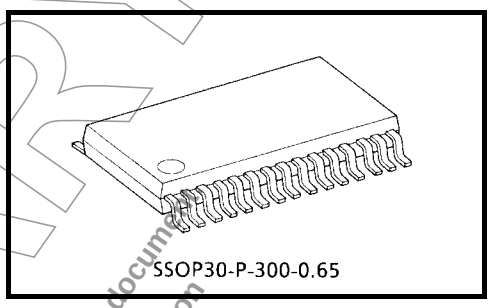
TOSHIBA CMOS Integrated Circuit Silicon Monolithic

TC7600FNG

3-Phase Full-Wave Sensorless Vector PWM Brushless Motor Controller

The TC7600FNG is designed for three-phase brushless DC motors.



Weight: 0.17 g (typ.)

Features

- Vector control drive (closed loop speed control for peak operating efficiency, sine-wave PWM control)
- Sensorless motor (supporting the three shunts method)
- Built-in triangular-wave generator
  Carrier frequency: 17 kHz (max)
- Selectable dead time (0 to 2 μs)
- Operating power supply voltage range: V_{CC} = 4.5 to 5.5 V
- High accuracy oscillator with 1 external resistor
- Low voltage directive (LVD)
- Power-on reset (POR)

The following conditions apply to solderability:
About solderability, following conditions were confirmed
(1)Use of Sn-37Pb solder Bath
·solder bath temperature: 230℃
·dipping time: 5 seconds
·the number of times: once
·use of R-type flux
(2)Use of Sn-3.0Ag-0.5Cu solder Bath
·solder bath temperature: 245℃
·dipping time: 5 seconds
·the number of times: once
·use of R-type flux

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Power supply voltage	V_{CC}	6.0	V
Input voltage	V_{IN}	−0.3 to V_{CC}	V
Turn-on signal output current	I_{OUT}	±2	mA
Power dissipation	P_D	1.1 (Note 1)	W
Operating temperature	T_{opr}	−30 to 105 (Note 2)	°C
Storage temperature	T_{stg}	−55 to 150	

Note 1: When mounted on a universal board (50 × 50 × 1.6 mm) (Cu 40%)

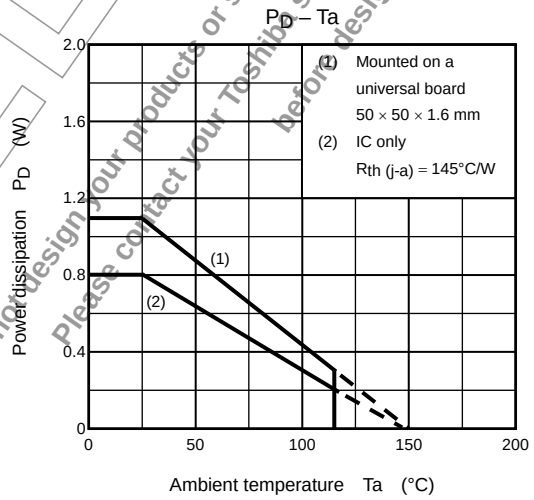
Note 2: The operating temperature range depends on the P_D - Ta characteristics.

ICs must not be exposed to conditions beyond their “Absolute Maximum Ratings” even momentarily. Otherwise, ICs may be damaged, destroyed or even ignite, in which case their surroundings may also be impaired or destroyed. System designs should therefore be reviewed to ensure that the Absolute Maximum Ratings will not be exceeded under any circumstances. Functional operation should be limited to conditions within the “Operating Ranges.”

Operating Ranges (Ta = 25°C)

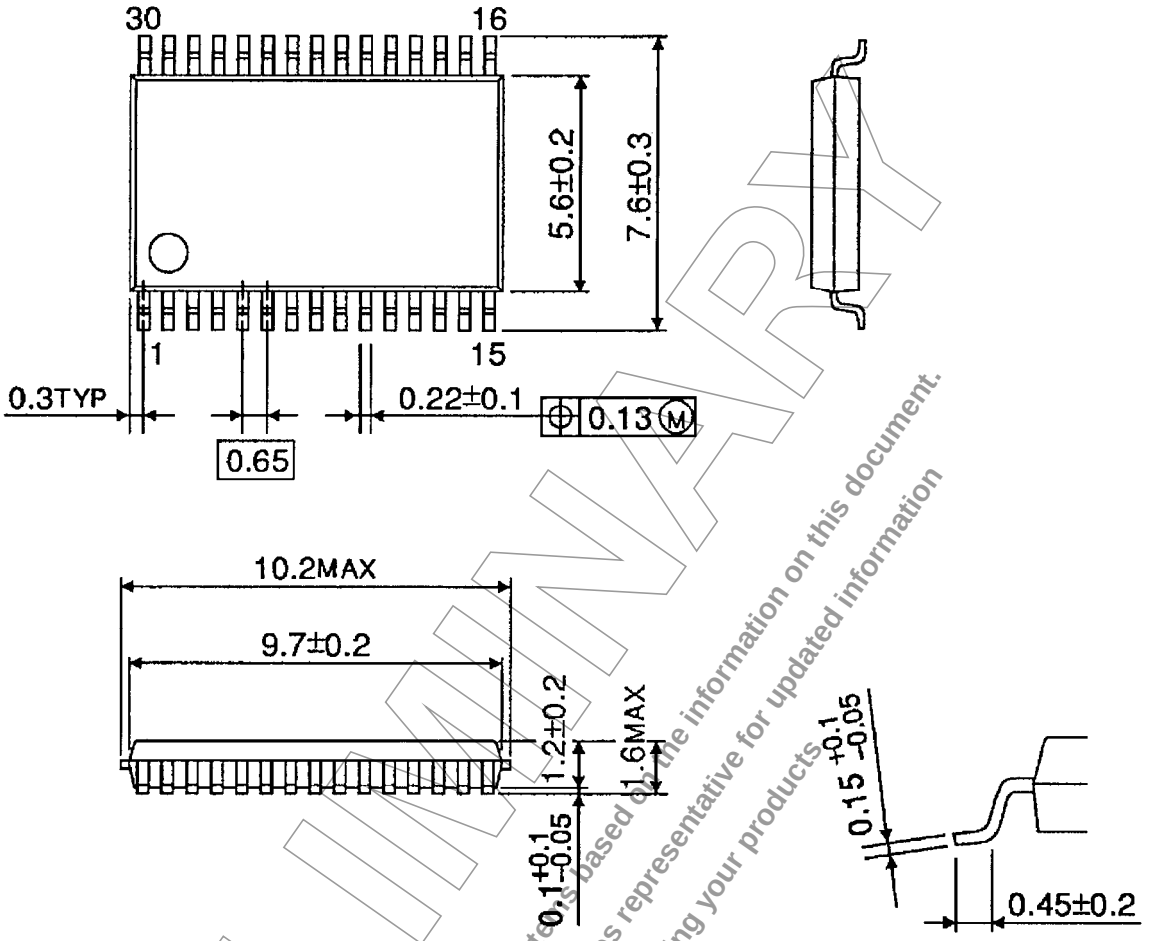
Characteristics	Symbol	Min	Typ.	Max	Unit
Power supply voltage range	V_{CC}	4.5	5.0	5.5	V
Switching frequency range	Fsw	14	17	18	kHz

Package Power Dissipation



Package Dimensions

SSOP30-P-300-0.65 Unit : mm



Weight: 0.17 g (typ.)

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