

TOSHIBA Field Effect Transistor Silicon P Channel MOS Type

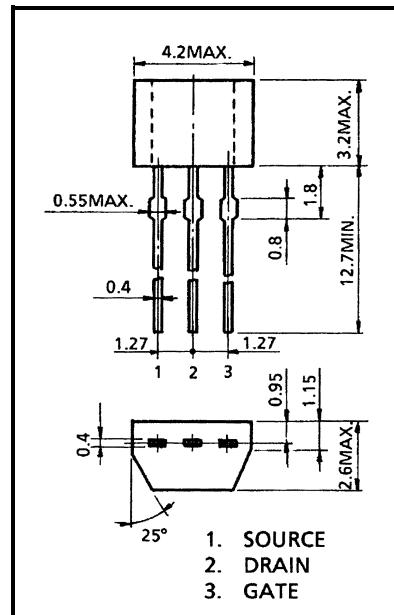
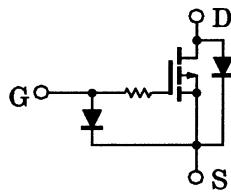
## 2SJ342

High Speed Switching Applications  
Analog Switch Applications

Unit: mm

- Low threshold voltage:  $V_{th} = -0.8 \sim -2.5$  V
- High speed
- Enhancement-mode
- Small package
- Complementary to 2SK1825

## Equivalent Circuit

Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Characteristics	Symbol	Rating	Unit
Drain-source voltage	$V_{DS}$	-50	V
Gate-source voltage	$V_{GSS}$	-7	V
DC drain current	$I_D$	-50	mA
Drain power dissipation	$P_D$	300	mW
Channel temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55~150	$^\circ\text{C}$

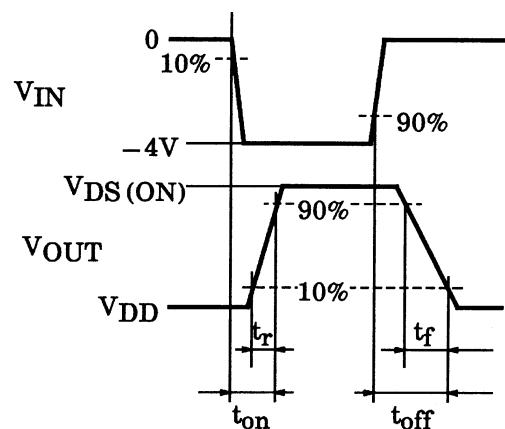
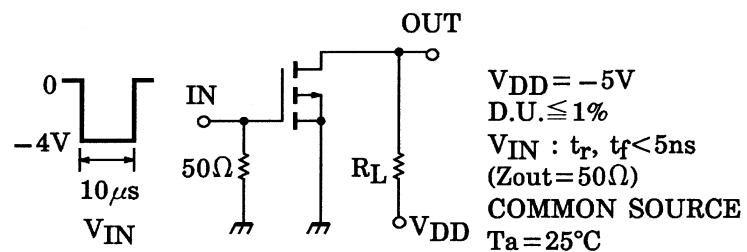
JEDEC	—
JEITA	—
TOSHIBA	2-4E1E

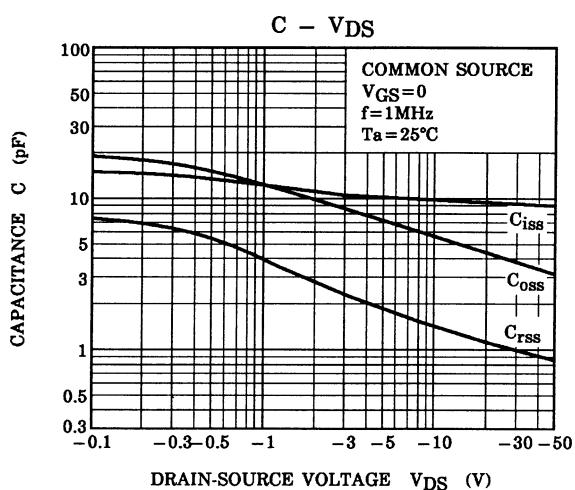
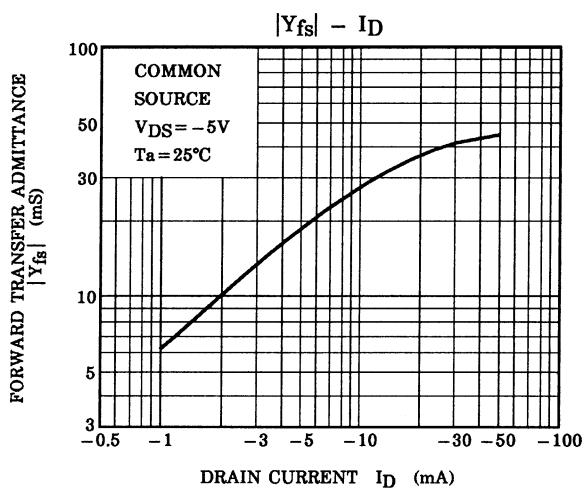
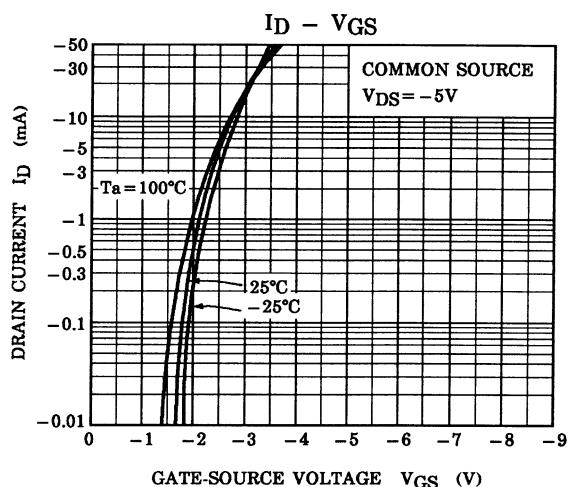
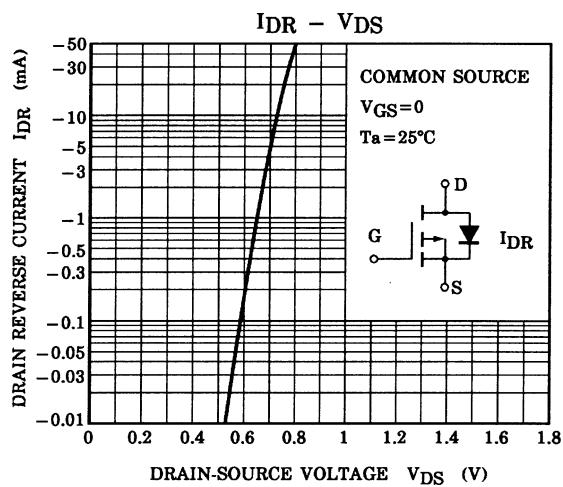
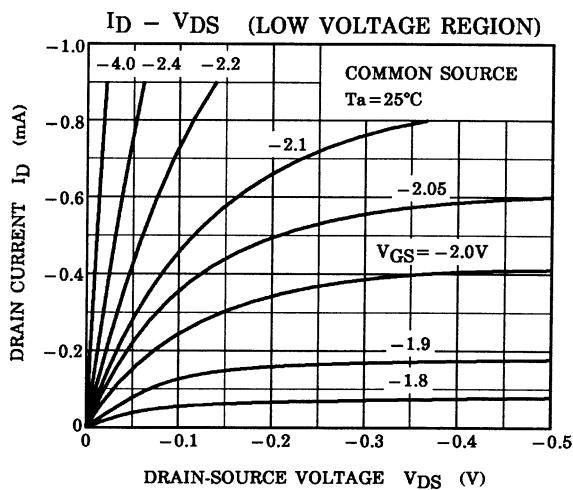
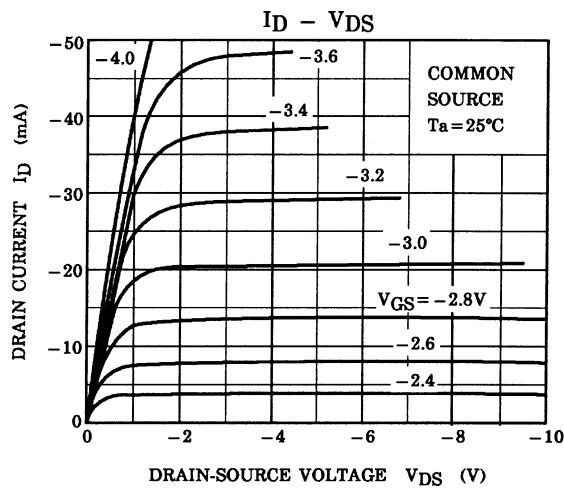
Weight: 0.13 g (typ.)

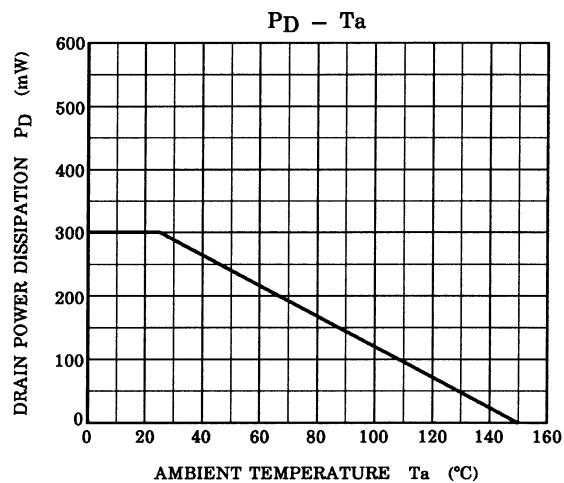
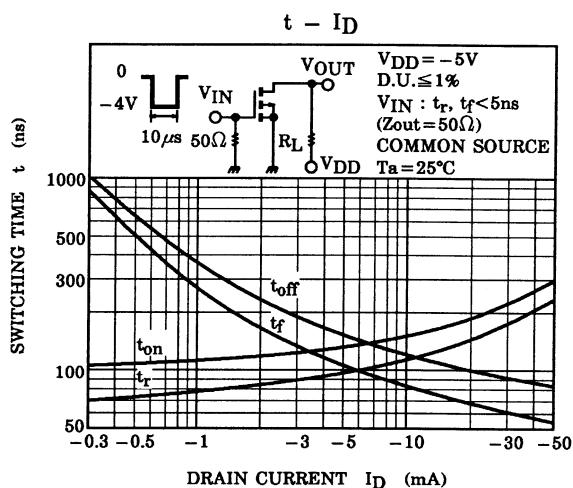
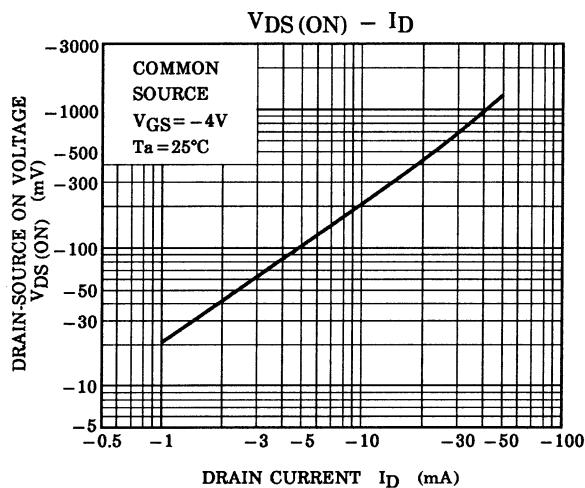
Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate-to-source leakage current	$I_{GSS}$	$V_{GS} = -7$ V, $V_{DS} = 0$	—	—	-1	$\mu\text{A}$
Drain-source breakdown voltage	$V_{(BR) DSS}$	$I_D = -100$ $\mu\text{A}$ , $V_{GS} = 0$	-50	—	—	V
Drain cut-off current	$I_{DSS}$	$V_{DS} = -50$ V, $V_{GS} = 0$	—	—	-1	$\mu\text{A}$
Gate threshold voltage	$V_{th}$	$V_{DS} = -5$ V, $I_D = -0.1$ mA	-0.8	—	-2.5	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = -5$ V, $I_D = -10$ mA	15	—	—	$\text{mS}$
Drain-source ON resistance	$R_{DS (\text{ON})}$	$I_D = -10$ mA, $V_{GS} = -4$ V	—	20	50	$\Omega$
Input capacitance	$C_{iss}$	$V_{DS} = -5$ V, $V_{GS} = 0$ , $f = 1$ MHz	—	10.5	—	pF
Reverse transfer capacitance	$C_{rss}$	$V_{DS} = -5$ V, $V_{GS} = 0$ , $f = 1$ MHz	—	1.9	—	pF
Output capacitance	$C_{oss}$	$V_{DS} = -5$ V, $V_{GS} = 0$ , $f = 1$ MHz	—	7.2	—	pF
Switching time	Turn-on time	$t_{on}$	$V_{DD} = -5$ V, $I_D = -10$ mA, $V_{GS} = 0 \sim -4$ V	—	0.15	—
	Turn-off time	$t_{off}$		—	0.13	—
						$\mu\text{s}$

## Switching Time Test Circuit







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