

TOSHIBA SOLID STATE GTR DRIVER MODULE

TF1204

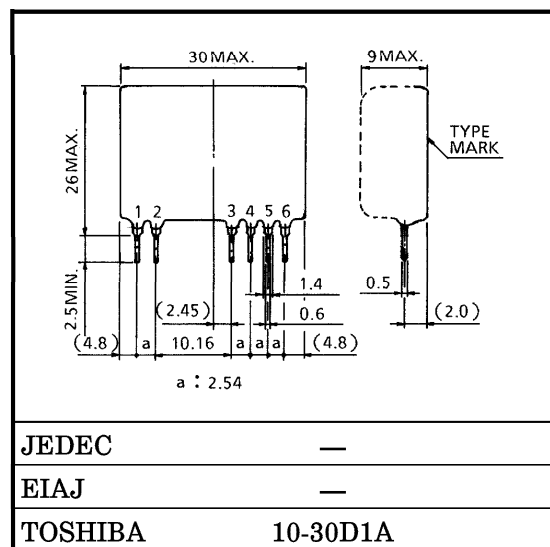
GTR DRIVER

TOSHIBA TF1204 is the GTR driver designed for use with TOSHIBA Giant Transistor Module and it includes the optical isolator and GTR driver circuit.

Using this driver, you can design high reliability and compact system.

- 2000V_{RMS} Optical Isolation
- Logic Compatible Input
- High Speed Switching Response
: $t_{pLH}=3\mu s$, $t_{pHL}=4\mu s$ (Typ.)
- Small Size and Light Weight

Unit in mm

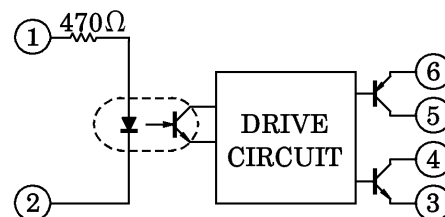


Weight : 8g

MAXIMUM RATINGS (Ta = 25°C)

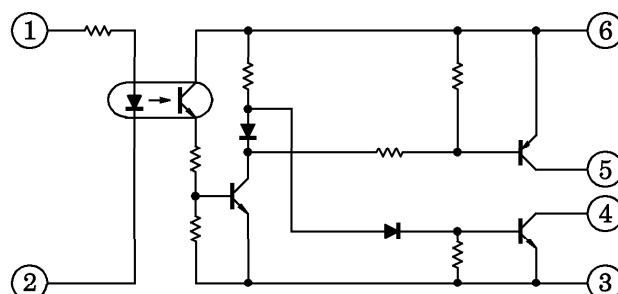
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V _{CC}	6	V
	V _{EE}	−4	V
Input Voltage	V _{IN}	5.5	V
Reverse Input Voltage	V _{RIN}	5	V
High Level Output Current	I _{OH}	−1	A
Low Level Peak Output Current	I _{OLP}	3 (10μs)	A
Isolation (Input-Output)	BV _S / AC	2000 (1min)	V
Operating Frequency	f	5	kHz
Operating Temperature	T _{opr}	−20~70	°C
Storage Temperature	T _{stg}	−20~100	°C

BLOCK DIAGRAM



1. INPUT (+)
2. INPUT (-)
3. OUTPUT 2 (-) [V_{EE}]
4. OUTPUT 2 (+)
5. OUTPUT 1 (-)
6. OUTPUT 1 (+) [V_{CC}]

CIRCUIT DIAGRAM



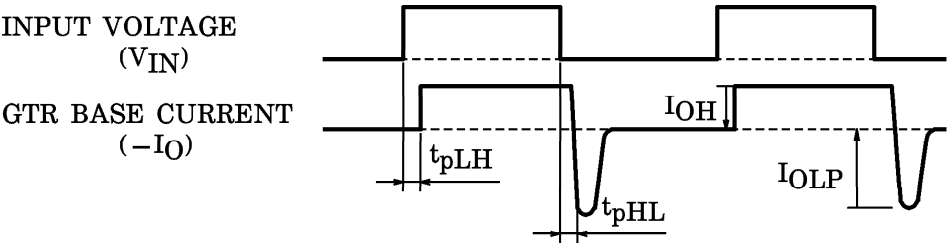
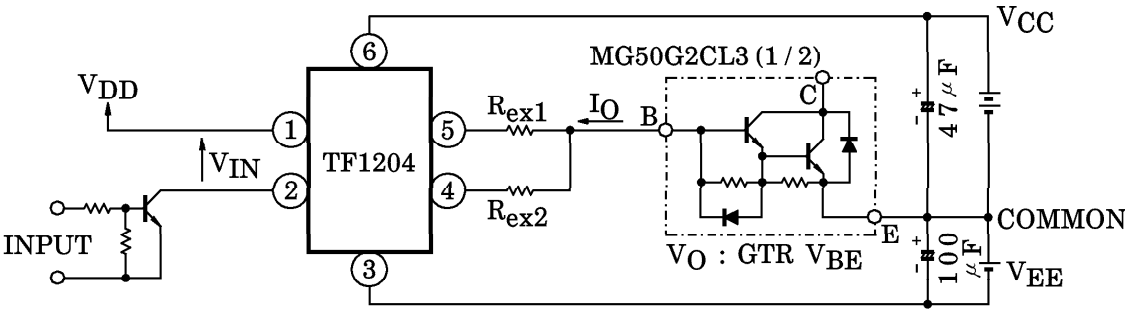
RECOMMENDED OPERATING CONDITIONS (Ta = - 10~50°C)

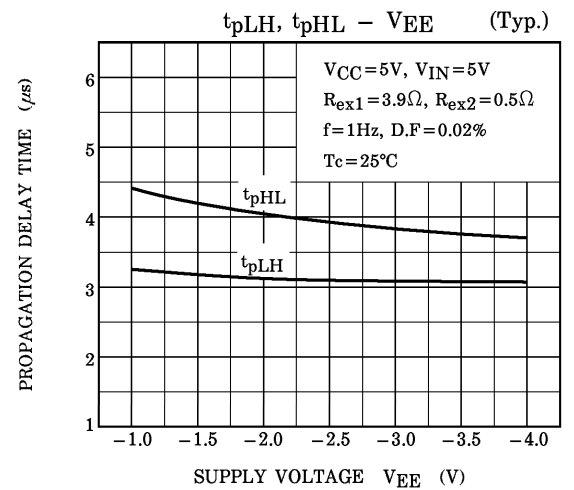
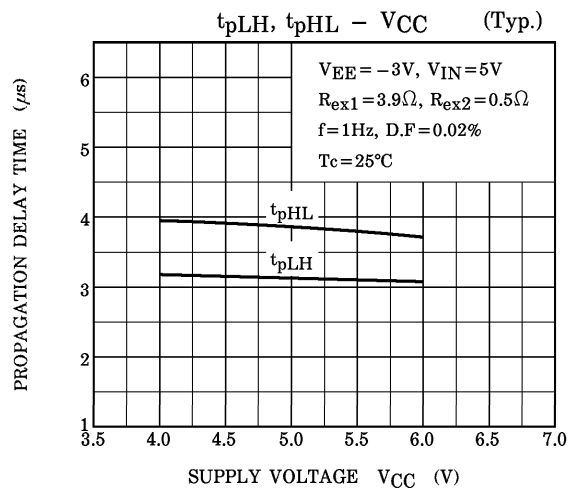
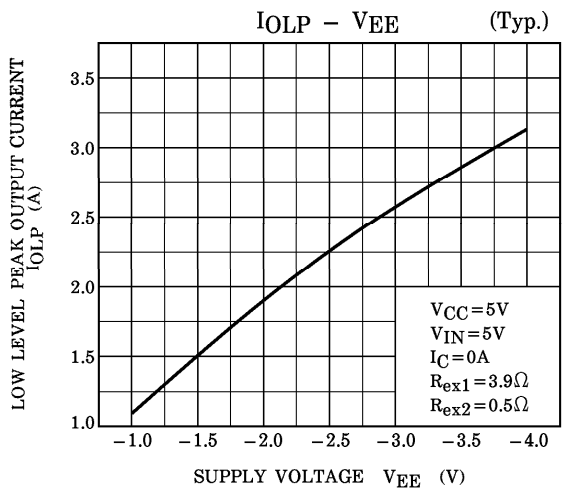
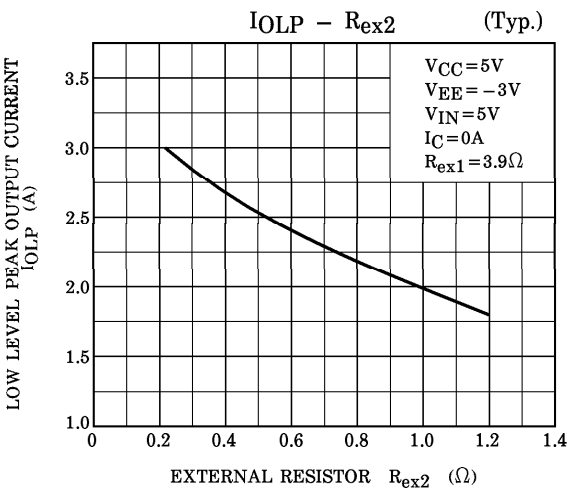
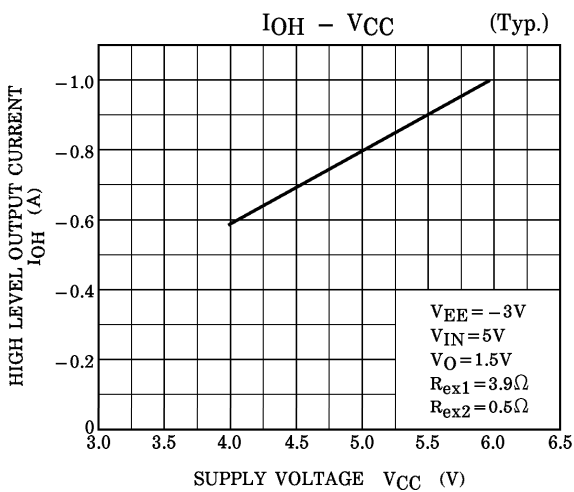
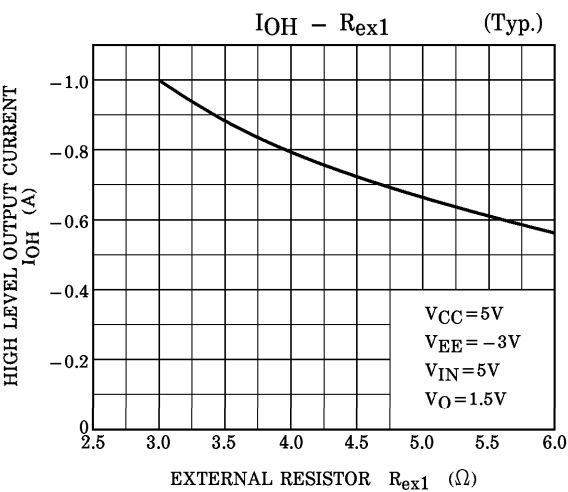
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	VCC	—	4.5	5.0	5.5	V
	VEE	—	-2.5	-3.0	-3.5	V
High Level Input Voltage	VIH	—	—	5	—	V
External Resistor	Rex1	—	—	3.9	—	Ω
	Rex2	—	—	0.5	—	Ω
Operating Frequency	f	—	—	2	—	kHz

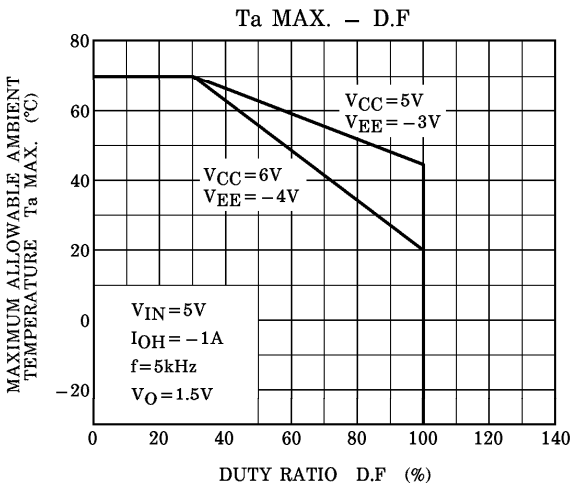
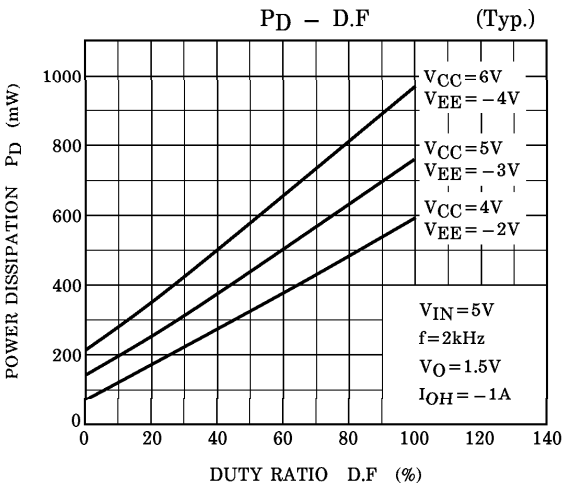
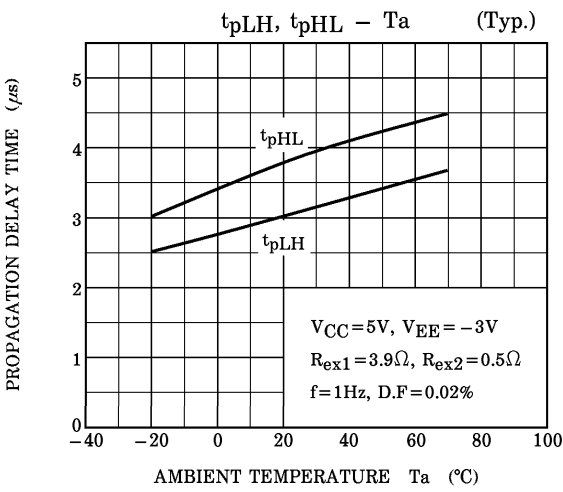
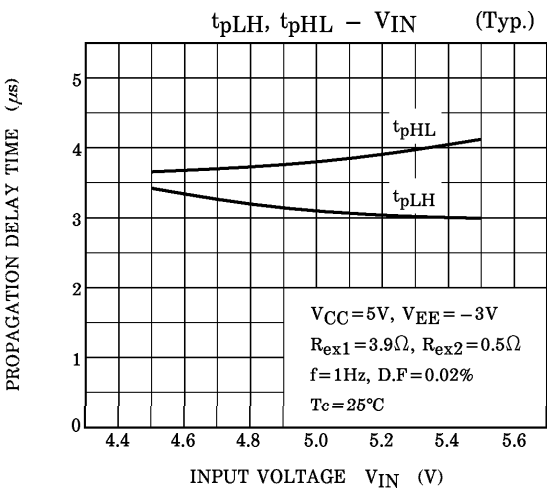
ELECTRICAL CHARACTERISTICS (Ta = 25°C, VCC = 5V, VEE = -3V, Rex1 = 3Ω, Rex2 = 0.22Ω)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Current	IIN	VIN = 5V	7	8	9	mA
High Level Input Voltage	VIH	IOH = -1A	—	2	4.5	V
Low Level Input Voltage	VIL	IOLP = 3A	1.0	2	—	V
High Level Output Current	IOH	VIN = 5V, VO = 1.5V	—	-1	—	A
Low Level Peak Output Current	IOLP	VIN = 0V	—	3	—	A
(Low→High) Propagation Delay Time	tpLH	VIN = 0→5V	—	3	10	μs
(High→Low) Propagation Delay Time	tpHL	VIN = 5→0V	—	4	10	μs
Power Dissipation	PD	f = 2kHz, D.f = 50%	—	440	—	mW

TEST CIRCUIT







MG50G2CL3 BASE DRIVE CIRCUIT

[illegible][illegible]

(Calculating Formula)

$$R_D = \frac{V_{DD} - V_F}{I_{IN}} - R_{IN}$$

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