

TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

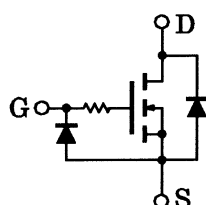
2SK1825

High Speed Switching Applications

Analog Switch Applications

- 4 V gate drive
- Low threshold voltage: $V_{th} = 0.8 \sim 2.5$ V
- High speed
- Enhancement mode
- Small package

Equivalent Circuit



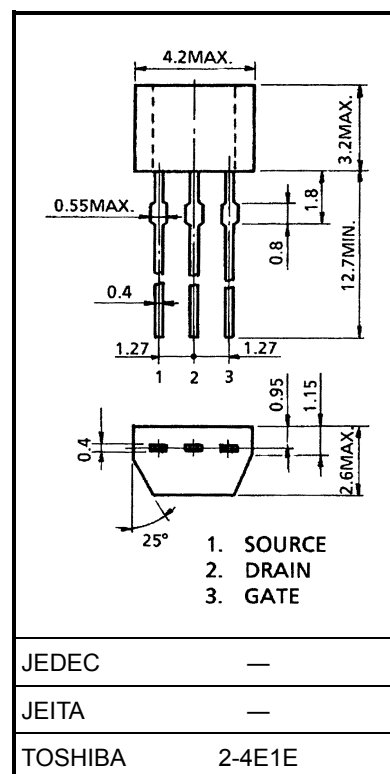
Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	50	V
Gate-source voltage	V_{GSS}	10	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}	$-55 \sim 150$	$^\circ\text{C}$

Note: This transistor is electrostatic sensitive device.

Please handle with caution.

Unit: mm



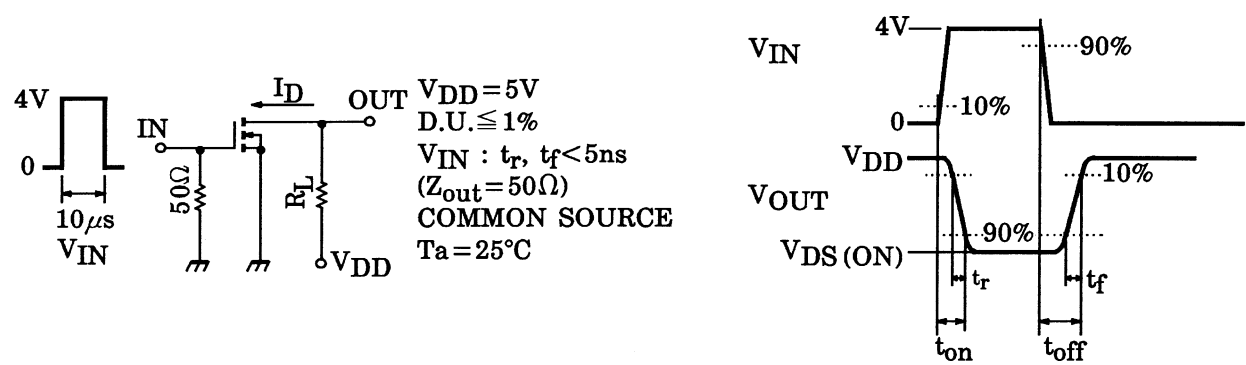
JEDEC	—
JEITA	—
TOSHIBA	2-4E1E

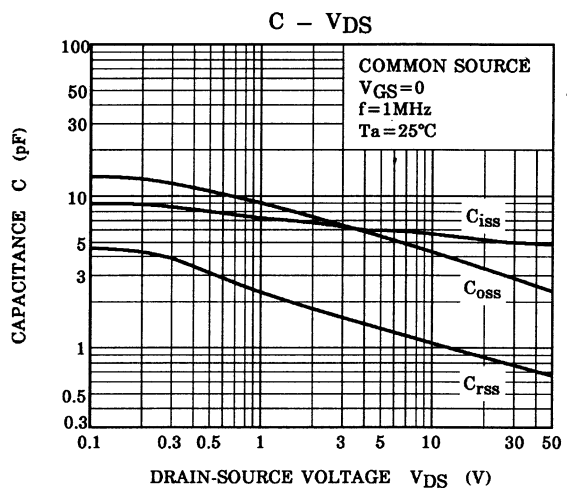
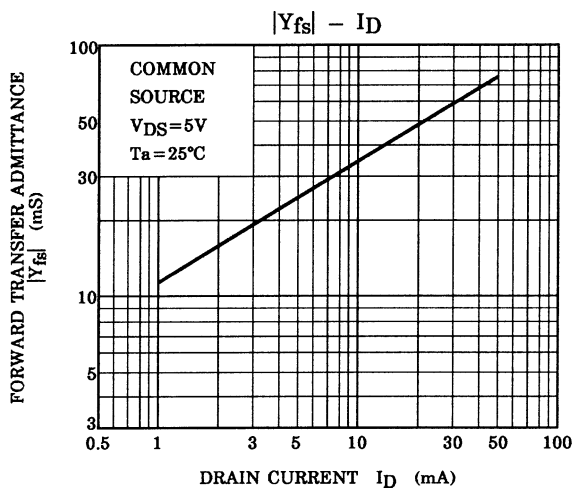
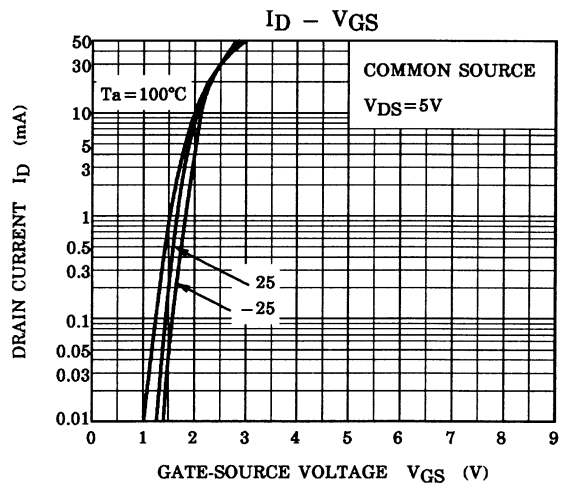
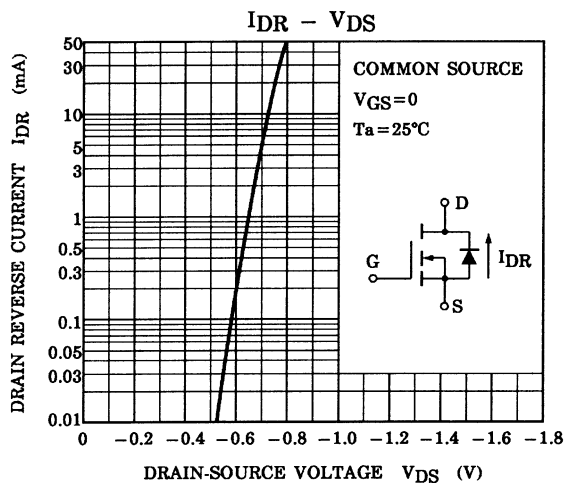
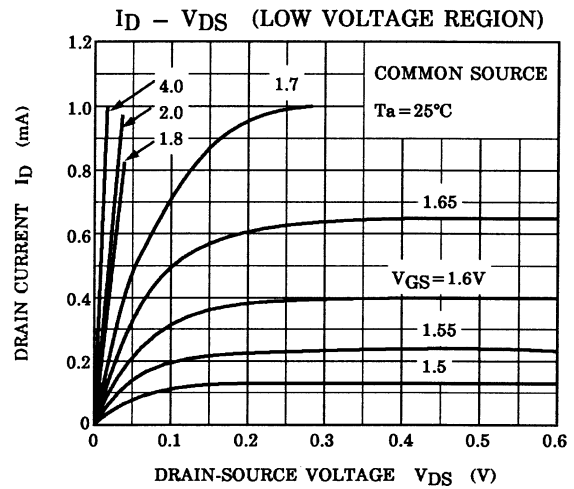
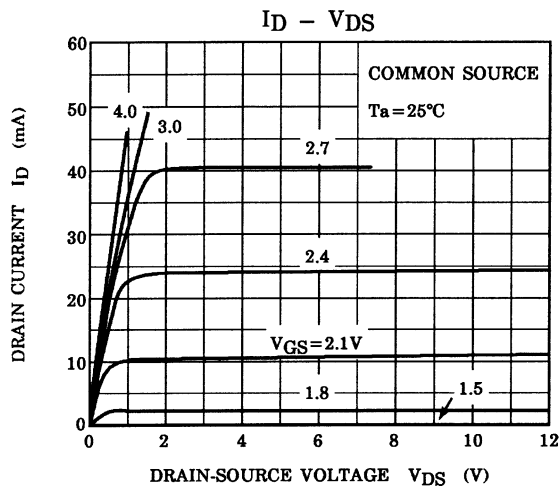
Weight: 0.13 g (typ.)

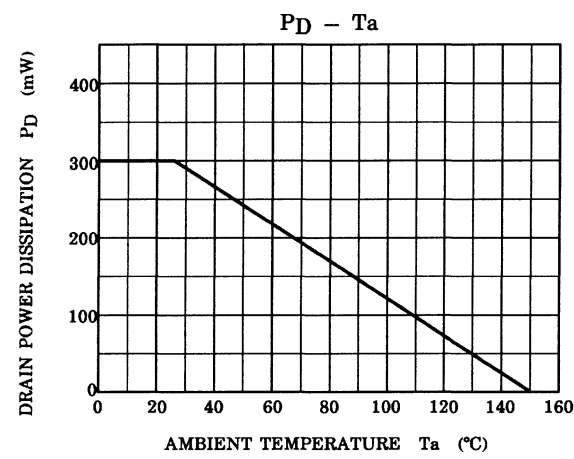
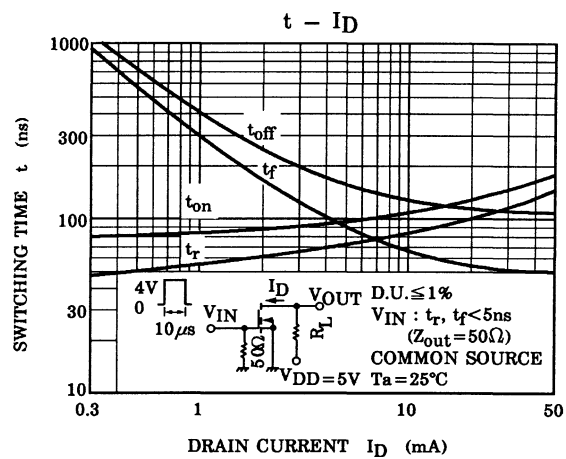
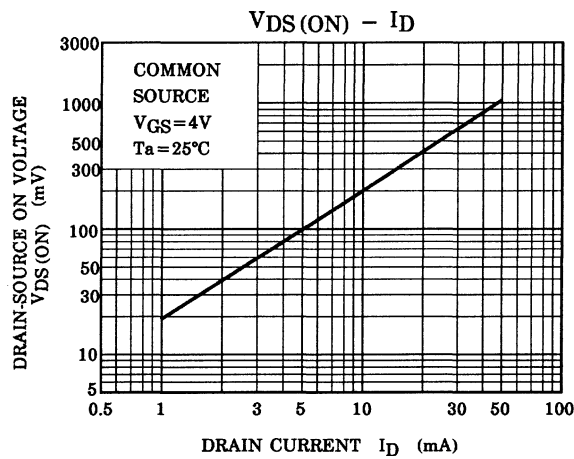
Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GSS}	$V_{GS} = 10\text{ V}, V_{DS} = 0$	—	—	1	μA
Drain-source breakdown voltage		$V_{(BR)DSS}$	$I_D = 100\text{ }\mu\text{A}, V_{GS} = 0$	50	—	—	V
Drain cut-off current		I_{DSS}	$V_{DS} = 50\text{ V}, V_{GS} = 0$	—	—	1	μA
Gate threshold voltage		V_{th}	$V_{DS} = 5\text{ V}, I_D = 0.1\text{ mA}$	0.8	—	2.5	V
Forward transfer admittance		$ Y_{fs} $	$V_{DS} = 5\text{ V}, I_D = 10\text{ mA}$	20	—	—	mS
Drain-source ON resistance		$R_{DS(ON)}$	$I_D = 10\text{ mA}, V_{GS} = 4.0\text{ V}$	—	20	50	Ω
Input capacitance		C_{iss}	$V_{DS} = 5\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$	—	6.3	—	pF
Reverse transfer capacitance		C_{rss}	$V_{DS} = 5\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$	—	1.3	—	pF
Output capacitance		C_{oss}	$V_{DS} = 5\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$	—	5.7	—	pF
Switching time	Turn-on time	t_{on}	$V_{DD} = 5\text{ V}, I_D = 10\text{ mA}, V_{GS} = 0\sim 4.0\text{ V}$	—	0.11	—	μs
	Turn-off time	t_{off}	$V_{DD} = 5\text{ V}, I_D = 10\text{ mA}, V_{GS} = 0\sim 4.0\text{ V}$	—	0.15	—	

Switching Time Test Circuit







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