

TOSHIBA SOLID STATE I/O INTERFACE MODULE

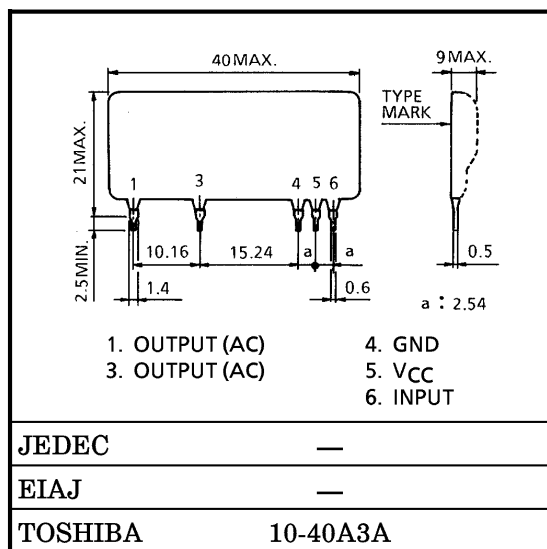
**TF1108**

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 :  $V_{AC}=70\sim 140V$  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

Unit in mm



Weight : 8g

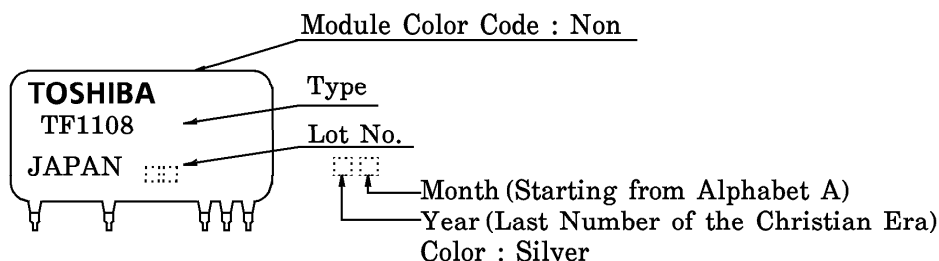
MAXIMUM RATINGS ( $T_a = 25^\circ C$ )  
INPUT (CONTROL)

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

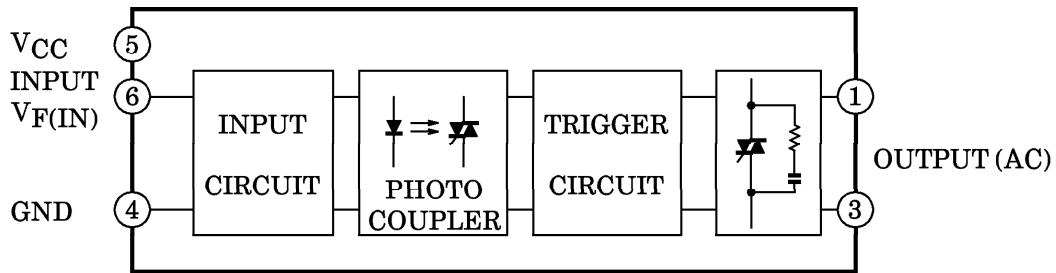
OUTPUT (AC LOAD)

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)	A
		13 (60Hz)	
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	$^\circ C$

MARK



BLOCK DIAGRAM



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

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

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 / $\mu s$
dv / dt (Commutating)	(dv / dt) c	$V_{DSM} = 0.7 \times \text{Rated}$ $T_T(RMS) = 1A$	2	—	—	V / $\mu s$
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	$R_S$	$V = 1kV, R.H = 40 \sim 60\%$	—	$10^{10}$	—	$\Omega$

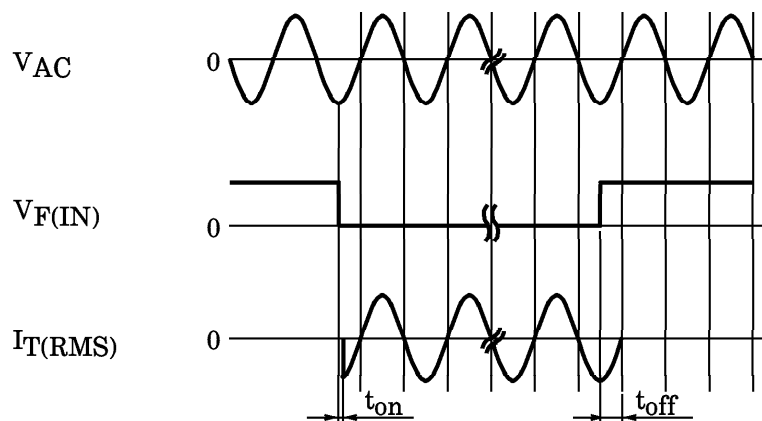
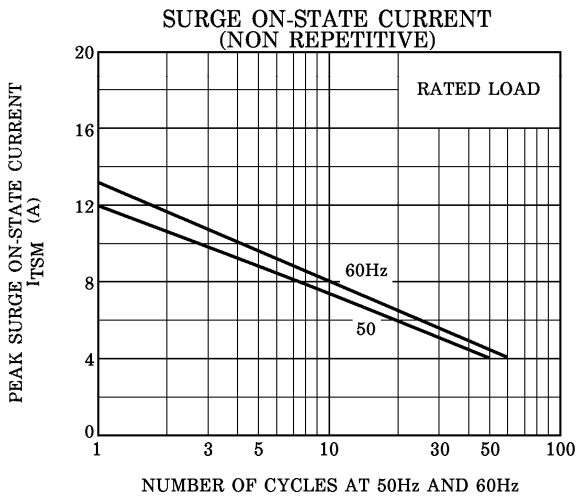
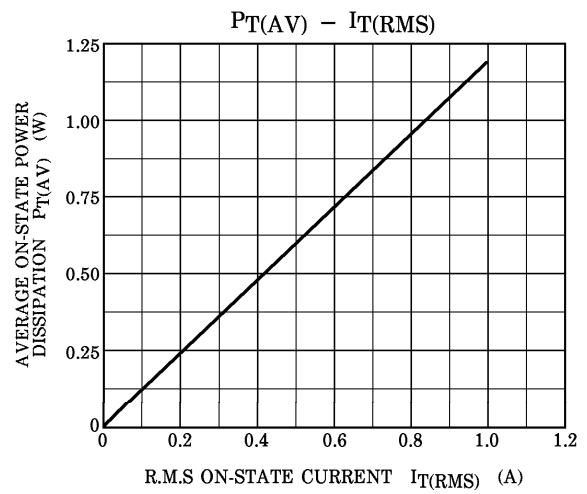
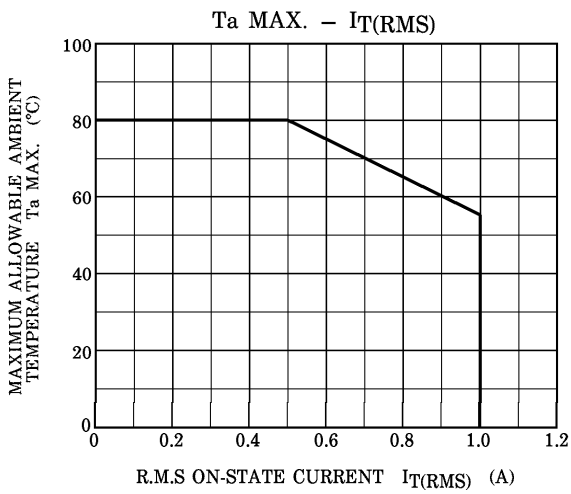


Fig.1 SWITCHING TIME TEST CONDITION



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