

T2N7002BK

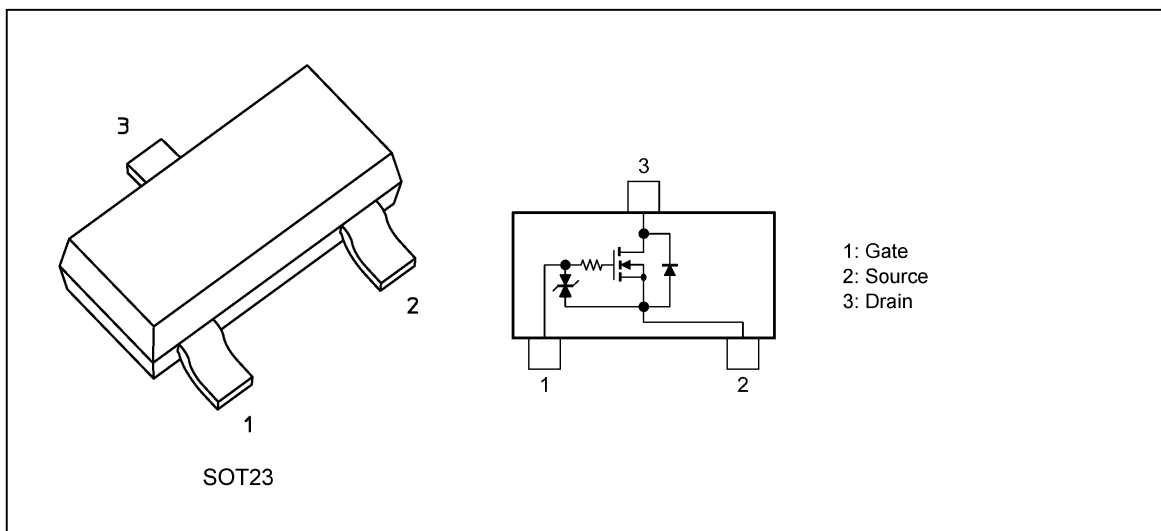
1. Applications

- High-Speed Switching

2. Features

- (1) ESD(HBM) level 2 kV
- (2) Low drain-source on-resistance
 $R_{DS(ON)} = 1.05 \, \Omega$ (typ.) (@ $V_{GS} = 10 \, V$)
 $R_{DS(ON)} = 1.15 \, \Omega$ (typ.) (@ $V_{GS} = 5 \, V$)
 $R_{DS(ON)} = 1.2 \, \Omega$ (typ.) (@ $V_{GS} = 4.5 \, V$)

3. Packaging and Internal Circuit



Start of commercial production

2015-05

4. Absolute Maximum Ratings (Note) (Unless otherwise specified, $T_a = 25\text{ }^{\circ}\text{C}$)

Characteristics	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	60	V
Gate-source voltage	V_{GS}	± 20	
Drain current (DC) (Note 1)	I_D	400	mA
Drain current (pulsed) (Note 1), (Note 2)	I_{DP}	1200	
Power dissipation (Note 3)	P_D	320	mW
Power dissipation (Note 4)		1000	
Channel temperature	T_{ch}	150	$^{\circ}\text{C}$
Storage temperature	T_{stg}	-55 to 150	

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Note 1: Ensure that the channel temperature does not exceed $150\text{ }^{\circ}\text{C}$.

Note 2: Repetitive rating; pulse width limited by maximum channel temperature.

pulse width $\leq 10\text{ }\mu\text{s}$, Duty $\leq 1\%$

Note 3: Device mounted on a $25.4\text{ mm} \times 25.4\text{ mm} \times 1.6\text{ mm}$ FR-4 glass epoxy board (Cu pad: $0.42\text{ mm}^2 \times 3$)

Note 4: Device mounted on a $25.4\text{ mm} \times 25.4\text{ mm} \times 1.6\text{ mm}$ FR-4 glass epoxy board (Cu pad: 645 mm^2)

Note: This transistor is sensitive to electrostatic discharge and should be handled with care.

Note: The MOSFETs in this device are sensitive to electrostatic discharge. When handling this device, the worktables, operators, soldering irons and other objects should be protected against anti-static discharge.

Note: The channel-to-ambient thermal resistance, $R_{th(ch-a)}$, and the drain power dissipation, P_D , vary according to the board material, board area, board thickness and pad area. When using this device, be sure to take heat dissipation fully into account.