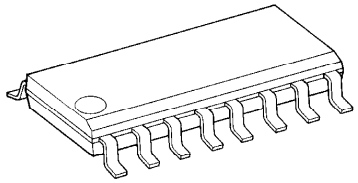
TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62305FW

(Malaysia works products)

7 CH LOW ACTIVE DARLINGTON SINK DRIVER

The TD62305FW is non-inverting transistor array, which is composed of eight NPN darlington output stages and PNP input stages.
This device is Low Level input active driver and is suitable for operations with TTL, 5 V CMOS and 5 V Microprocessors which have sink current output drivers.
This device is used for driving relay, hammer, lamp and LED.



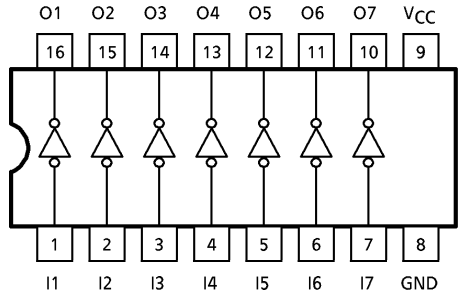
SOL16-P-150-1.27A

Weight : 0.15 g (Typ.)

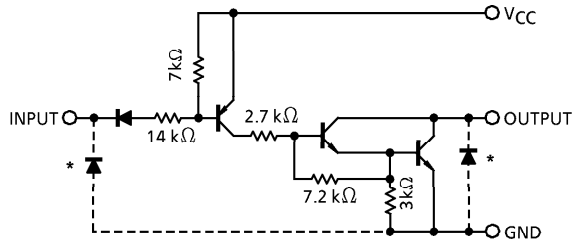
FEATURES

- Output current (single output) : 500 mA (Max)
- High sustaining voltage : 35 V (Max)
- Low level active input
- Input compatible with TTL and 5 V CMOS

PIN CONNECTION (TOP VIEW)



SCHEMATICS (EACH DRIVER)



* : Parasitic diode
The input and output parasitic diodes cannot be used as clamp diodes.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	−0.5~7.0	V
Output Sustaining Voltage	$V_{CE\ (SUS)}$	−0.5~35	V
Output Current	I_{OUT}	500	mA / ch
Input Voltage	V_{IN}	−0.5~7	V
Input Current	I_{IN}	−10	mA
Power Dissipation	P_D	0.625 (Note 1)	W
Operating Temperature	T_{opr}	−40~85	°C
Storage Temperature	T_{stg}	−55~150	°C

(Note 1) : On glass epoxy PCB (30 × 30 × 1.6 mm Cu 50%)

RECOMMENDED OPERATING CONDITIONS (Ta = −40~85°C)

CHARACTERISTIC	SYMBOL	CONDITION		MIN	TYP.	MAX	UNIT
Supply Voltage	V_{CC}	—		4.5	5.0	5.5	V
Output Sustaining Voltage	$V_{CE\ (SUS)}$	—		0	—	35	V
Output Current	I_{OUT}	DC 1 circuit		0	—	350	mA / ch
		$T_{pw} \leqq 25$ ms 7 circuits T_j = 120°C Ta = 85°C (Note 2)	Duty = 10%	0	—	240	
			Duty = 50%	0	—	60	
Input Voltage	V_{IN}	—		0	—	5.5	V
Power Dissipation	P_D	(Note 2)		—	—	0.325	W

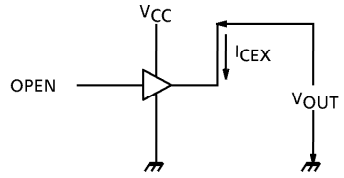
(Note 2) On glass epoxy PCB (30 × 30 × 1.6mm Cu 50%)

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

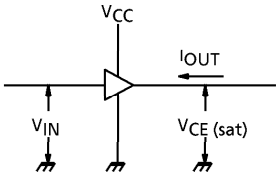
CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION		MIN	TYP.	MAX	UNIT
Output Leakage Current		I_{CEX}	1	V_{CC} = 5.5 V V_{IN} = 0 V	V_{OUT} = 35 V, Ta = 85°C	—	—	−100	μA
Output Saturation Voltage		$V_{CE\ (sat)}$	2	V_{CC} = 4.5 V I_{OUT} = 350 mA	V_{IN} = $V_{IN\ (ON)}$ Max	—	1.4	2.0	V
Input Current	(Output On)	$I_{IN\ (ON)}$	3	V_{CC} = 5.5 V, V_{IN} = 0.4 V		—	−0.32	−0.45	mA
	(Output Off)	$I_{IN\ (OFF)}$	4	—		—	—	−40	μA
Input Voltage		$V_{IN\ (ON)}$	5	—		—	—	V_{CC} − 3.7	V
Supply Current	(Output Off)	$I_{CC\ (ON)}$	6	V_{CC} = 5.5 V, V_{IN} = 0 V		—	17	22	mA
	(Output Off)	$I_{CC\ (OFF)}$	6	V_{CC} = V_{IN} = 5.5 V		—	—	100	μA
Turn-On Delay		t_{ON}	7	V_{CC} = 5V C_L = 15pF	V_{OUT} = 35 V, R_L = 87.5 Ω	—	0.1	—	μs
Turn-Off Delay		t_{OFF}			V_{OUT} = 35 V, R_L = 87.5 Ω	—	3	—	

TEST CIRCUIT

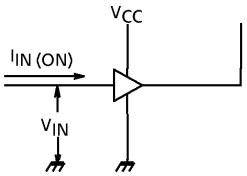
1. I_{CEX}



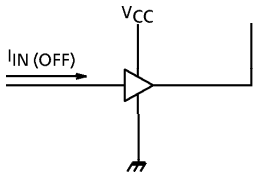
2. $V_{CE\ (sat)}$



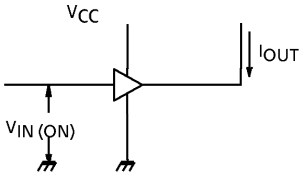
3. $I_{IN\ (ON)}$



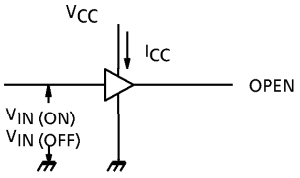
4. $I_{IN\ (OFF)}$



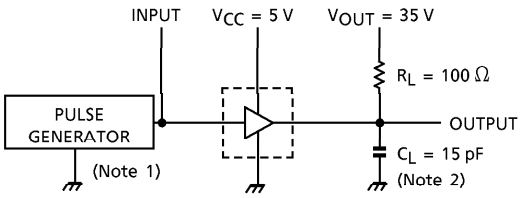
5. $V_{IN\ (ON)}$

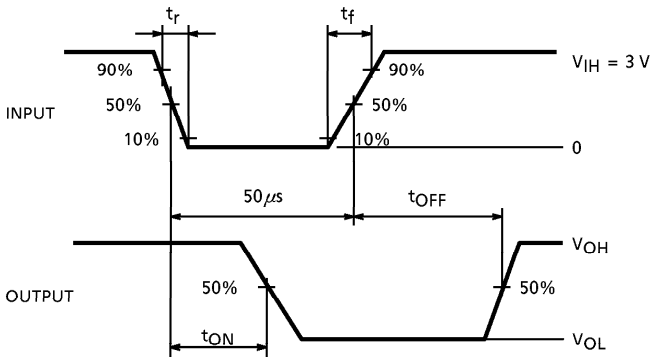


6. I_{CC}



7. t_{ON}, t_{OFF}



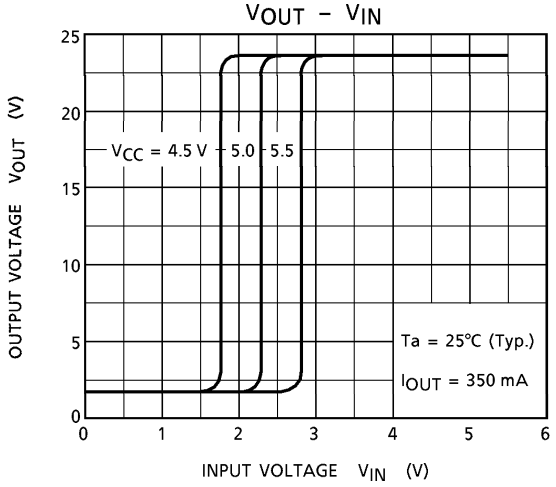


(Note 1) : Pulse width 50 μs, duty cycle 10%
Output impedance 50 Ω, $t_r \leqq 10$ ns, $t_f \leqq 5$ ns
(Note 2) : C_L includes probe and jig capacitance.

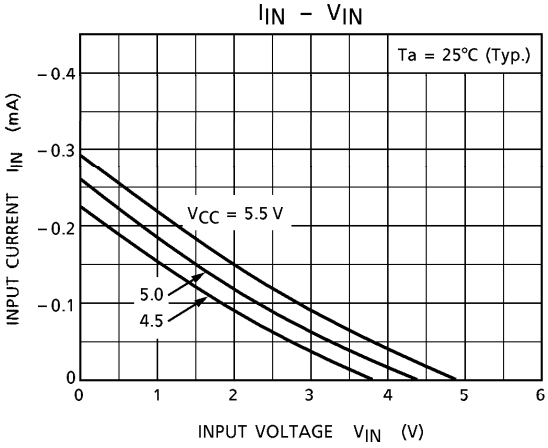
PRECAUTIONS FOR USING

Utmost care is necessary in the design of the output line, V_{CC} and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.

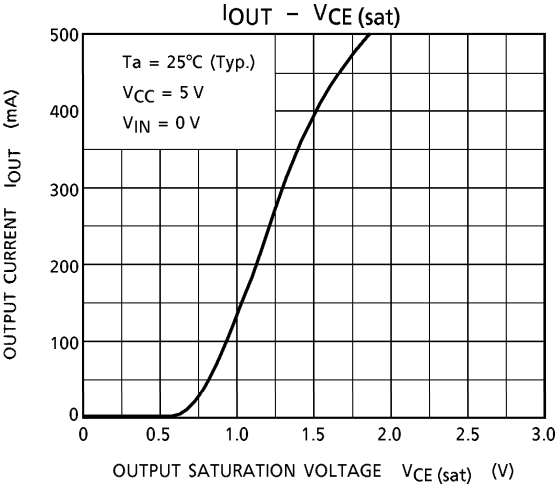
V_{OUT} – V_{IN}



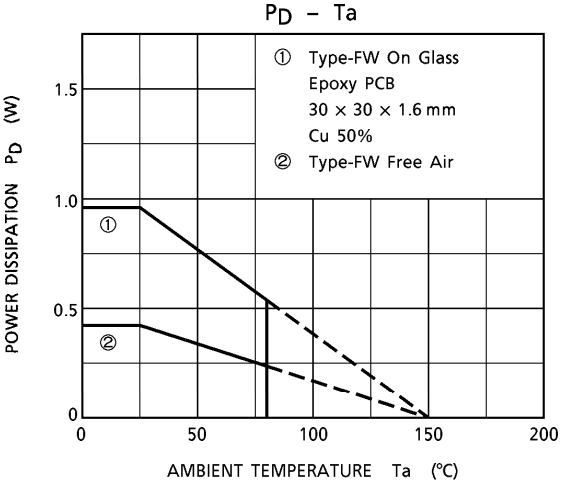
I_{IN} – V_{IN}



I_{OUT} – $V_{CE\ (sat)}$

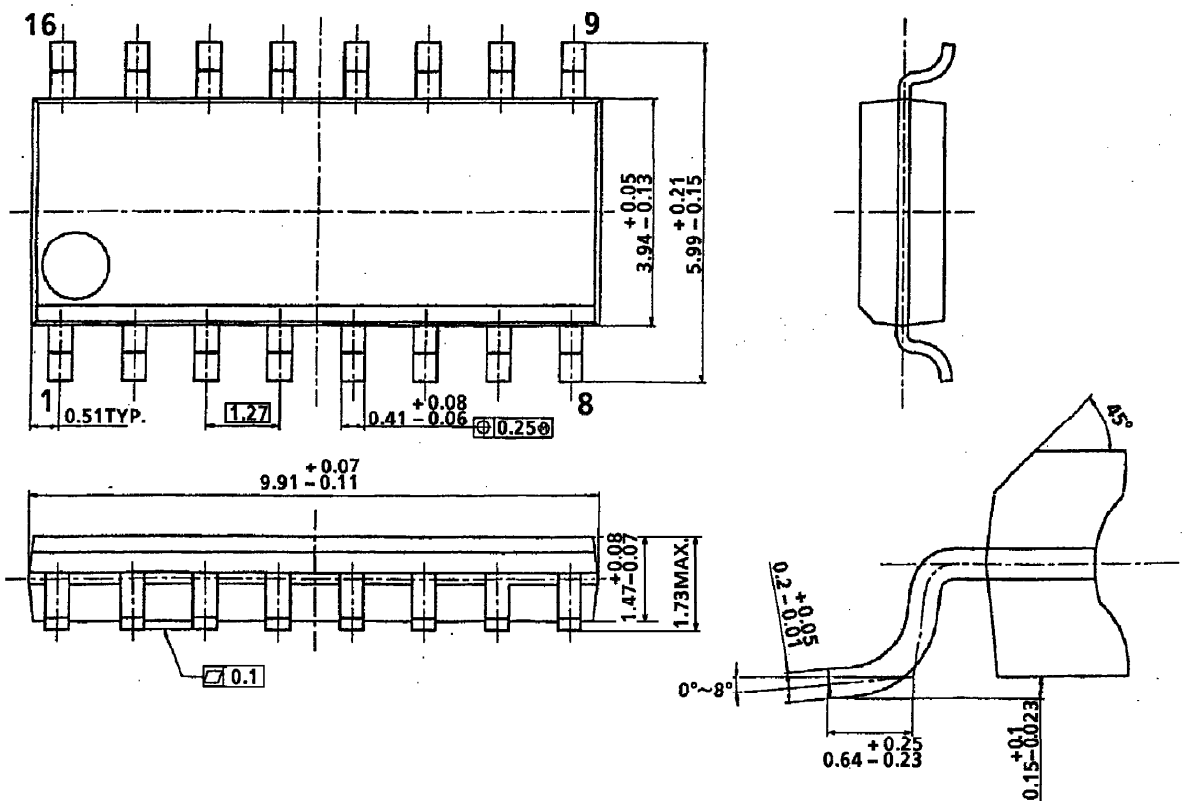


P_D – Ta



PACKAGE DIMENSIONS

SOL16-P-150-1.27A Unit : mm



Weight : 0.15 g (Typ.)