

# HN1J02FU

High Speed Switching Applications

Analog Switch Applications

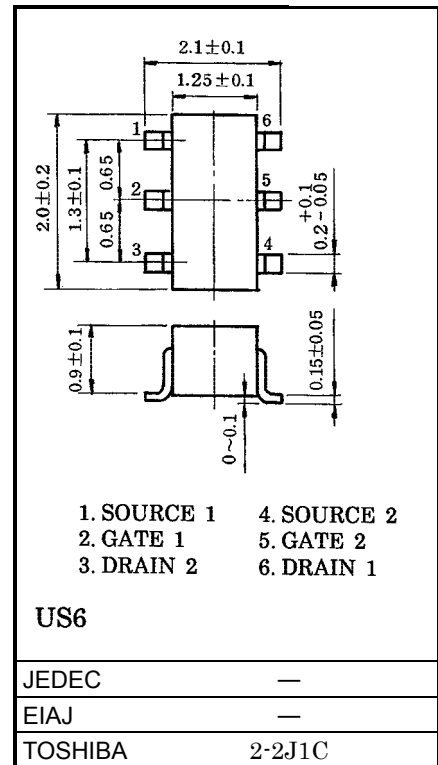
Unit in mm

- High input impedance
- Low threshold voltage:  $V_{th} = -0.5V \sim -1.5V$
- 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



Weight: 6.8mg

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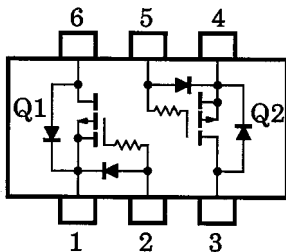
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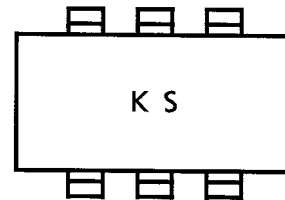
**Electrical Characteristics (Ta = 25°C) (Q1, Q2 Common)**

Characteristic	Symbol	Test Circuit	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)**

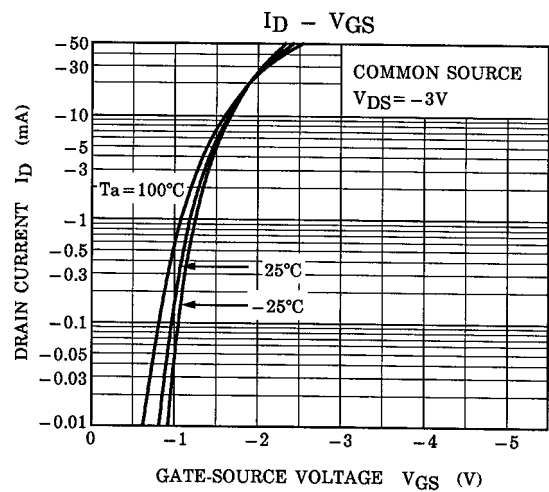
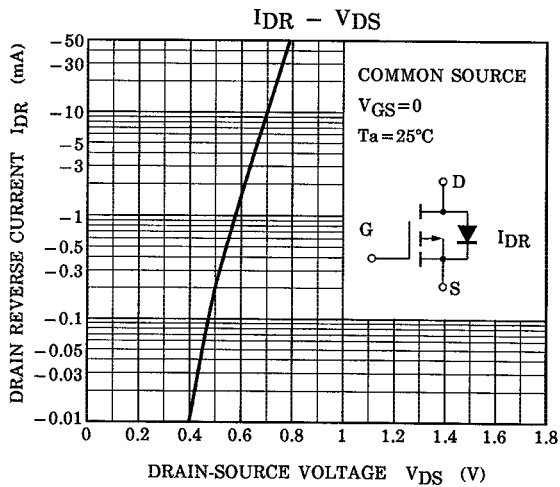
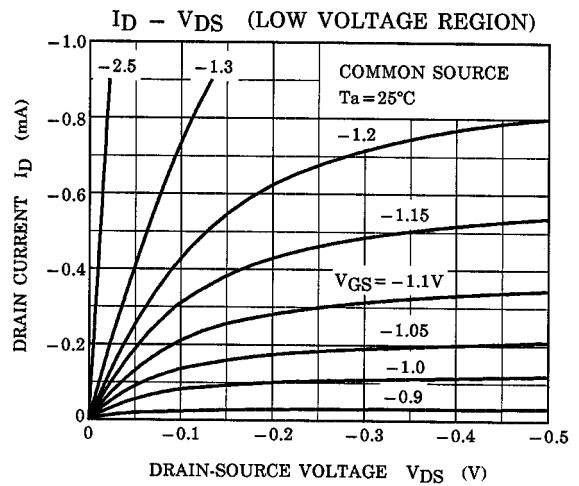
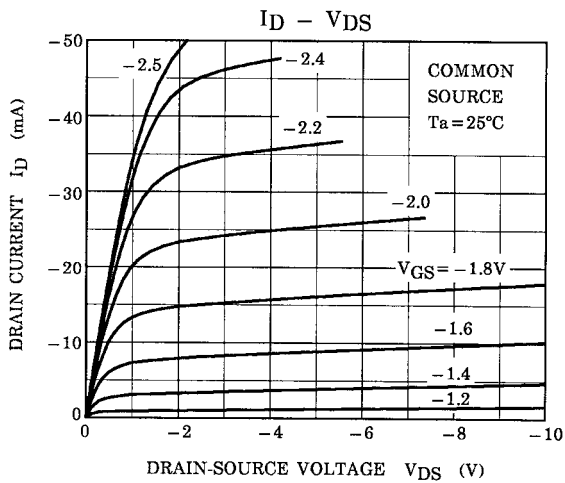
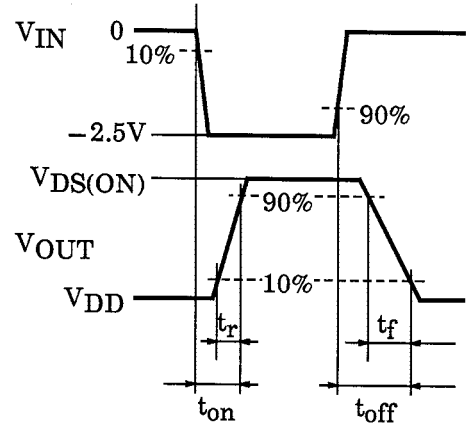
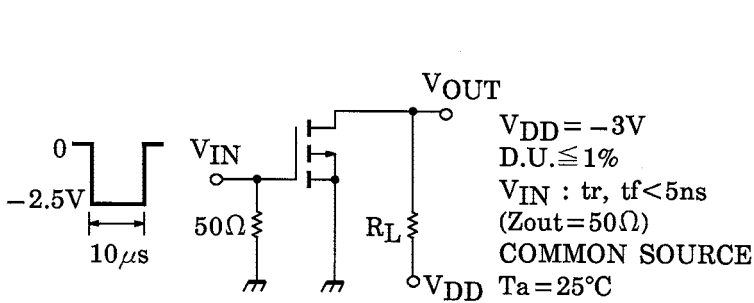


**Marking**

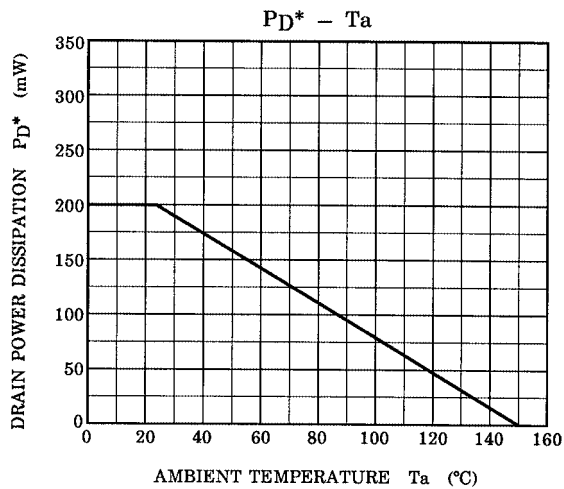
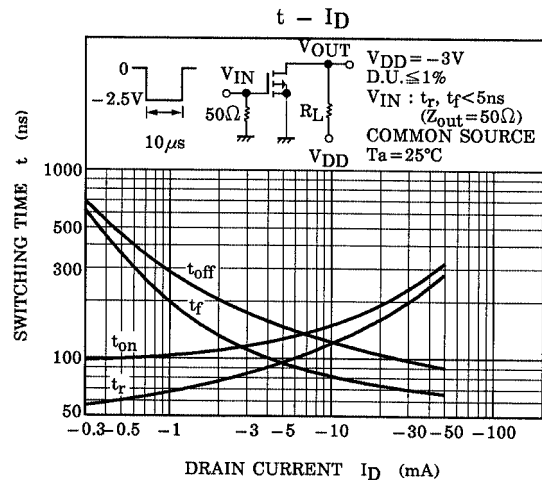
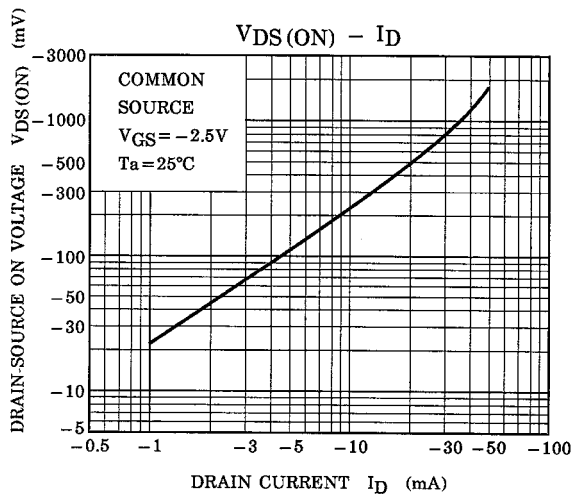
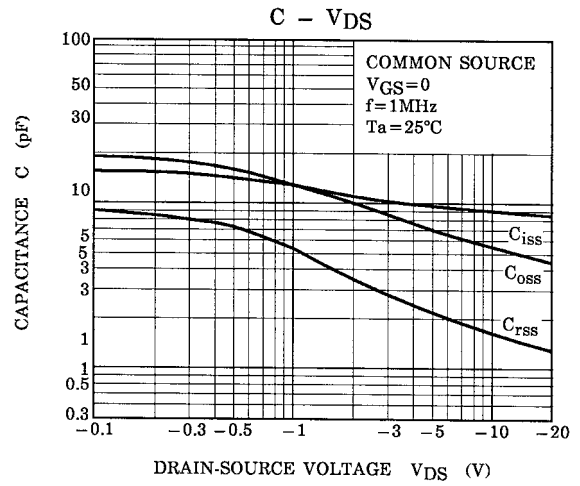
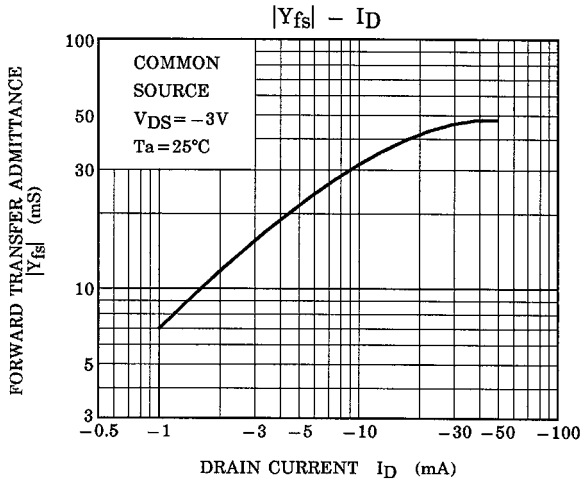


(Q1,Q2 Common)

**Switching Time Test Circuit**



## (Q1,Q2 Common)



\* : Total Rating