

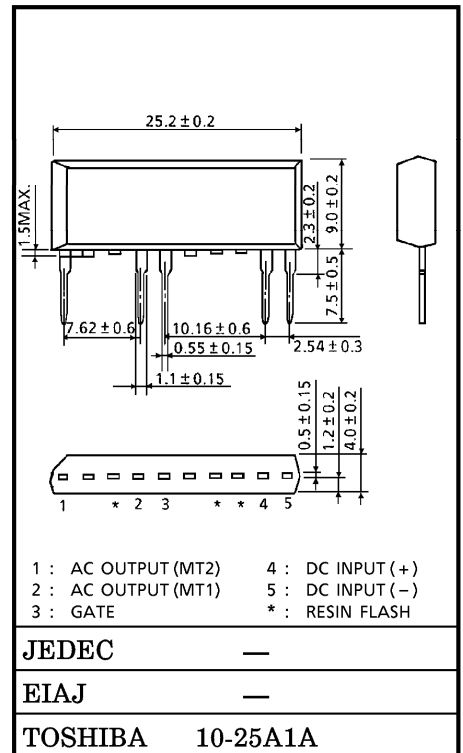
TENTATIVE-RESTRICTIVE DATA

TOSHIBA AC SWITCH
OPTICALLY ISOLATED AC SWITCH

TSA3100G, TSA3100J

- R.M.S. On-State Current : I_T (RMS) = 0.1~3A
- Repetitive Peak Off-State Voltage : V_{DRM} = 400, 600V
- Isolation Voltage between Input to Output : 3000VAC (t=1min.)
- Thickness of Inner Insulation Material : 0.8mm (Min.)
- Creepage Distances, Clearances for Insulation between Input and Output Side : 6mm (Min.)
- TTL drive is Available

Unit in mm

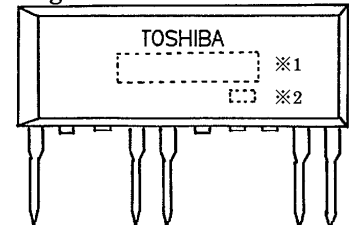


MAXIMUM RATINGS (Ta = 25°C)

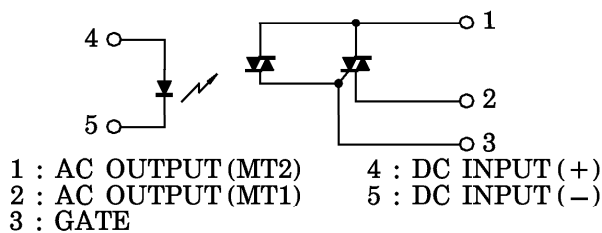
CHARACTERISTIC		SYMBOL	RATING	UNIT
INPUT	Control Input Current	I_F (IN)	50	mA
	Forward Current Derating (Ta ≥ 53°C)	$\Delta I_F / ^\circ C$	-0.7	mA / °C
	Peak Forward Current (100μs pulse, 100pps)	I_{FP}	1	A
	Reverse Voltage	V_R	5	V
OUTPUT	Repetitive Peak Off-State Voltage	TSA3100G	400	V
		TSA3100J	600	
	Nominal AC Line Voltage (Note 1)	TSA3100G	80~125	V
		TSA3100J	80~250	
	R.M.S On-State Current (Sine Waveform, R.M.S.)	I_T (RMS)	0.1~3	A
	Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	30 (50Hz)	A
33 (60Hz)				
I^2t Limit Value	I^2t	4.5	A ² s	
Operating Frequency Range	f	45~65	Hz	
Operating Temperature Range	T _{opr}	-40~100	°C	
Storage Temperature Range	T _{stg}	-40~100	°C	
Isolation Voltage (Input to Output) Note 2	BV _s	3000	V	

Weight : 2g

Marking



EQUIVALENT CIRCUIT



(The cutted pins near by Pin No.1 & No.3 is connecting in electrically with output terminal)

Note 1 : When the voltage larger than applied AC voltage is applied to the device such as 2 phase motor and others, please derating for this maximum rating value.

Note 2 : TEST CONDITION... AC, t=60s, RH ≤ 60%

Note 3 : Soldering of printed wiring board should be used under 260°C and 10 seconds.

NUMBER	SYMBOL		MARK	
※1	TYPE	TSA3100G	TYPE	TSA3100G
		TSA3100J		TSA3100J
※2	Lot Number		Example	
	<input type="checkbox"/> <input type="checkbox"/> ↑ Month (Starting from Alphabet A) ↑ Year (Last Number of the Christian era)			3A : January 1993 3B : February 1993 3L : December 1993

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
INPUT	Forward Voltage	V _F	I _F = 10mA	1.0	1.15	1.3	V	
	Reverse Current	I _R	V _R = 5V	—	—	10	μA	
	Capacitance	C _T	V _T = 0V, f = 1MHz	—	20	—	pF	
OUTPUT	Peak Off-State Current	I _{DRM}	V _{DRM} = Rated	—	—	10	μA	
	Peak On-State Voltage	V _{TM}	I _{TM} = 4.5A	—	—	1.5	V	
	Holding Current	I _H	V _D = 6V, Beginning Current = 1A	—	—	25	mA	
	Critical Rate of Rise of Off-State Voltage	dv / dt	V _{DRM} = Rated	—	2000	—	V / μs	
	Critical Rate of Rise of Commutating Voltage	(dv / dt) _c	V _D = 400V, -di / dt = 30A / ms	—	30	—	V / μs	
	Thermal Resistance	Junction to Lead	R _{th(j-ℓ)}	AC	—	—	20	°C / W
		Junction to Ambient	R _{th(j-a)}	AC	—	—	85	°C / W

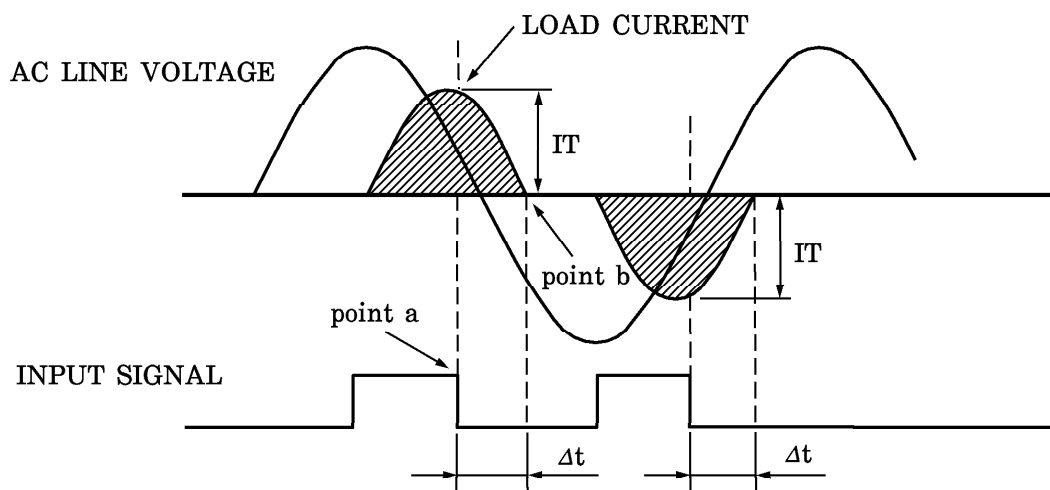
COUPLED ELECTRICAL CHARACTERISTICS (Ta = 25°C)

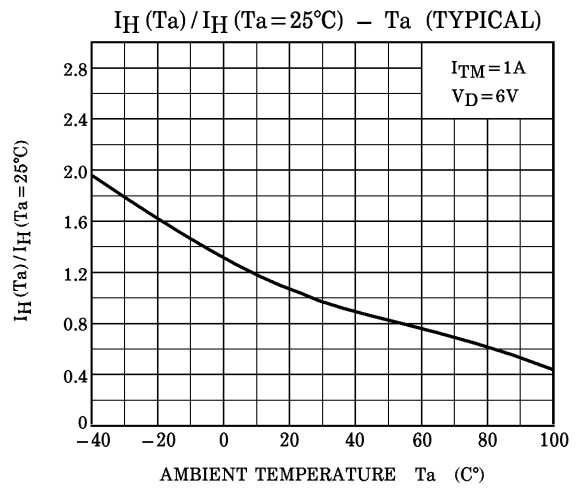
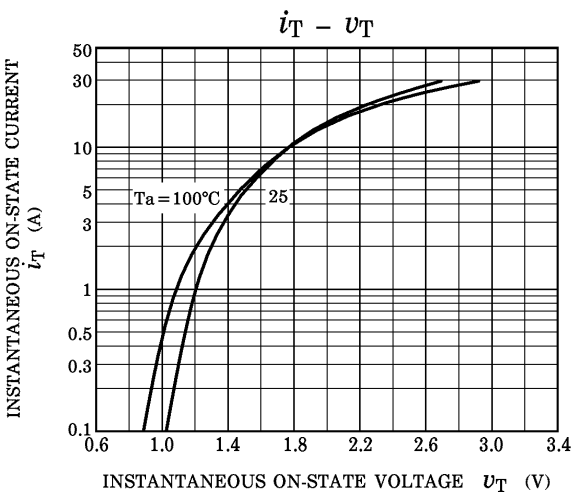
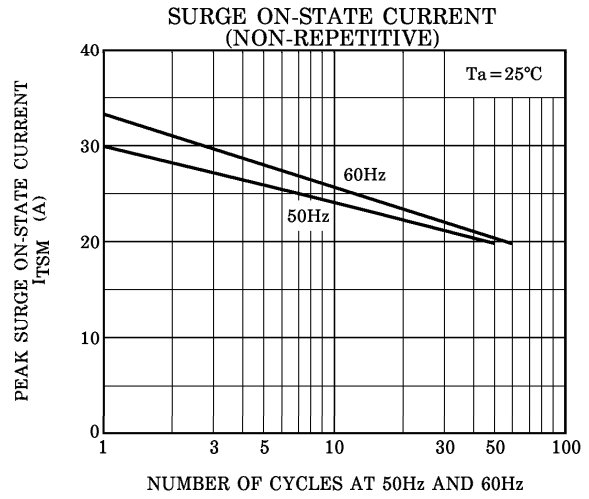
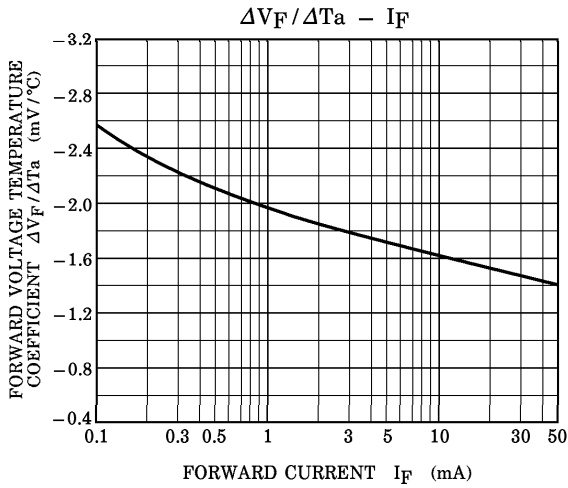
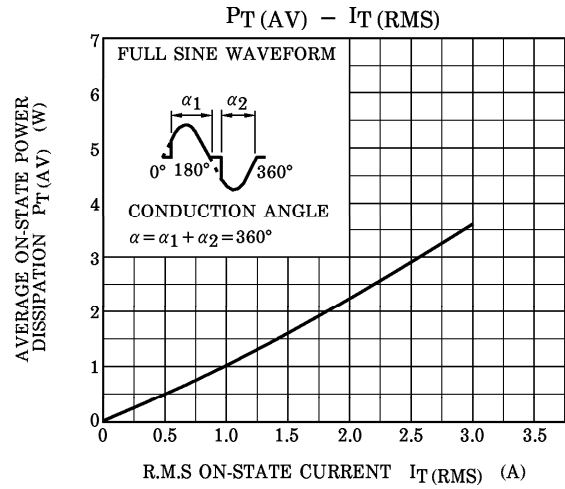
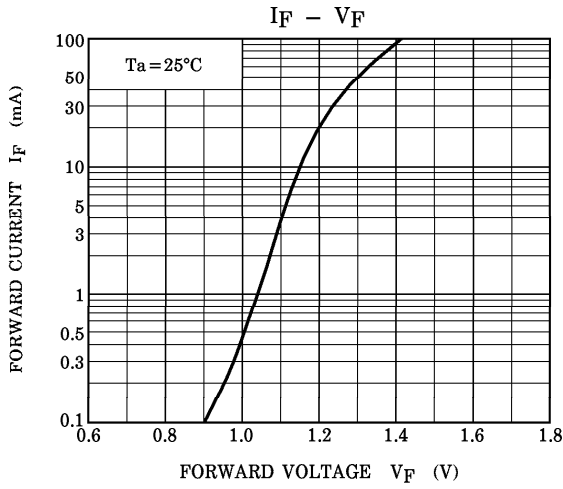
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Trigger LED Current	I _{FT}	V _D = 6V, R _L = 20Ω	—	—	10	mA
Capacitance (Input to output)	C _S	V _S = 0V, f = 1MHz	—	0.5	—	pF
Isolation Resistance	R _S	V = 500V, RH ≤ 60%	10 ⁹	—	—	Ω
Turn-off Time	t _{off}	OUTPUT : Sine Waveform	—	—	3 / 4	cycle

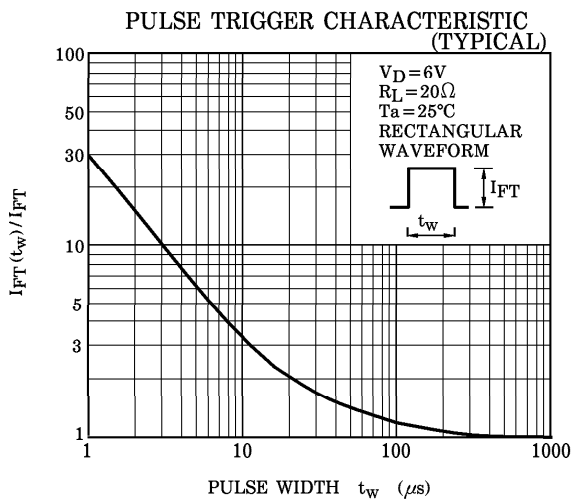
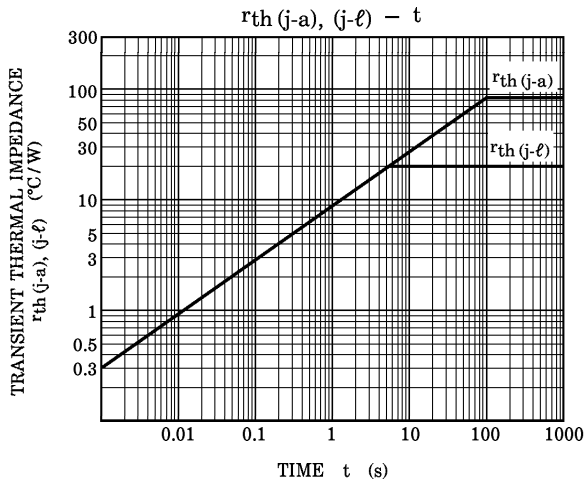
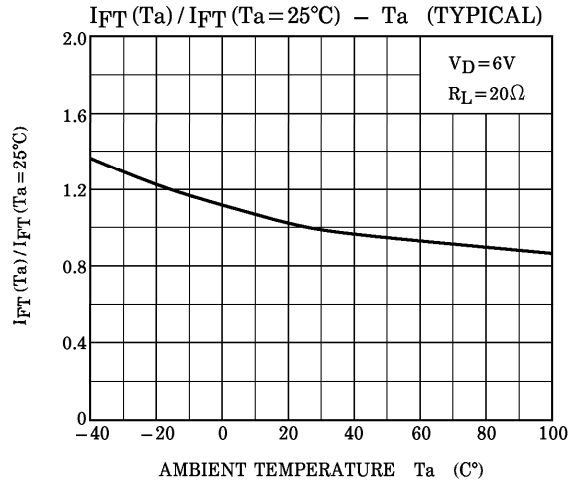
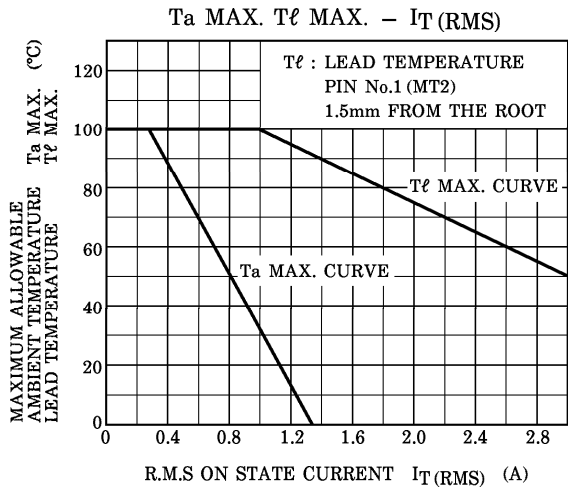
<REMARK>

PHASE CONTROL APPLICATION

In case of using in phase control application. Δt must be at least 1ms (Δt : The time starting from the end of INPUT SIGNAL "point a" to the point at which load current become ZERO "point b"). And, Load current " I_T " at "point a" must be at least double the maximum Holding Current (I_H) specification in each operating temperature.







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