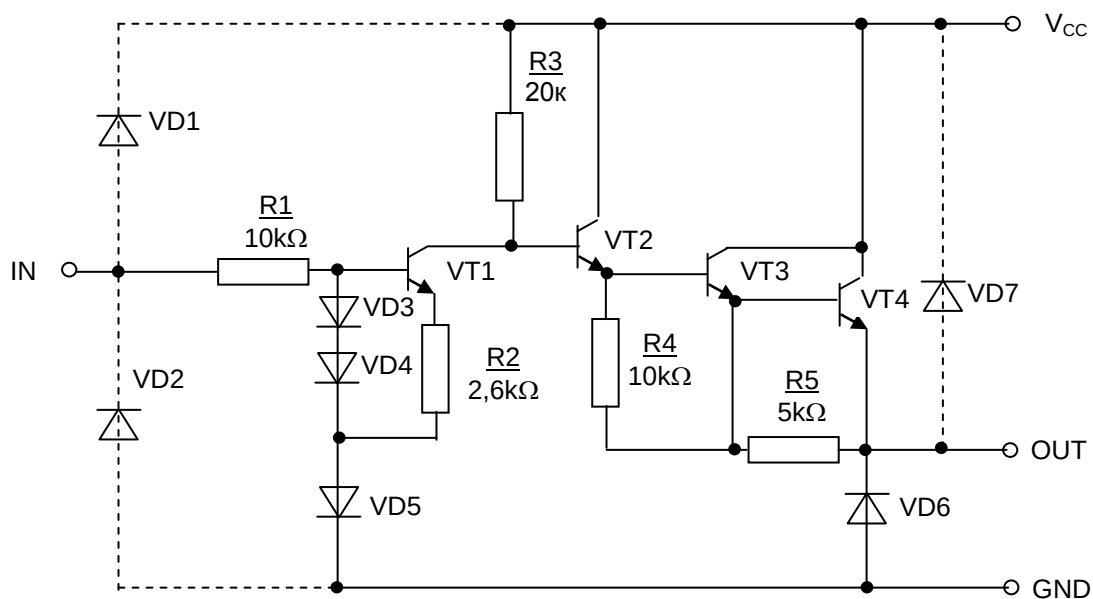


Fig. 3 – Electrical scheme of one channel of ICs IK62783N/D

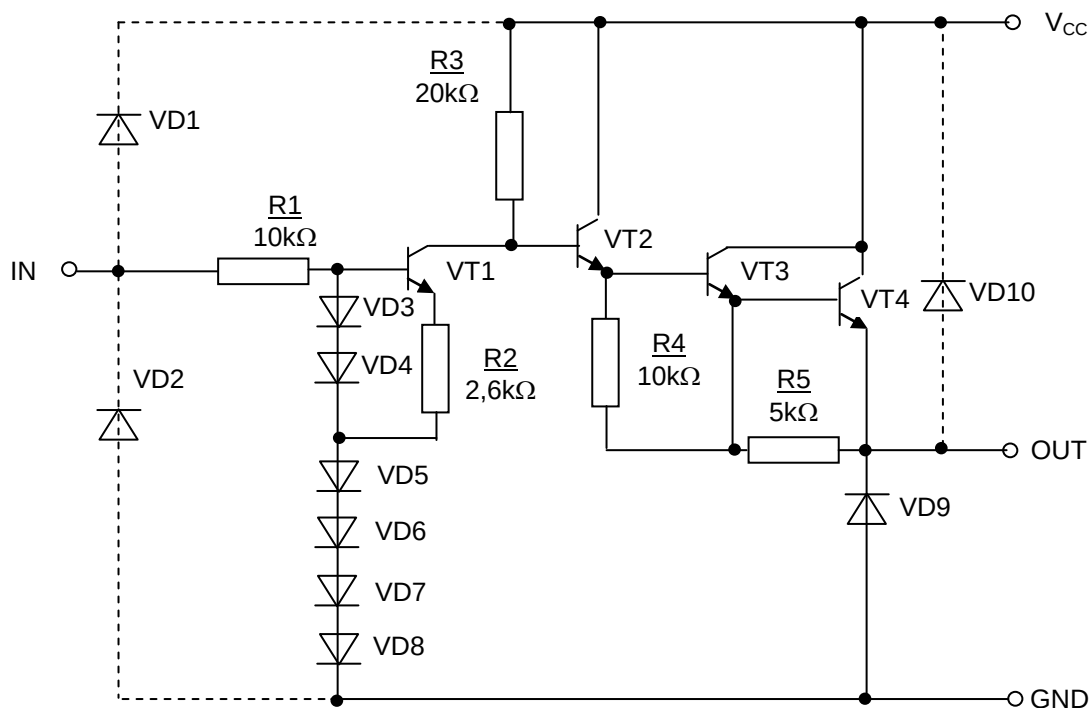
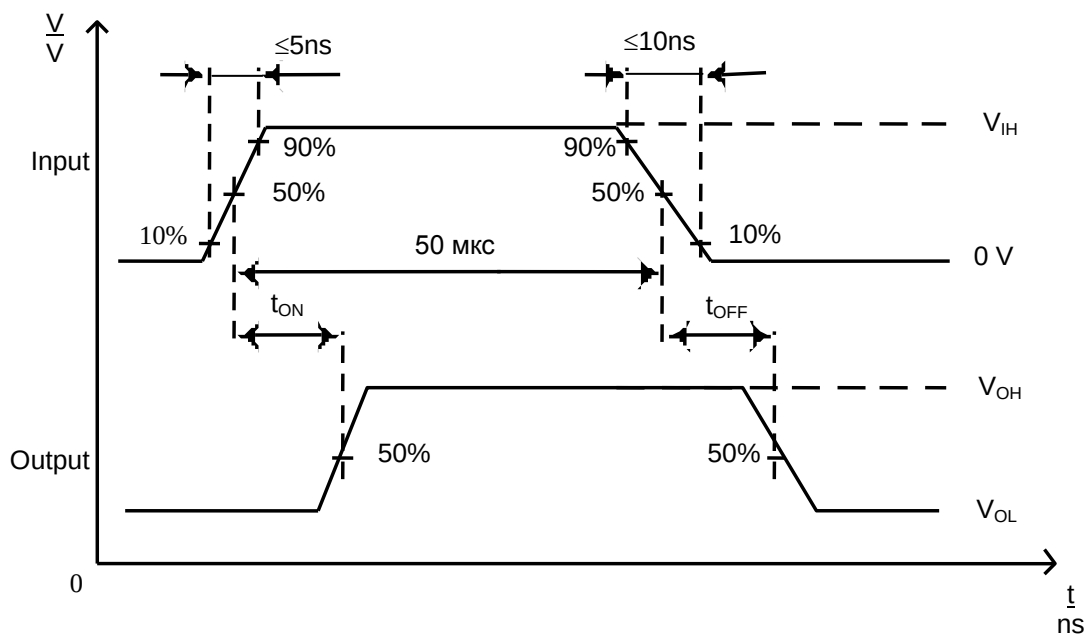


Fig. 4 – Electrical scheme of one channel of ICs IK62784N/D



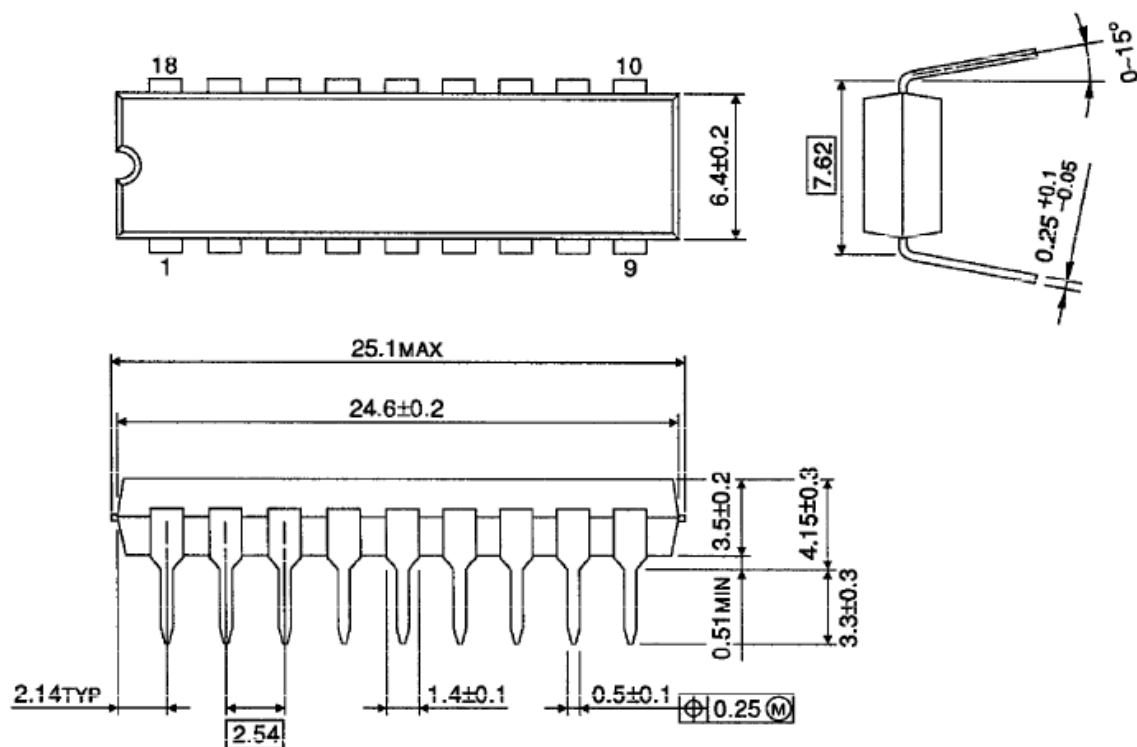
Pulse width 50 μ s, ratio (duty cycle) 100% • $t_w / T = 10\%$ (t_w – pulse width, μ s; T – period , μ s)

Fig. 5 – Time diagram of IK62783N/D, IK62784N/D at measurement of signal delay at switching -ON t_{ON} and switching -OFF t_{OFF}

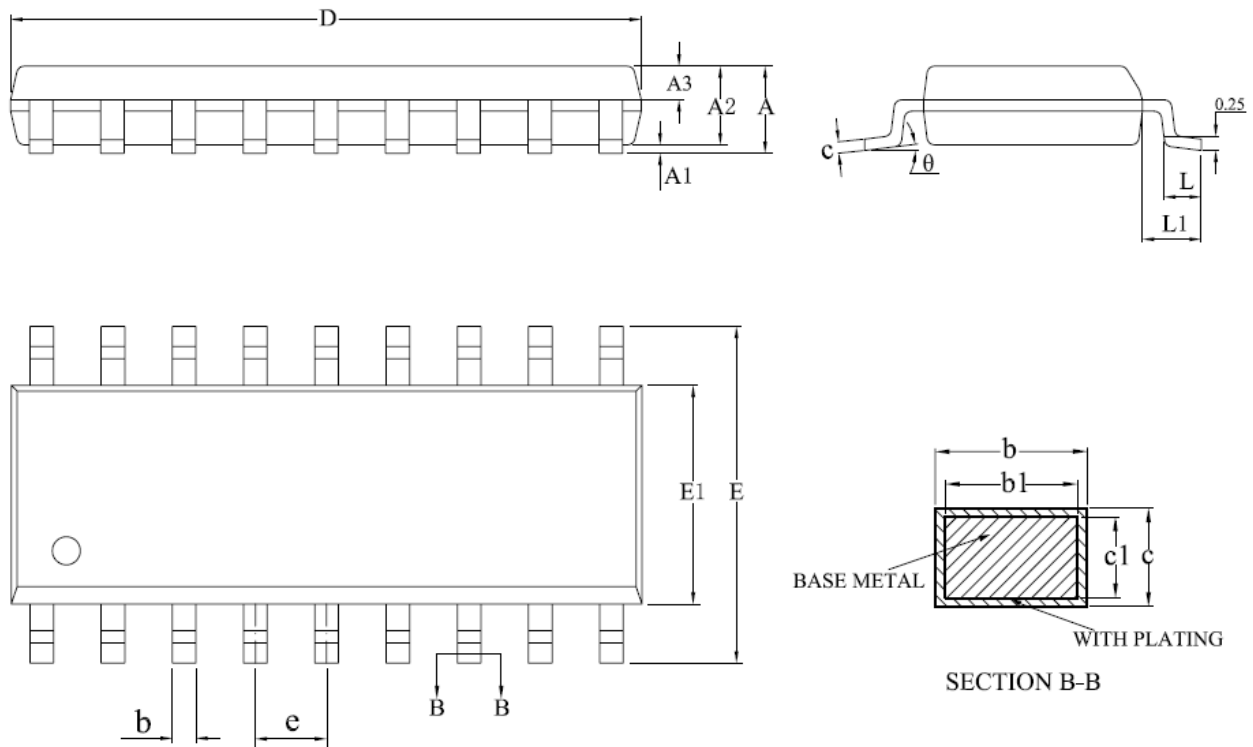
Package Dimensions

DIP-18

Unit: mm



SOP-18



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	—	—	2.70
A1	0.10	—	0.28
A2	2.25	2.30	2.35
A3	0.97	1.02	1.07
b	0.35	—	0.44
b1	0.34	0.37	0.39
c	0.26	—	0.31
c1	0.24	0.25	0.26
D	11.25	11.45	11.65
E	10.10	10.30	10.50
E1	7.30	7.50	7.70
e	1.27BSC		
L	0.70	—	1.00
L1	1.40BSC		
θ	0	—	8°
L/P载体尺寸 (mil)	140*160		