TENTATIVE

TOSHIBA PHOTOCOUPLER GaAlAs IRED & PHOTO-TRIAC

TLP168J

TRIAC DRIVE
PROGRAMMABLE CONTROLLERS
AC-OUTPUT MODULE
SOLID STATE RELAY

The TOSHIBA MINI FLAT COUPLER TLP168J is a small outline coupler, suitable for surface mount assembly.

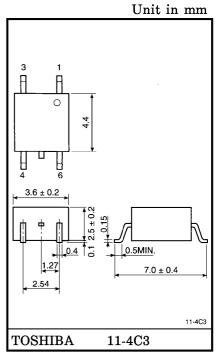
The TLP168J consists of a photo triac, optically coupled to a GaAlAs infrared emitting diode.

• Zero-Voltage Crossing Turn-on

Peak Off-State Voltage : 600V (MIN.)
Trigger LED Current : 3mA (MAX.)
On-State Current : 70mA (MAX.)
Isolation Voltage : 2500Vrms (MIN.)

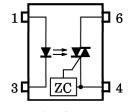
MAXIMUM RATINGS (Ta = 25°C)

	CHARACTERI	STIC	SYMBOL	RATING	UNIT	
	Forward Current		$I_{\mathbf{F}}$	20	mA	
	Forward Current I (Ta≥25°C)	$\Delta I_{\mathbf{F}}/{^{\circ}\mathbf{C}}$	-0.2	mA/°C		
LED	Peak Forward Current (100 µs pulse, 100 pps)		I_{FP}	1	A	
	Reverse Voltage		v_{R}	5	V	
	Junction Temperat	ure	$\mathrm{T_{j}}$	125	°C	
	Off-State Output Terminal Voltage		$v_{ m DRM}$	600	V	
	On-State RMS	Ta=25°C	T	70		
OR	Current	Ta=70°C	IT (RMS)	40	mA	
DETECTOR	On-State Current Derating (Ta≥25°C)		$\Delta I_{\mathrm{T}}/^{\circ}\mathrm{C}$	-0.67	mA/°C	
DEJ	Peak On-State Cur (100µs Pulse, 120p	$I_{ ext{TP}}$	2	A		
	Peak Nonrepetitive Current (PW=10m		I_{TSM}	1.2	A	
	Junction Temperat	$\mathrm{T_{j}}$	115	$^{\circ}\mathrm{C}$		
Sto	orage Temperature	Range	$\mathrm{T_{stg}}$	-55~125	°C	
Op	Operating Temperature Range		$\mathrm{T_{opr}}$	-40~100	°C	
Le	Lead Soldering Temperature (10s)		T_{sol}	260	°C	
	Isolation Voltage (AC, 1min., R.H. ≤ 60%) (Note)		$BV_{\mathbf{S}}$	2500	Vrms	



Weight: 0.09g

PIN CONFIGURATIONS



1 : ANODE 3 : CATHODE 4 : TERMINAL 1 6 : TERMINAL 2

(Note) Device considered a two terminal device: Pins 1 and 3 shorted together and pins 4 and 6 shorted together.

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RECOMMENDED OPERATING CONDITIONS

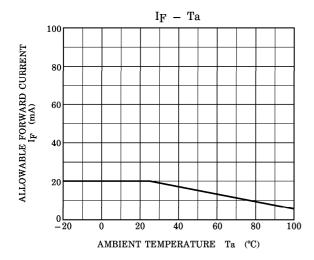
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	v_{AC}	_	1	240	Vac
Forward Current	${ m I_F}$	4.5	6	7.5	mA
Peak On-State Current	ITP	_	_	1	A
Operating Temperature	$T_{ m opr}$	-10	_	85	°C

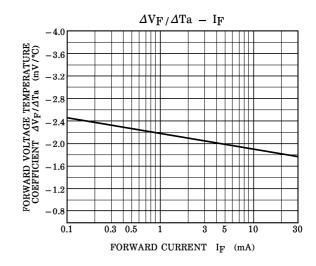
INDIVIDUAL ELECTRICAL CHARACTERISTICS (Ta = 25°C)

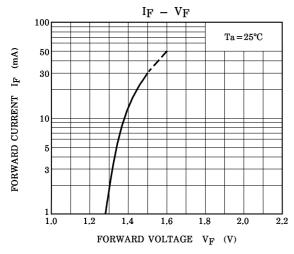
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	$ m V_{ m F}$	$I_{ m F} = 10 { m mA}$	1.2	1.4	1.7	V
	Reverse Current	$I_{\mathbf{R}}$	$V_R = 3V$	I	ı	10	μ A
	Capacitance	C_{T}	V=0, f=1MHz	ı	30	-	рF
OR	Peak Off-State Current	${ m I}_{ m DRM}$	$V_{DRM} = 600V$	1	10	1000	nA
	Peak On-State Voltage	$ m V_{TM}$	$I_{TM} = 70 \text{mA}$	_	1.7	2.8	V
CT(Holding Current	${ m I_{H}}$	_	_	0.6	_	mA
DETE	Critical Rate of Rise of Off- State Voltage	dv/dt	V _{in} =240Vrms, Ta=85°C	200	500	_	V/μ s
	Critical Rate of Rise of Commutating Voltage	dv / dt (c)	$V_{in} = 60 \text{Vrms},$ $I_T = 15 \text{mArms}$		0.2	_	V/μs

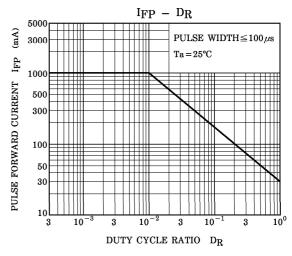
COUPLED ELECTRICAL CHARACTERISTICS (Ta = 25°C)

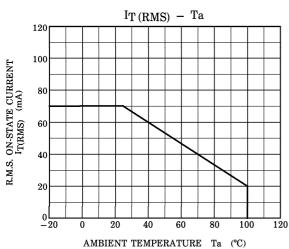
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Trigger LED Current	$I_{ ext{FT}}$	$V_{\mathrm{T}}=6V$	_	_	3	mA
Inhibit Voltage	$v_{ m IH}$	I _F =Rated I _F T	_	_	50	V
Leakage in Inhibited State	${ m I}_{ m IH}$	$I_F = Rated I_{FT}$ $V_T = Rated V_{DRM}$	_	200	600	μ A
Capacitance (Input to Output)	$C_{\mathbf{S}}$	$V_S=0$, $f=1MHz$	_	0.8	_	pF
Isolation Resistance	$R_{\mathbf{S}}$	$V_S = 500V, R.H. \le 60\%$	5×10^{10}	10^{14}	_	Ω
		AC, 1 minute	2500	_	_	3.7
Isolation Voltage	BV_{S}	AC, 1 second, in oil	_	5000	_	Vrms
		DC, 1 minute, in oil	_	5000	_	Vdc



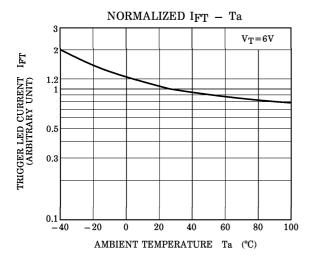


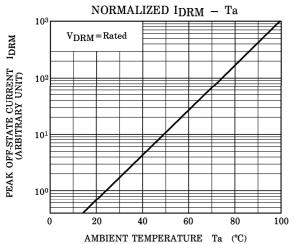


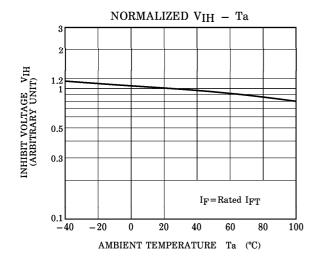


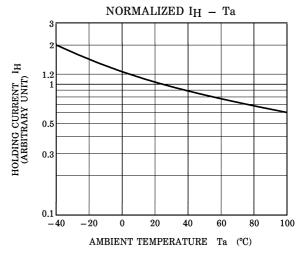


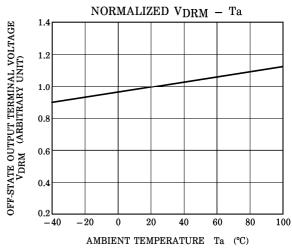
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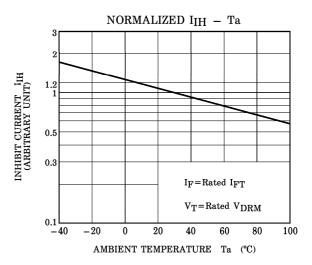












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