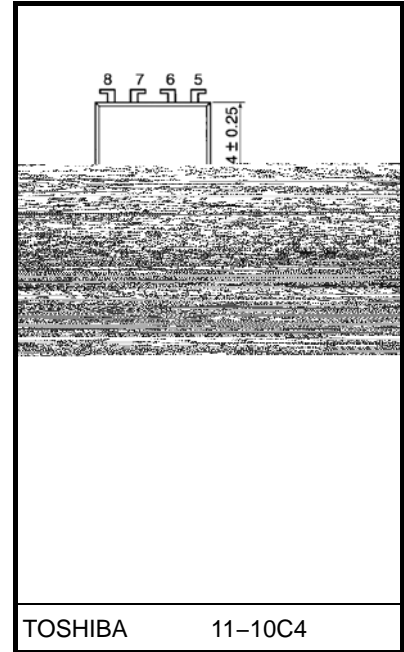


TOSHIBA Photocoupler GaA As Ired & Photo IC

6N135, 6N136

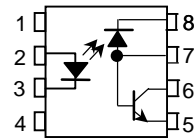
- Digital Logic Isolation.
- Line Receiver.
- Power Supply Control
- Switching Power Supply
- Transistor Inverter

UL recognized: UL1577, file no. E67349

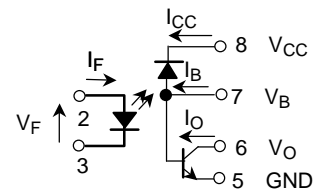


Weight: 0.54 g (typ.)

Pin Configurations



- 1 : N.C.
- 2 : ANODE
- 3 : CATHODE
- 4 : N.C.
- 5 : EMITTER
- 6 : COLLECTOR
- 7 : BASE, ANODE
- 8 : CATHODE



Absolute Maximum Ratings (Ta = 25°C)

Characteristic		Symbol	Rating	Unit
LED	Forward current (Note 1)	I_F	25	mA
	Pulse forward current (Note 2)	I_{FP}	50	mA
	Total pulse forward current (Note 3)	I_{FPT}	1	A
	Reverse voltage	V_R	5	V
	Diode power dissipation (Note 4)	P_D	45	mW
Detector	Output current	I_O	8	mA
	Peak output current	I_{OP}	16	mA
	Emitter-base reverse voltage (pin 5-7)	V_{EB}	5	V
	Supply voltage	V_{CC}	-0.5~15	V
	Output voltage	V_O	-0.5~15	V
	Base current (pin 7)	I_B	5	mA
	Output power dissipation (Note 5)	P_o	100	mW
Operating temperature range		T_{opr}	-55~100	°C
Storage temperature range		T_{stg}	-55~125	°C
Lead solder temperature (10s) (Note 6)		T_{sol}	260	°C
Isolation voltage (Note 7)		BV_S	2500	V_{rms}

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

(Note 1) Derate 0.8mA above 70°C.

(Note 2) 50% duty cycle, 1ms pulse width.
Derate 1.6mA / °C above 70°C.

(Note 3) Pulse width 1μs, 300pps.

(Note 4) Derate 0.9mW / °C above 70°C.

(Note 5) Derate 2mW / °C above 70°C.

(Note 6) Soldering portion of lead: Up to 2mm from the body of the device.

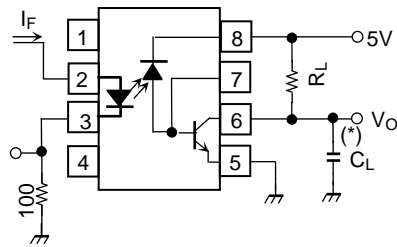
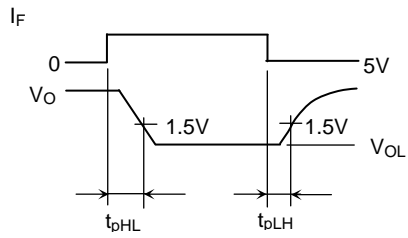
(Note 7) R.H. 60%, AC / 1min.

Switching Specifications

(unless otherwise specified. $T_a = 25^\circ\text{C}$, $V_{CC} = 5\text{V}$, $I_F = 16\text{mA}$)

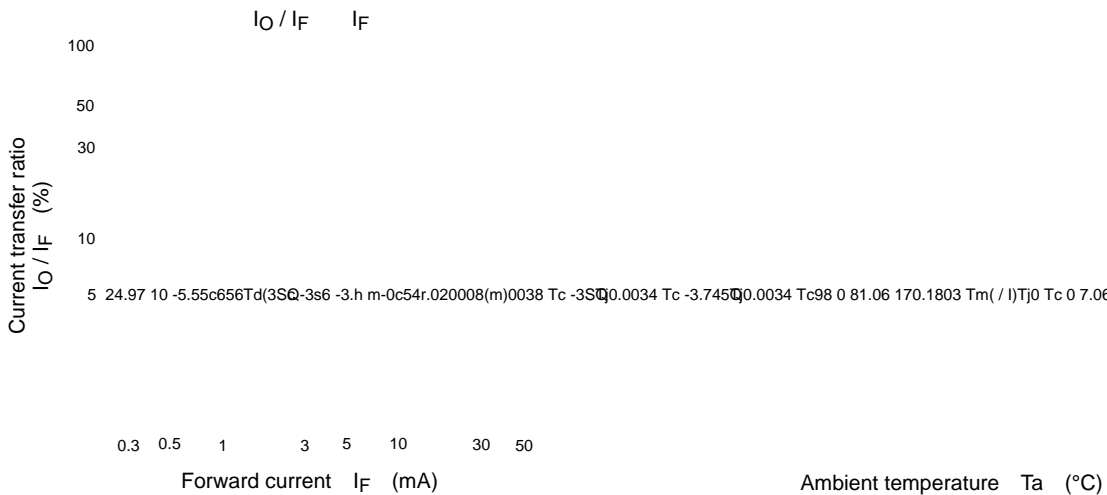
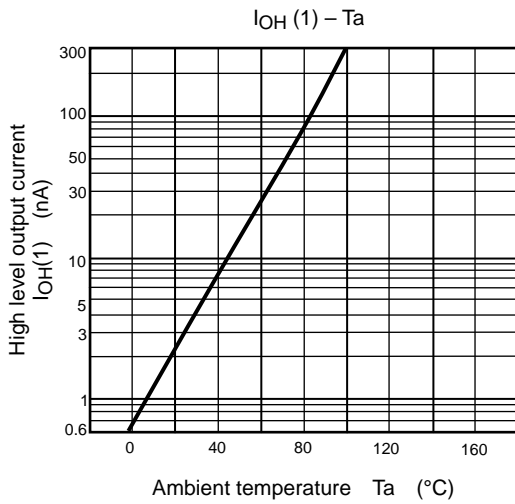
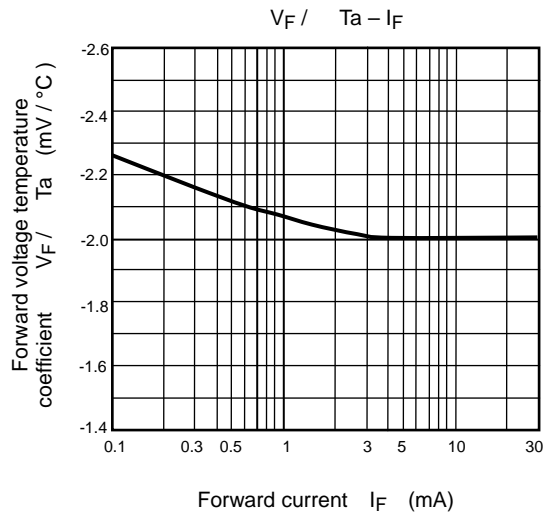
Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Propagation delay time to logic low at output	6N135	1	$R_L = 4.1\text{k}$		0.2	1.5	μs
	6N136		$R_L = 1.9\text{k}$		0.2	0.8	μs

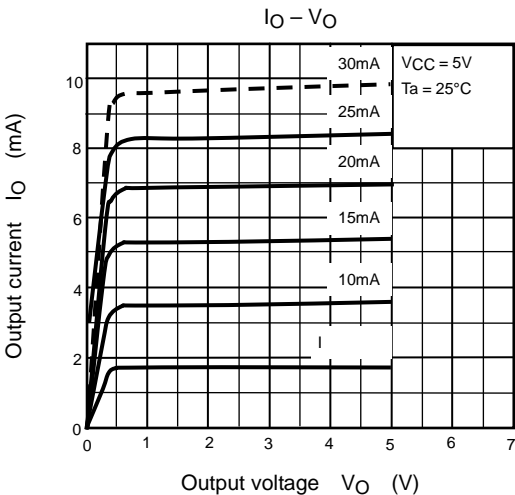
Test Circuit 1.



(*) C_L is approximately 15pF which includes probe and stray wiring capacitance.

Test Circuit 2.





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