TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

2SK1830

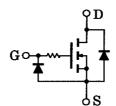
High Speed Switching Applications Analog Switch Applications

- 2.5 V gate drive
- Low threshold voltage: $V_{th} = 0.5 \sim 1.5 \text{ V}$
- High speed
- Enhancement-mode
- Small package

Marking

Equivalent Circuit





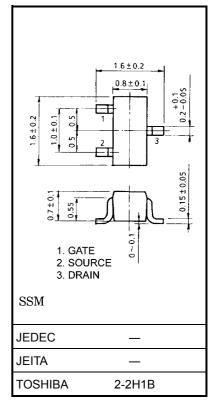
Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	20	V
Gate-source voltage	V_{GSS}	10	V
DC drain current	I _D	50	mA
Drain power dissipation	P_{D}	100	mW
Channel temperature	T _{ch}	150	°C
Storage temperature range	T _{stg}	−55~150	°C

Note: This transistor is electrostatic sensitive device.

Please handle with caution.

Unit: mm

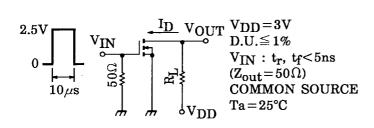


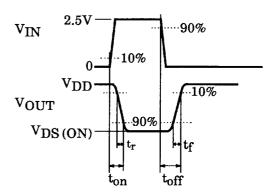
Weight: 2.4 mg (typ.)

Electrical Characteristics (Ta = 25°C)

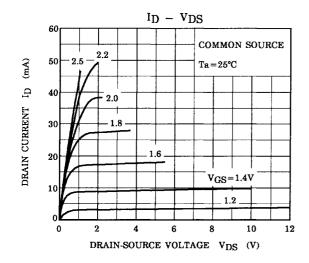
Characteristics		Symbol	Test Condition	Min	Тур.	Max	Unit
Gate leakage current		I _{GSS}	V _{GS} = 10 V, V _{DS} = 0	_	_	1	μА
Drain-source breakdown voltage		V (BR) DSS	$I_D = 100 \ \mu A, \ V_{GS} = 0$	20	_	_	V
Drain cut-off curre	nt	I _{DSS}	$V_{DS} = 20 \text{ V}, V_{GS} = 0$	_	_	1	μА
Gate threshold vo	Itage	V _{th}	$V_{DS} = 3 \text{ V}, I_{D} = 0.1 \text{ mA}$	0.5	_	1.5	V
Forward transfer a	admittance	Y _{fs}	$V_{DS} = 3 \text{ V}, I_D = 10 \text{ mA}$	20	_	_	mS
Drain-source ON	resistance	R _{DS (ON)}	$I_D = 10 \text{ mA}, V_{GS} = 2.5 \text{ V}$	_	20	40	Ω
Input capacitance		C _{iss}	$V_{DS} = 3 V$, $V_{GS} = 0$, $f = 1 MHz$	_	5.5	_	pF
Reverse transfer capacitance		C _{rss}	$V_{DS} = 3 V$, $V_{GS} = 0$, $f = 1 MHz$	_	1.6	_	pF
Output capacitance		Coss	$V_{DS} = 3 V$, $V_{GS} = 0$, $f = 1 MHz$	_	6.5	_	pF
Switching time	Turn-on time	t _{on}	$V_{DD} = 3 \text{ V}, I_D = 10 \text{ mA}, V_{GS} = 0 \sim 2.5 \text{ V}$	_	0.14	_	μS
	Turn-off time	t _{off}	$V_{DD} = 3 \text{ V}, I_D = 10 \text{ mA}, V_{GS} = 0 \sim 2.5 \text{ V}$	_	0.14	_	

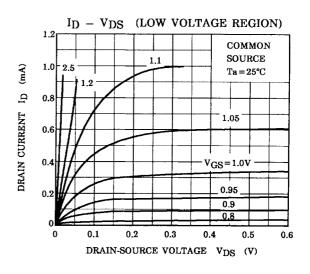
Switching Time Test Circuit

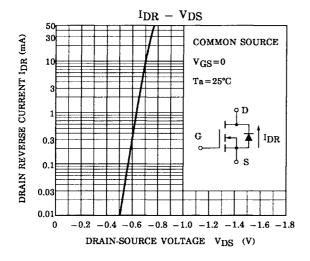


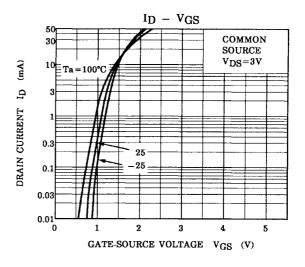


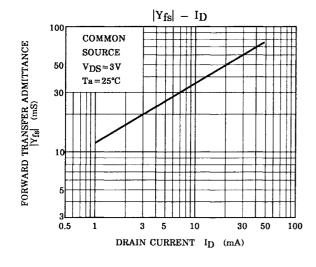
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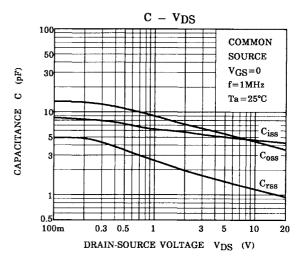




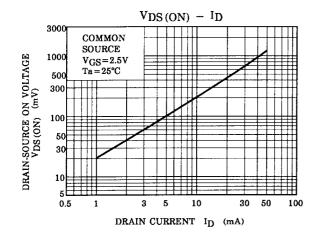


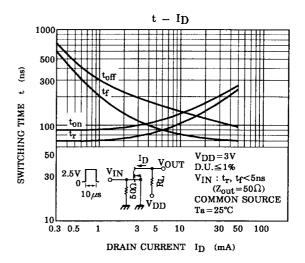


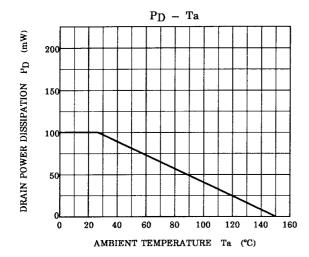




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