

HN2S04FU

High-Speed Switching Application

- The HN2S04FU consists of three separate diodes.
- Low forward voltage: $V_F(3) = 0.36V$ (typ.)
- Low reverse current: $I_R = 50 \mu A$ (max)
- Small total capacitance: $C_T = 46 pF$ (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Maximum (peak) reverse Voltage	V_{RM}	25	V
Reverse voltage	V_R	20	V
Maximum (peak) forward current	I_{FM}	450 *	mA
Average forward current	I_O	200 *	mA
Surge current (10 ms)	I_{FSM}	1 *	A
Power dissipation	P	200 **	mW
Junction temperature	T_j	125	°C
Storage temperature range	T_{stg}	-55 to 125	°C
Operating temperature range	T_{opr}	-40 to 100	°C

*: Per one diode.

When more than one diode is used, the surge current rating is reduced to 75% of I_{FSM} .

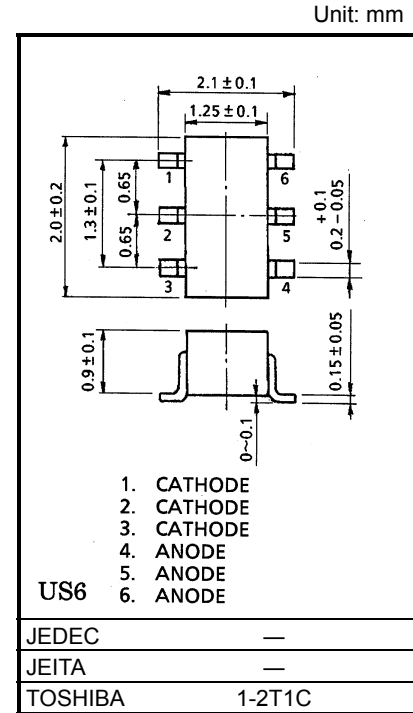
** : Total rating

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).

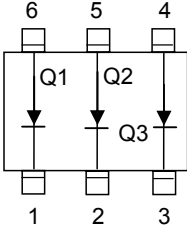
Electrical Characteristics (Q1, Q2, Q3 Common, Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_F(1)$	$I_F = 1 mA$	—	0.16	—	V
	$V_F(2)$	$I_F = 10 mA$	—	0.22	—	
	$V_F(3)$	$I_F = 200 mA$	—	0.36	0.42	
Reverse current	I_R	$V_R = 20 V$	—	—	50	μA
Total capacitance	C_T	$V_R = 0, f = 1MHz$	—	46	—	pF

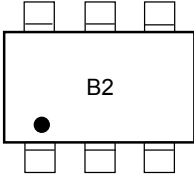


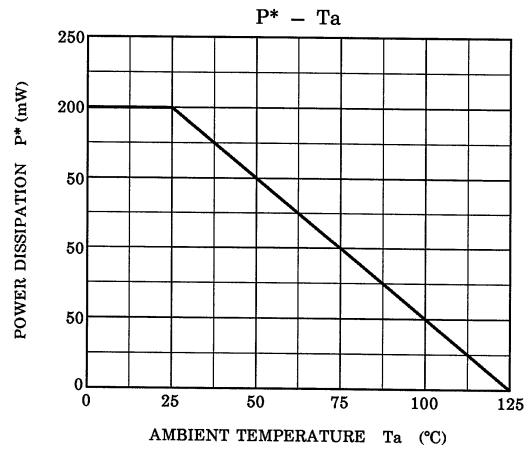
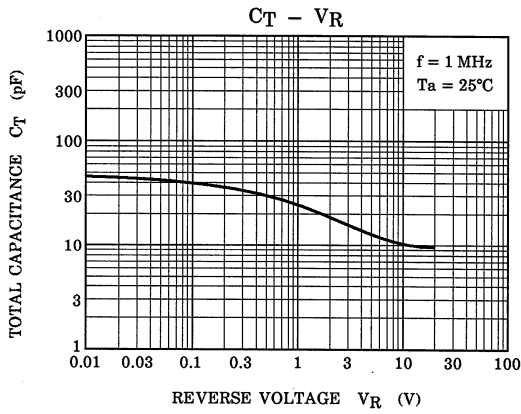
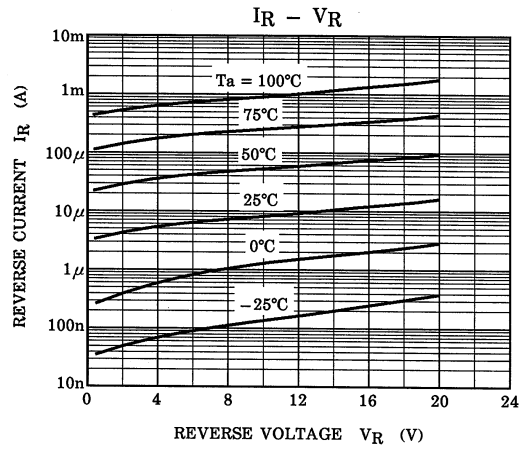
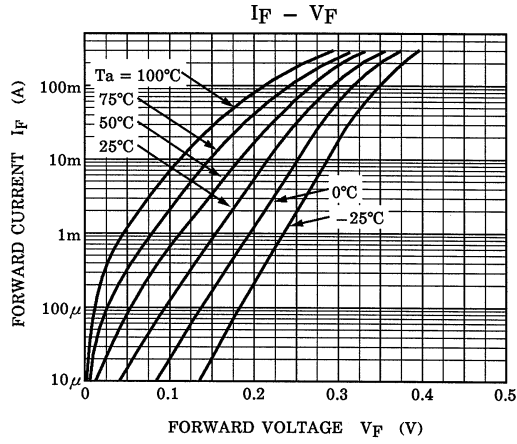
Weight: 0.0062g(typ.)

Pin Assignment (Top View)



Marking





* : Total Rating

RESTRICTIONS ON PRODUCT USE

20070701-EN

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- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc.
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