

TOSHIBA SOLID STATE I/O INTERFACE MODULE

TF1109

DC OUTPUT MODULE

TOSHIBA TF1109 is DC 24V Line Controlled I/O Interface Module and it includes the optical isolator. Using this Module, you can design high reliability and compact system.

- DC Load Current : $I_O = 1A$ (Max.)
- Recommended DC Load Voltage : $V_O = 10 \sim 30V$ DC
- Recommended Control Input Voltage : $V_{F(IN)} = 5V$
- 1500V AC Optical Isolation
- Including Surge Voltage Suppressor
- Input is Compatible with TTL Logic
- Small Size and Light Weight

MAXIMUM RATINGS ($T_a = 25^\circ C$)
INPUT (CONTROL)

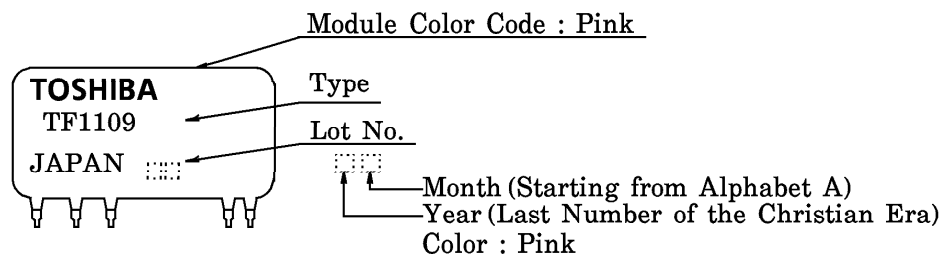
CHARACTERISTIC	SYMBOL	RATING	UNIT
Control Input Voltage (DC) (Note 1)	$V_{F(IN)}$	6	V
Control Input Current	$I_{F(IN)}$	2	mA
Reverse Voltage (DC)	$V_{R(IN)}$	5	V

OUTPUT (DC LOAD)

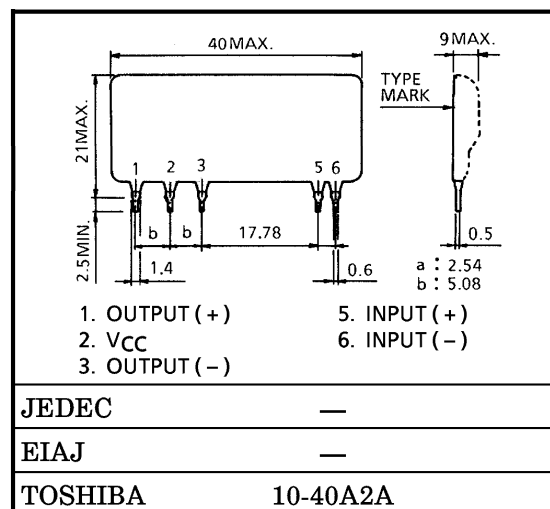
Output Load Voltage	V_O	35	V
Output Supply Voltage	V_{CC}	35	V
Output Load Current	DC	I_O	A
	10ms	I_{OP}	
Operating Frequency Range	f	65	Hz
Isolation Voltage (Input-Output) (AC)	BV_S / AC	1500 (1min)	V
Operating Temperature Range	T_{opr}	$-20 \sim 80$	$^\circ C$
Storage Temperature Range	T_{stg}	$-20 \sim 80$	$^\circ C$
Lead Soldering Temperature (10s)	T_{sol}	260	$^\circ C$

Note 1 : Driving input rating : Insert an external resistance into I/O when the power supply over 6V is used.

MARK

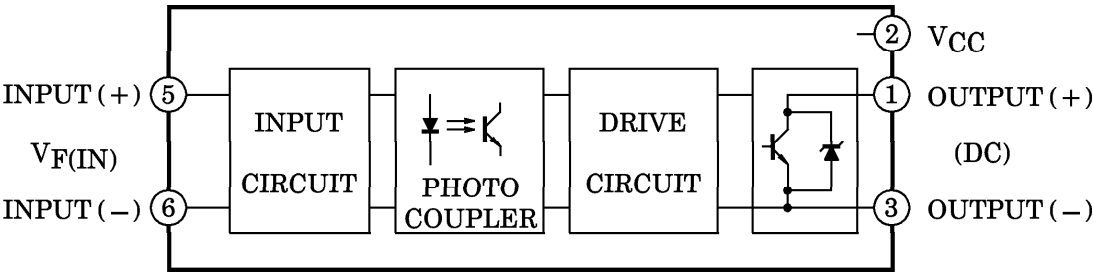


Unit in mm



Weight : 7.5g

BLOCK DIAGRAM



ELECTRICAL CHARACTERISTICS (Ta = 25°C, VCC = 24V)
INPUT (CONTROL)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Pick Up Voltage	V_{FT}	$V_O = 24V, I_O = 1A$ Resistive Load	—	2.3	4.5	V
Drop Out Voltage	V_{FD}		0.6	1.5	—	
Input Resistance	R_{IN}	—	—	3	—	k Ω

OUTPUT (DC LOAD)

Off-State Leakage Current	I_{OD}	$V_O = 24V$	—	—	0.5	mA
Peak On-State Voltage	V_{SAT}	$I_O = 1A, V_{F(IN)} = 5V, V_O = 24V$	—	0.45	0.65	V
Breakdown Voltage	V_{BR}	$I_{OD} = 9mA, 3pin\ to\ 1pin$	35	—	40	V
Turn-On Time	t_{on}	$V_{F(IN)} = 0 \rightarrow 5V$ $V_O = 24V, I_O = 1A,$ Resistive Load	—	20	100	μs
Turn-Off Time	t_{off}	$V_{F(IN)} = 5 \rightarrow 0V$ $V_O = 24V, I_O = 1A,$ Resistive Load	—	0.5	1	ms
Isolation Resistance	R_S	$V = 1kV, R.H = 40 \sim 60\%$	—	10^{10}	—	Ω

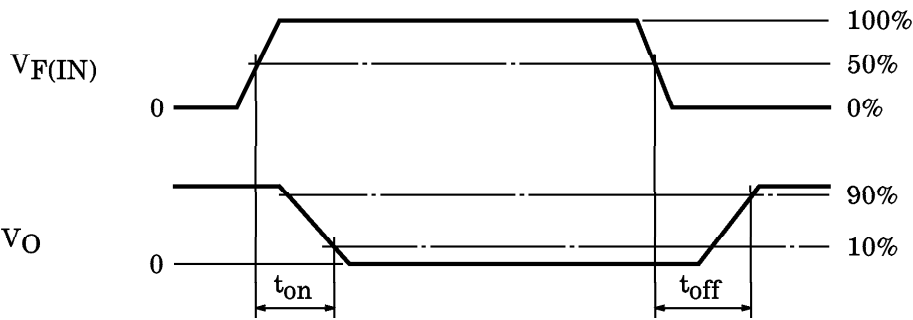
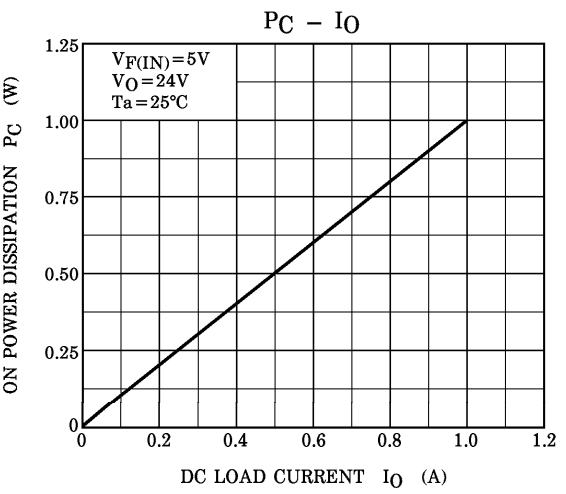
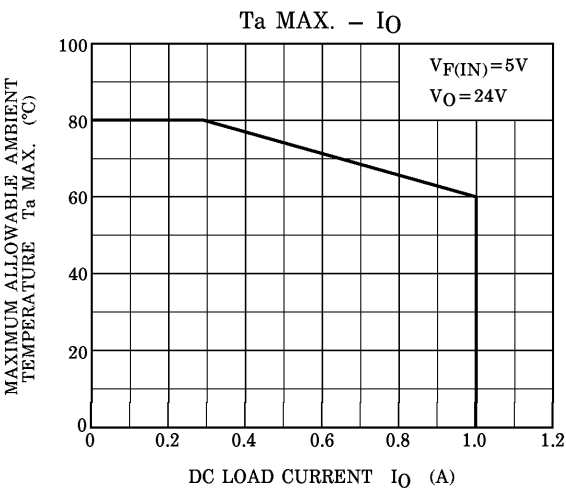


Fig.1 SWITCHING TIME TEST CONDITION



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