

**TOSHIBA**

**HN1J02FU**

TOSHIBA FIELD EFFECT TRANSISTOR SILICON P CHANNEL MOS TYPE

# HN1J02FU

HIGH SPEED SWITCHING APPLICATIONS

ANALOG SWITCH APPLICATIONS

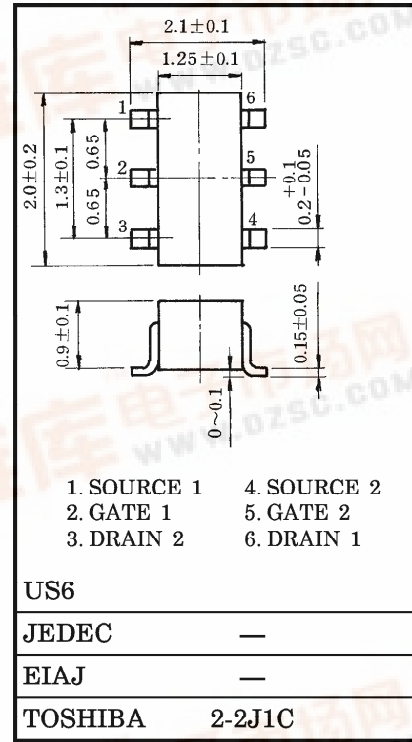
- High Input Impedance
- Low Threshold Voltage :  $V_{th} = -0.5 \sim -1.5V$
- High Speed
- Small Package

MAXIMUM RATINGS (Ta = 25°C) (Q1, Q2 COMMON)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GSS}$	-7	V
DC Drain Current	$I_D$	-50	mA
Drain Power Dissipation	$P_D^*$	200	mW
Channel Temperature	$T_{ch}$	150	°C
Storage Temperature Range	$T_{stg}$	-55 ~ 150	°C

\* Total Rating

Unit in mm



Weight : 6.8mg

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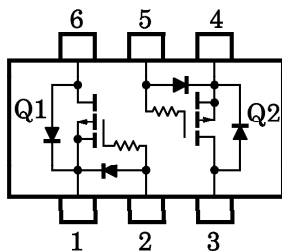
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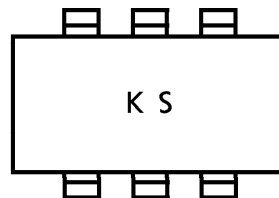
ELECTRICAL CHARACTERISTICS (Ta = 25°C) (Q1, Q2 COMMON)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		$I_{GSS}$	$V_{GS} = -7V, V_{DS} = 0$	—	—	-1	$\mu A$
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	$I_D = -100\mu A, V_{GS} = 0$	-20	—	—	V
Drain Cut-off Current		$I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0$	—	—	-1	$\mu A$
Gate Threshold Voltage		$V_{th}$	$V_{DS} = -3V, I_D = -0.1mA$	-0.5	—	-1.5	V
Forward Transfer Admittance		$ Y_{fs} $	$V_{DS} = -3V, I_D = -10mA$	15	—	—	mS
Drain-Source ON Resistance		$R_{DS(ON)}$	$I_D = -10mA, V_{GS} = -2.5V$	—	20	40	$\Omega$
Input Capacitance		$C_{iss}$	$V_{DS} = -3V, V_{GS} = 0,$ $f = 1MHz$	—	10.4	—	pF
Reverse Transfer Capacitance		$C_{rss}$	$V_{DS} = -3V, V_{GS} = 0,$ $f = 1MHz$	—	2.8	—	pF
Output Capacitance		$C_{oss}$	$V_{DS} = -3V, V_{GS} = 0,$ $f = 1MHz$	—	8.4	—	pF
Switching Time	Turn-on Time	$t_{on}$	$V_{DD} = -3V, I_D = -10mA,$ $V_{GS} = 0 \sim -2.5V$	—	0.15	—	$\mu s$
	Turn-off Time	$t_{off}$	$V_{DD} = -3V, I_D = -10mA,$ $V_{GS} = 0 \sim -2.5V$	—	0.13	—	$\mu s$

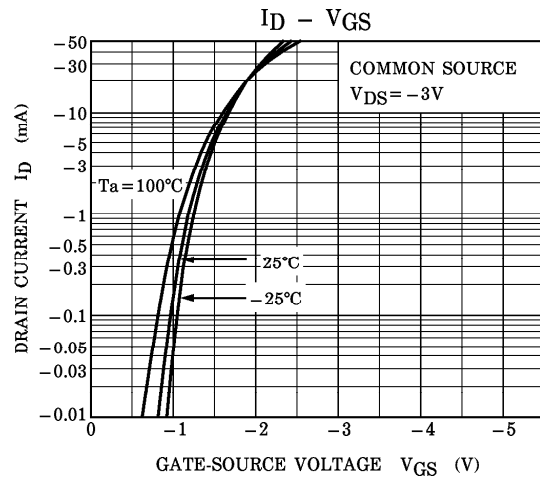
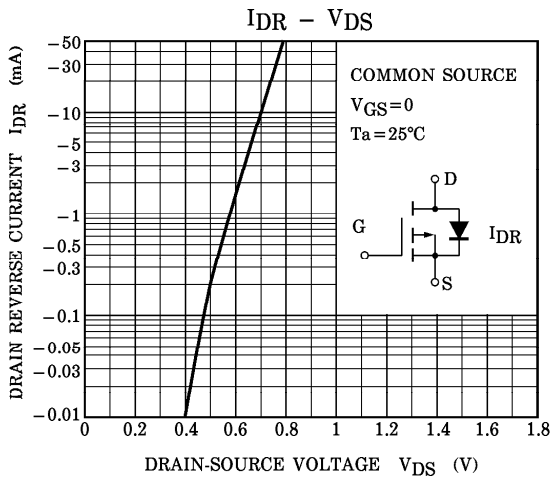
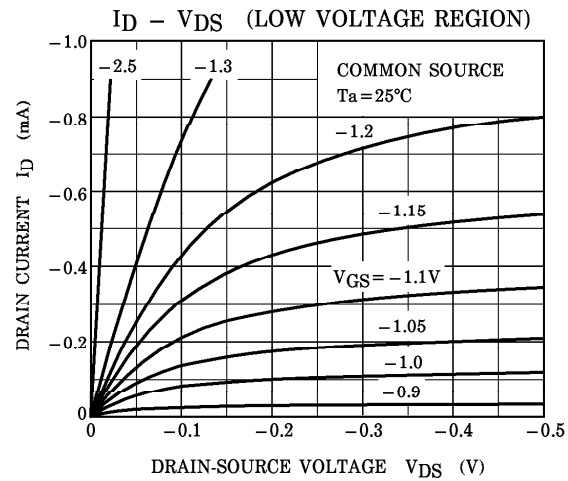
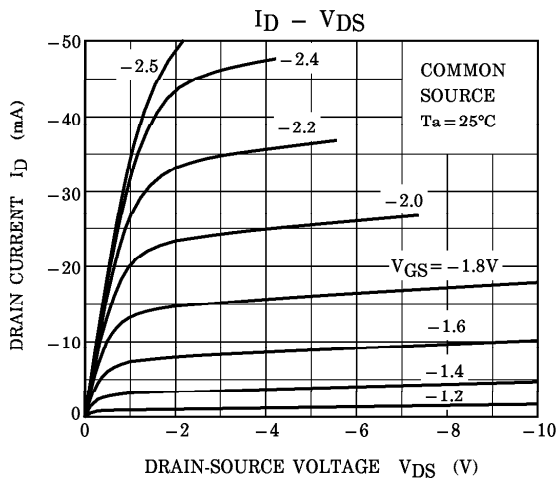
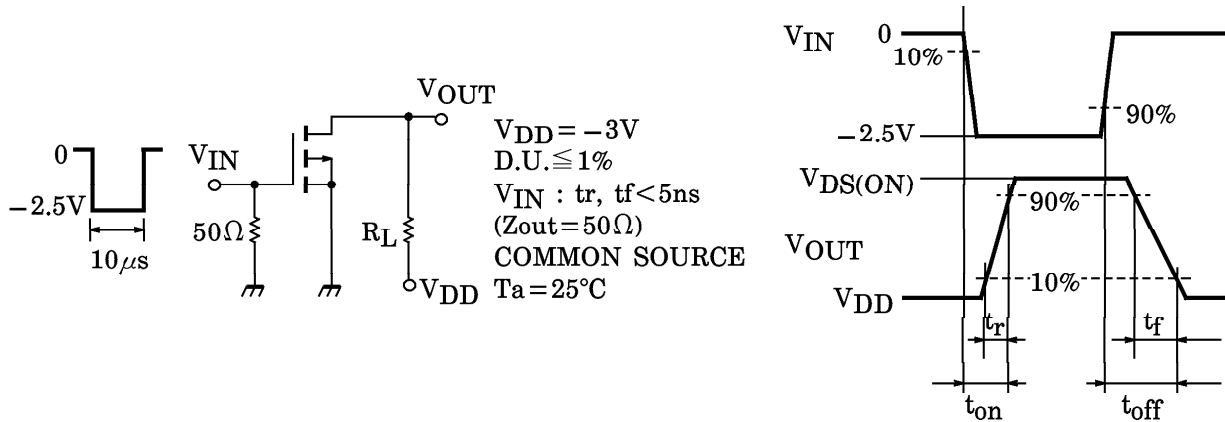
EQUIVALENT CIRCUIT (TOP VIEW)



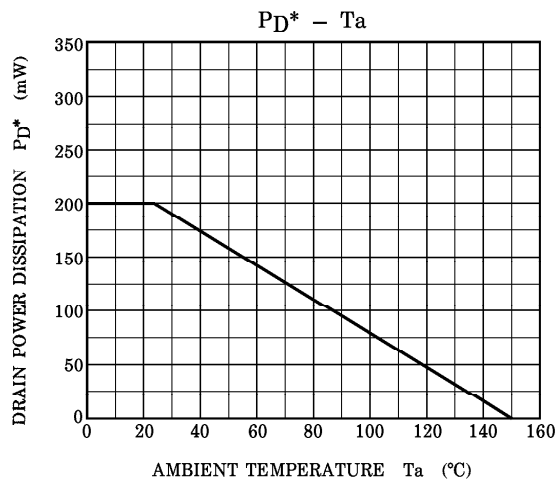
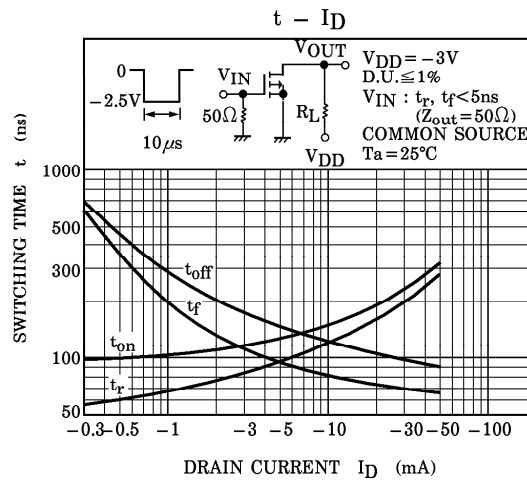
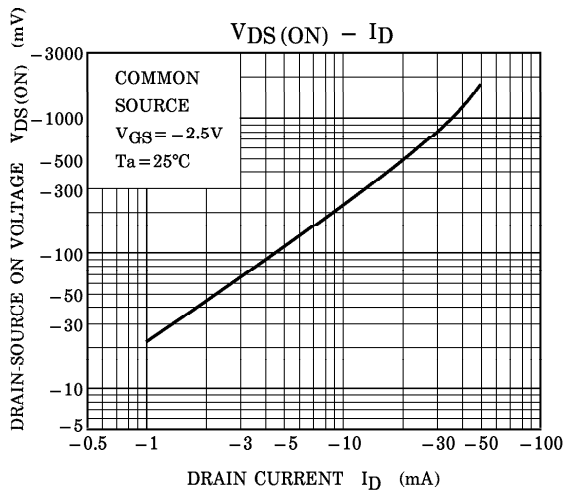
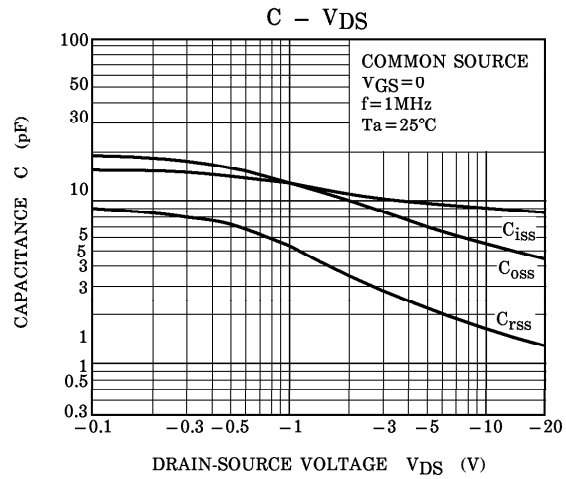
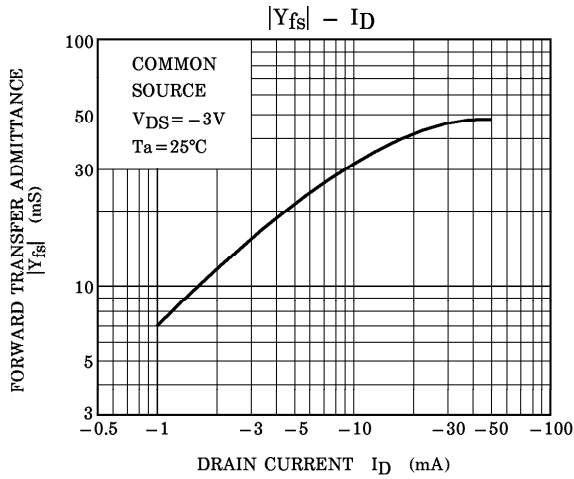
MARKING



(Q1, Q2 COMMON)  
SWITCHING TIME TEST CIRCUIT



(Q1, Q2 COMMON)



\* : Total Rating