

TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

2SK982

High Speed Switching Applications

Analog Switch Applications

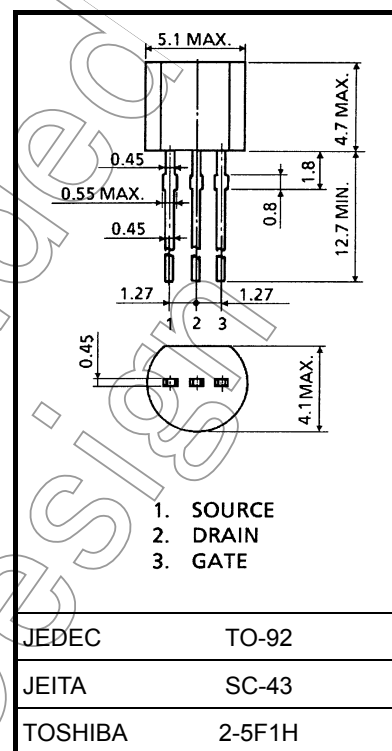
Interface Applications

Unit: mm

- Excellent switching times: $t_{on} = 14 \text{ ns}$ (typ.)
- High forward transfer admittance: $|Y_{fs}| = 100 \text{ mS}$ (min)
@ $I_D = 50 \text{ mA}$
- Low on resistance: $R_{DS(ON)} = 0.6 \Omega$ (typ.) @ $I_D = 50 \text{ mA}$
- Enhancement-mode
- Complementary to 2SJ148

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

Characteristics		Symbol	Rating	Unit
Drain-source voltage		V_{DS}	60	V
Gate-source voltage		V_{GSS}	± 20	V
Drain current	DC	I_D	200	mA
	Pulse	I_{DP}	800	
Drain power dissipation ($T_a = 25^\circ\text{C}$)		P_D	400	mW
Channel temperature		T_{ch}	150	$^\circ\text{C}$
Storage temperature range		T_{stg}	$-55 \sim 150$	$^\circ\text{C}$



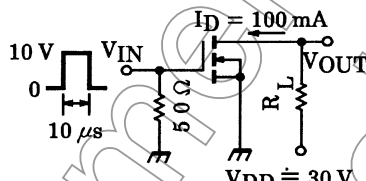
JEDEC	TO-92
JEITA	SC-43
TOSHIBA	2-5F1H

Weight: 0.21 g (typ.)

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

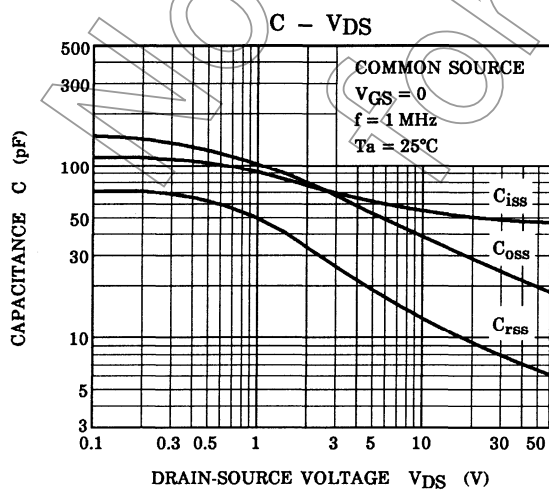
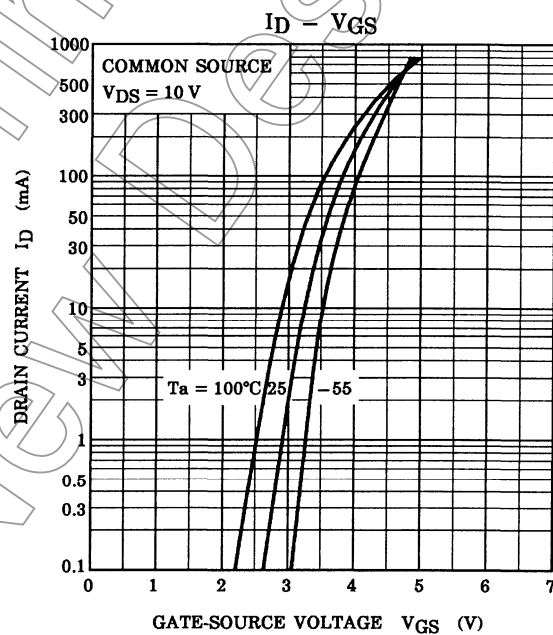
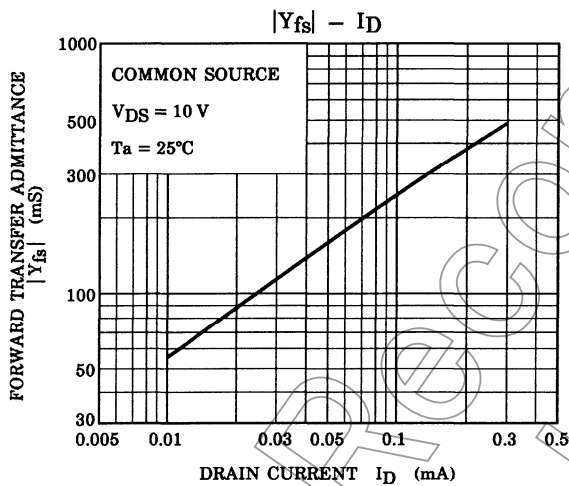
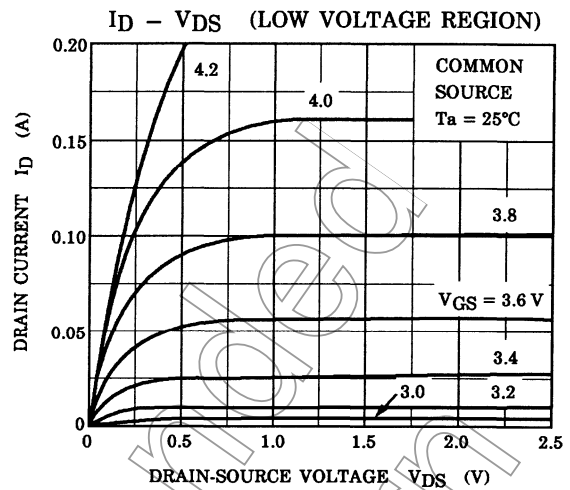
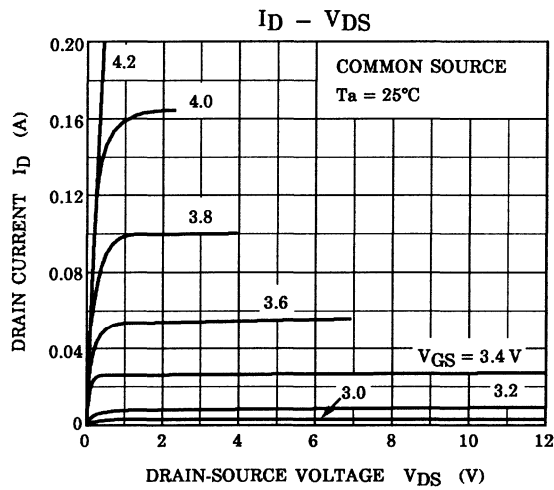
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

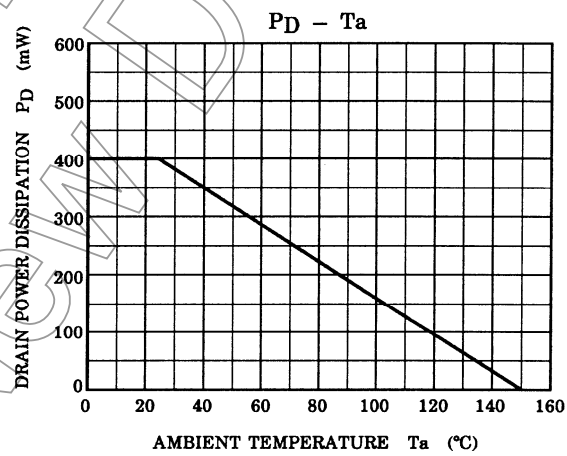
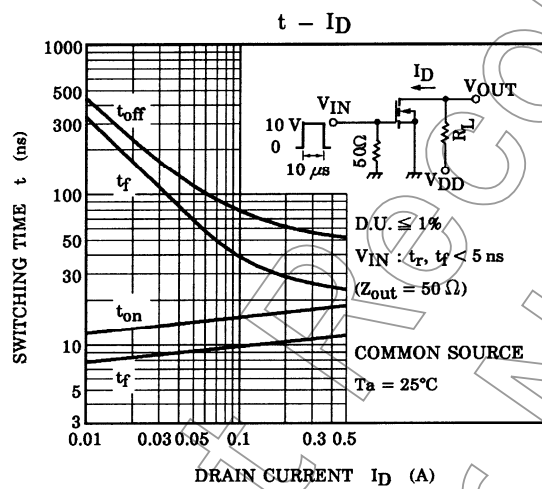
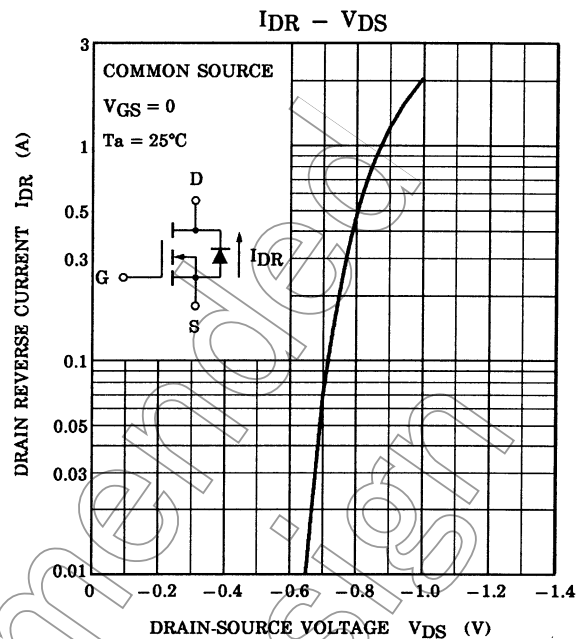
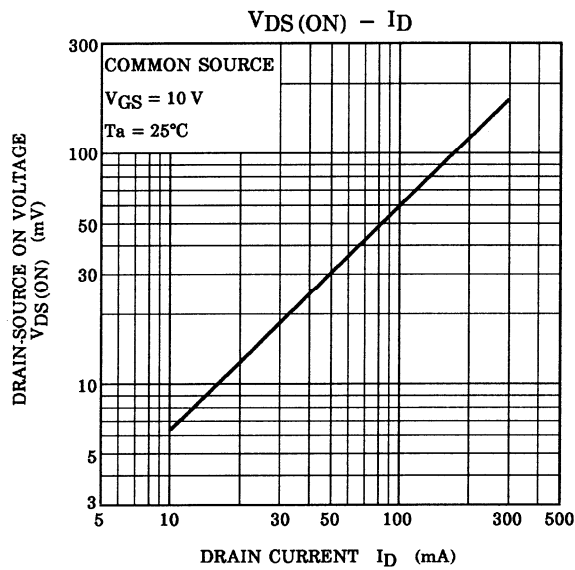
Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GSS}	$V_{GS} = \pm 10 \text{ V}, V_{DS} = 0$	—	—	± 100	nA
Drain cut-off current		I_{DSS}	$V_{DS} = 60 \text{ V}, V_{GS} = 0$	—	—	10	μA
Drain-source breakdown voltage		$V_{(BR)DSS}$	$I_D = 1 \text{ mA}, V_{GS} = 0$	60	—	—	V
Gate threshold voltage		V_{th}	$V_{DS} = 10 \text{ V}, I_D = 1 \text{ mA}$	2	—	3.5	V
Forward transfer admittance		$ Y_{fs} $	$V_{DS} = 10 \text{ V}, I_D = 50 \text{ mA}$	100	—	—	mS
Drain-source ON resistance		$R_{DS(ON)}$	$I_D = 50 \text{ mA}, V_{GS} = 10 \text{ V}$	—	0.6	1.0	Ω
Drain-source ON voltage		$V_{DS(ON)}$	$I_D = 50 \text{ mA}, V_{GS} = 10 \text{ V}$	—	30	50	mV
Input capacitance		C_{iss}	$V_{DS} = 10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$	—	55	65	pF
Reverse transfer capacitance		C_{rss}	$V_{DS} = 10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$	—	13	18	pF
Output capacitance		C_{oss}	$V_{DS} = 10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$	—	40	50	pF
Switching time	Rise time	t_r	 <p>$I_D = 100 \text{ mA}$ V_{IN} $10 \mu\text{s}$ 50Ω $V_{DD} = 30 \text{ V}$ R_L V_{OUT}</p>	—	8	—	ns
	Turn-on time	t_{on}		—	14	—	
	Fall time	t_f		—	35	—	
	Turn-off Time	t_{off}		—	75	—	

Note: This transistor is the electrostatic sensitive device.

Please handle with caution.





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