

TOSHIBA SOLID STATE I/O INTERFACE MODULE

TF1108

AC OUTPUT MODULE

TOSHIBA TF1108 is AC 100V Line Controlled I/O Interface Module and it includes the optical isolator.
Using this Module, you can design high reliability and compact system.

- R.M.S. On-State Current : $I_{T(RMS)}=1A$ (Max.)
- Nominal AC Line Voltage : $V_{AC}=70\sim140V$ AC
- Recommended Input Supply Voltage : $V_{CC}=5V$
- 1500V AC Optical Isolation
- Including Snubber Network
- Input is Compatible with TTL Logic
- Small Size and Light Weight

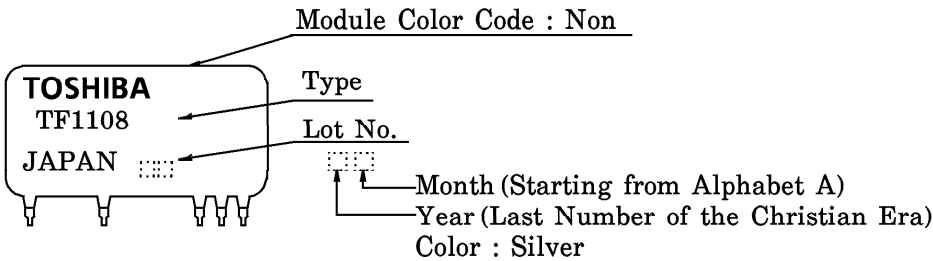
MAXIMUM RATINGS ($T_a = 25^{\circ}C$)
INPUT (CONTROL)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Control Input Voltage	$V_{F(IN)}$	6	V
Control Input Supply Voltage	V_{CC}	4.5~6	V

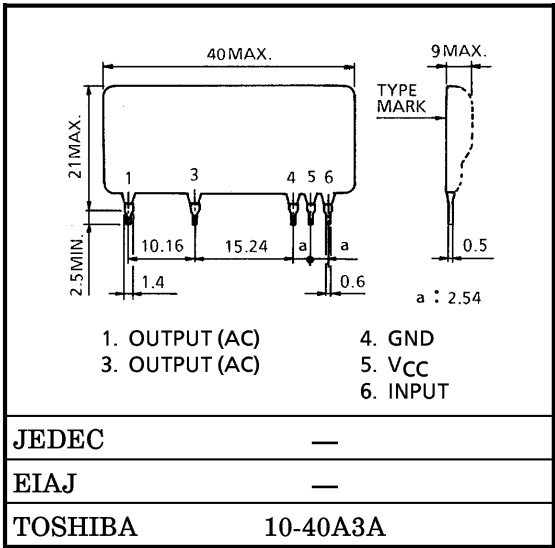
OUTPUT (AC LOAD)

Non-Repetitive Peak off-State Voltage	V_{DSM}	400	V
R.M.S. On-State Current	$I_{T(RMS)}$	1	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	12 (50Hz) 13 (60Hz)	A
Operating Frequency Range	f	45~65	Hz
Isolation Voltage (Input-Output) (AC)	BV_S / AC	1500 (1min)	V
Operating Temperature Range	T_{opr}	-20~80	$^{\circ}C$
Storage Temperature Range	T_{stg}	-20~80	$^{\circ}C$
Lead Soldering Temperature (10s)	T_{sol}	260	$^{\circ}C$

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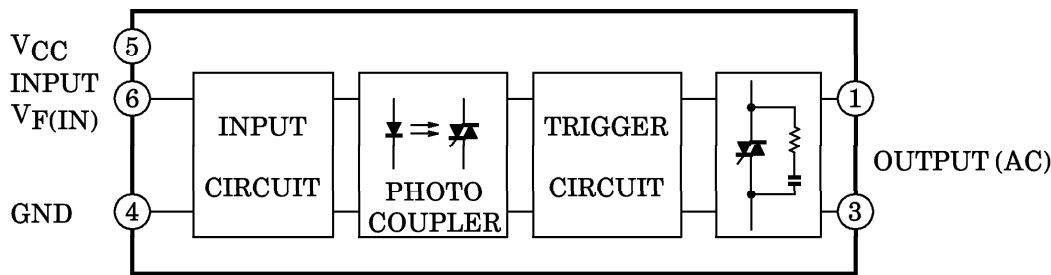


Unit in mm



Weight : 8g

BLOCK DIAGRAM



ELECTRICAL CHARACTERISTICS (Ta = 25°C, VCC = 5V)
INPUT (CONTROL)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Pick Up Current	I_{FT}	$V_{AC} = 100V$ Resistive Load ($R_L = 100\Omega$)	-0.6	-0.4	—	mA
Drop Out Current	I_{FD}		—	0.37	0.1	
Input Resistance	R_{IN}	—	—	4.1	—	k Ω

OUTPUT (AC LOAD)

Off-State Leakage Current	I_{OL}	$V_{AC} = 100V, f = 50Hz$	—	—	1	mA
Peak On-State Voltage	V_{TM}	$T_T(RMS) = 1A$	—	—	1.5	V
dv / dt (Off-State)	dv / dt	$V_{DSM} = 0.7 \times \text{Rated}$	30	—	—	V / μs
dv / dt (Commutating)	(dv / dt) c	$V_{DSM} = 0.7 \times \text{Rated}$ $T_T(RMS) = 1A$	2	—	—	V / μs
Turn-On Time	t_{on}	$V_{AC} = 100V$	—	—	1	ms
Turn-Off Time	t_{off}	Resistive Load ($R_L = 100\Omega$)	—	—	1 / 2	Cycle
Isolation Resistance	R_S	$V = 1kV, R.H = 40 \sim 60\%$	—	10^{10}	—	Ω

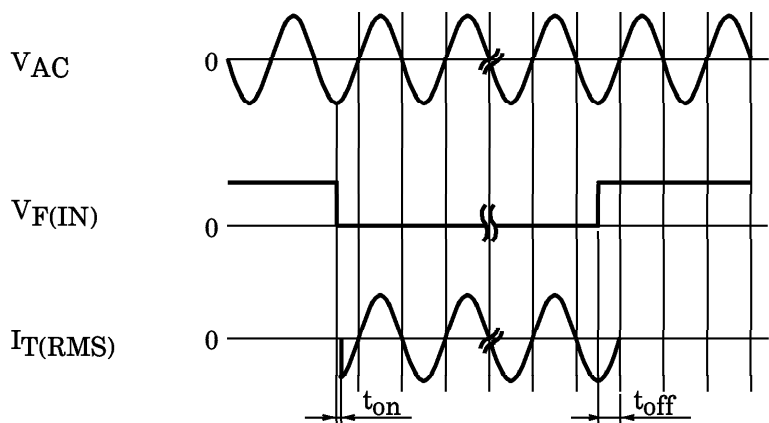
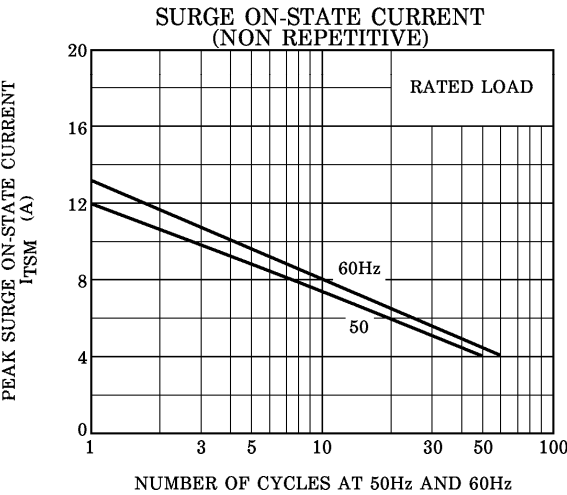
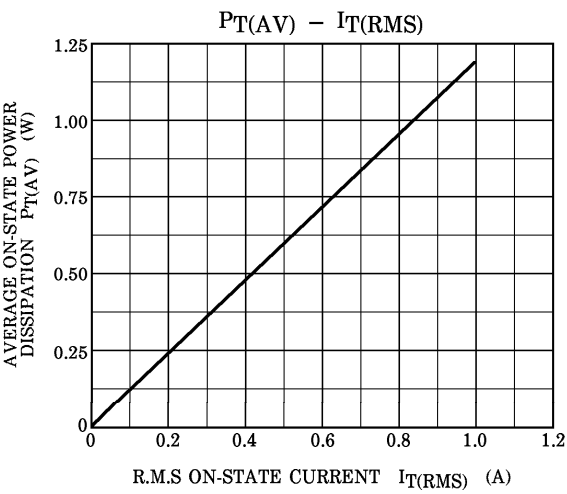
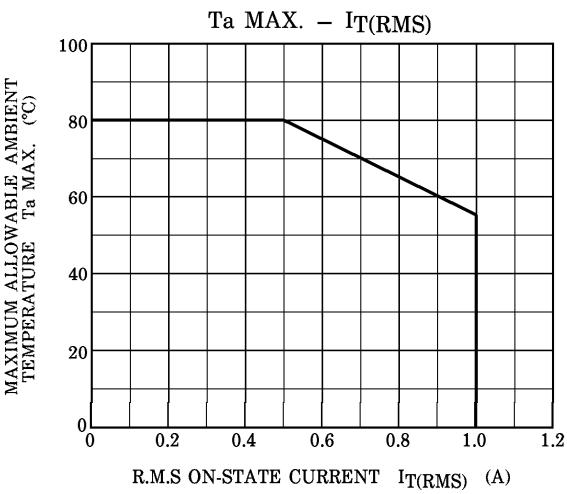


Fig.1 SWITCHING TIME TEST CONDITION



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