

TOSHIBA DIODE SILICON EPITAXIAL PLANAR TYPE

HN1D03FU

ULTRA HIGH SPEED SWITCHING APPLICATION.

Unit in mm

- Built in Anode Common and Cathode Common.

Unit 1

- Low Forward Voltage Q1, Q2 : $V_F = 0.90V$ (Typ.)
- Fast Reverse Recovery Time Q1, Q2 : $t_{rr} = 1.6ns$ (Typ.)
- Small Total Capacitance Q1, Q2 : $C_T = 0.9pF$ (Typ.)

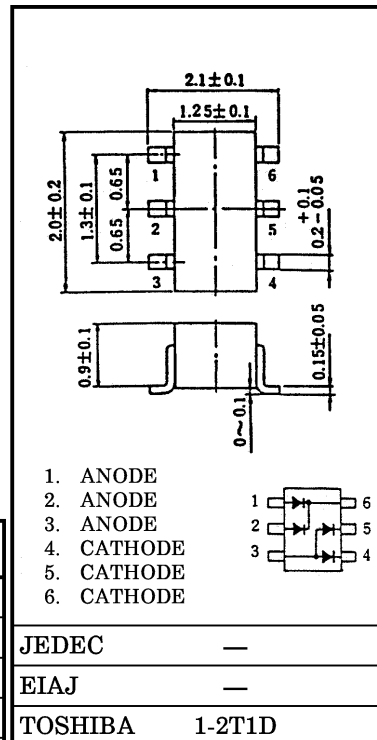
Unit 2

- Low Forward Voltage Q3, Q4 : $V_F = 0.92$ (Typ.)
- Fast Reverse Recovery Time Q3, Q4 : $t_{rr} = 1.6ns$ (Typ.)
- Small Total Capacitance Q3, Q4 : $C_T = 2.2pF$ (Typ.)

Unit 1, Unit 2 COMMON MAXIMUM RATINGS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Maximum (Peak) Reverse Voltage	V_{RM}	85	V
Reverse Voltage	V_R	80	V
Maximum (Peak) Forward Current	I_{FM}	240*	mA
Average Forward Current	I_O	80*	mA
Surge Current (10ms)	I_{FSM}	1*	A
Power Dissipation	P	200	mW
Junction Temperature	T_j	125	$^\circ C$
Storage Temperature	T_{stg}	-55~125	$^\circ C$

* : This is the Maximum Ratings of single diode (Q1 or Q2 or Q3 or Q4) . In the case of using Unit 1 and Unit 2 independently or simultaneously, the Maximum Ratings per diode is 75% of the single diode one.



Marking

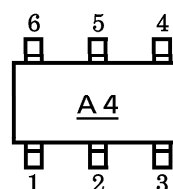
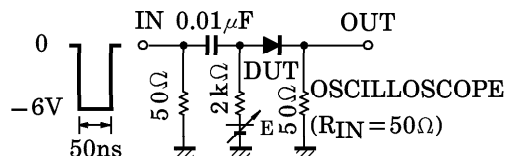


Fig. 1 REVERSE RECOVERY TIME (t_{rr}) TEST CIRUIT

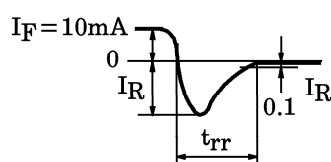
INPUT WAVEFORM



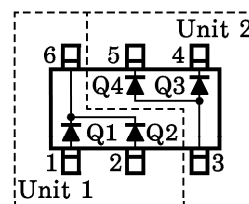
PULSE GENERATOR

($R_{OUT} = 50\Omega$)

OUTPUT WAVEFORM



PIN ASSIGNMENT (TOP VIEW)



961001EAA2

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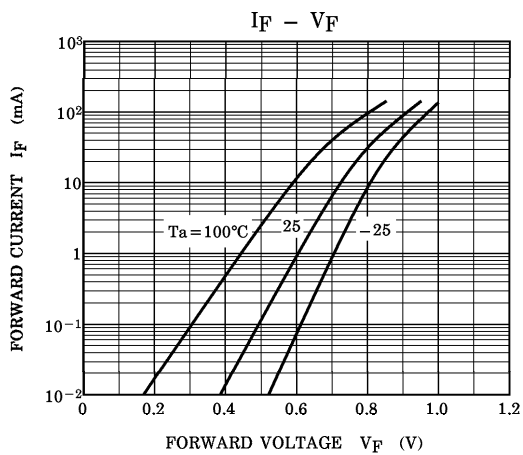
Unit 1 ELECTRICAL CHARACTERISTICS (Q1, Q2 COMMON) (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	V _F (1)	I _F = 1mA	—	0.60	—	V
	V _F (2)	I _F = 10mA	—	0.72	—	
	V _F (3)	I _F = 100mA	—	0.90	1.20	
Reverse Current	I _R (1)	V _R = 30V	—	—	0.10	μA
	I _R (2)	V _R = 80V	—	—	0.50	
Total Capacitance	C _T	V _R = 0, f = 1MHz	—	0.90	3.0	pF
Reverse Recovery Time	t _{rr}	I _F = 10mA (Fig. 1)	—	1.60	4.0	ns

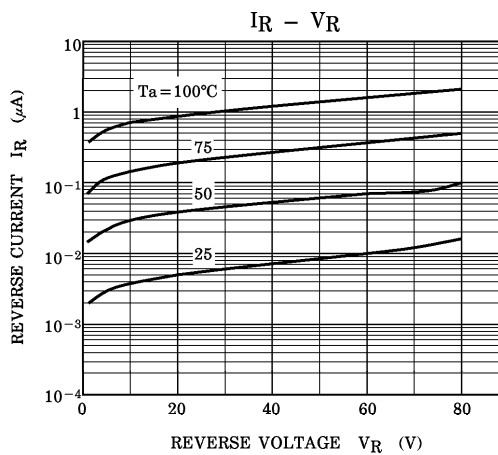
Unit 2 ELECTRICAL CHARACTERISTICS (Q3, Q4 COMMON) (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	V _F (1)	I _F = 1mA	—	0.61	—	V
	V _F (2)	I _F = 10mA	—	0.74	—	
	V _F (3)	I _F = 100mA	—	0.92	1.20	
Reverse Current	I _R (1)	V _R = 30V	—	—	0.10	μA
	I _R (2)	V _R = 80V	—	—	0.50	
Total Capacitance	C _T	V _R = 0, f = 1MHz	—	2.20	4.0	pF
Reverse Recovery Time	t _{rr}	I _F = 10mA (Fig. 1)	—	1.60	4.0	ns

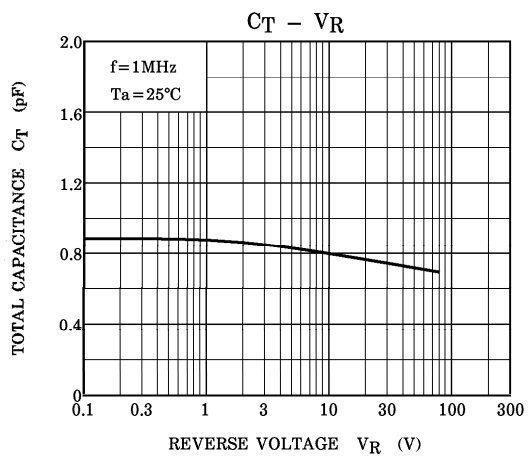
Unit 1 (Q1, Q2 COMMON)



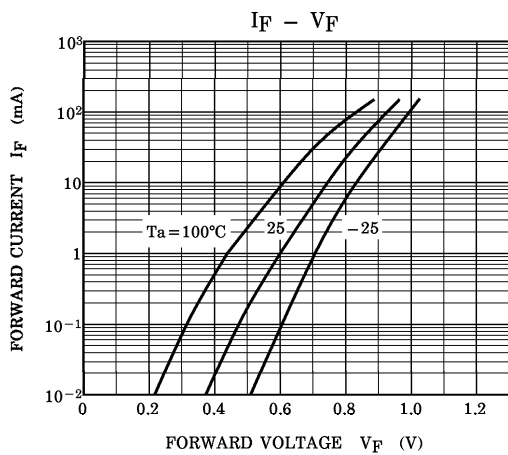
Unit 1 (Q1, Q2 COMMON)



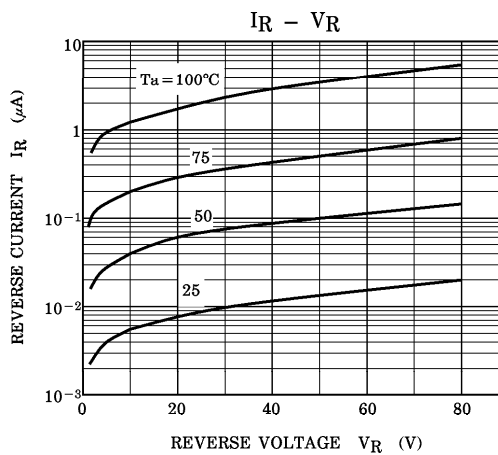
Unit 1 (Q1, Q2 COMMON)



Unit 2 (Q3, Q4 COMMON)



Unit 2 (Q3, Q4 COMMON)



Unit 2 (Q3, Q4 COMMON)

