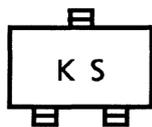


# 2SJ345

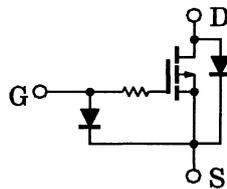
High Speed Switching Applications  
Analog Switch Applications

- Low threshold voltage:  $V_{th} = -0.5 \sim -1.5$  V
- High speed
- Small package
- Complementary to 2SK1828

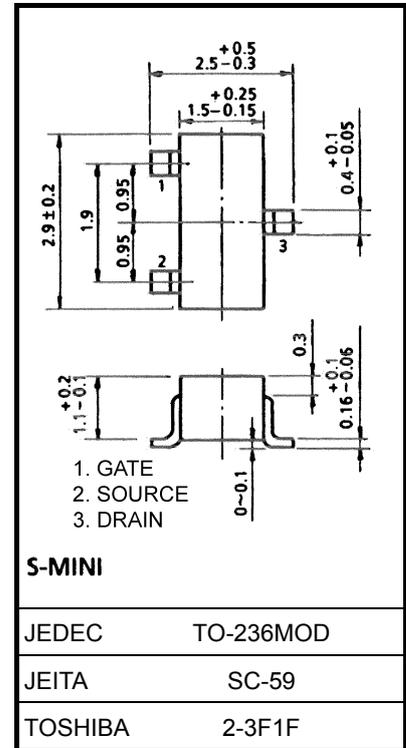
**Marking**



**Equivalent Circuit**



Unit: mm



**S-MINI**

JEDEC	TO-236MOD
JEITA	SC-59
TOSHIBA	2-3F1F

Weight: 0.012 g (typ.)

**Absolute Maximum Ratings (Ta = 25°C)**

Characteristics	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

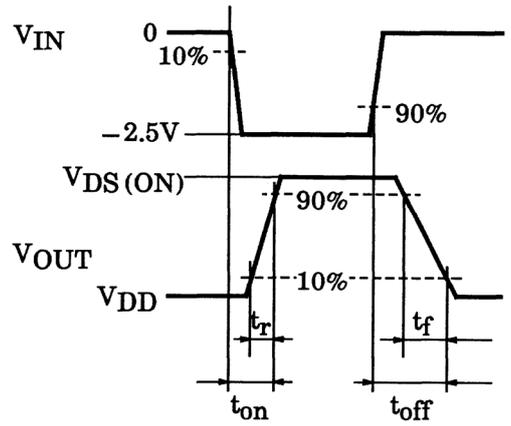
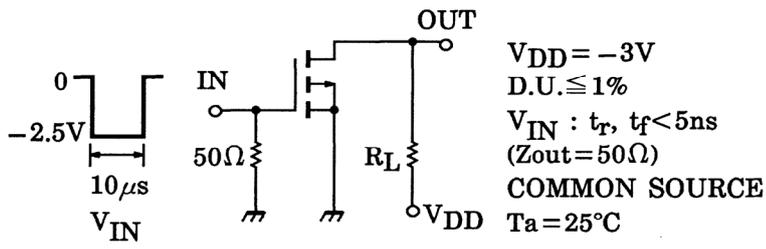
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

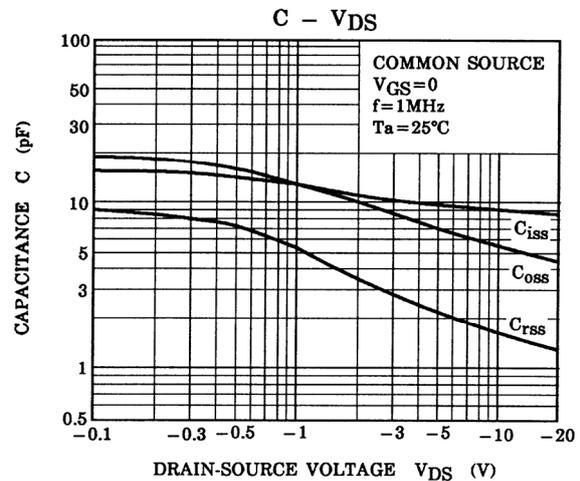
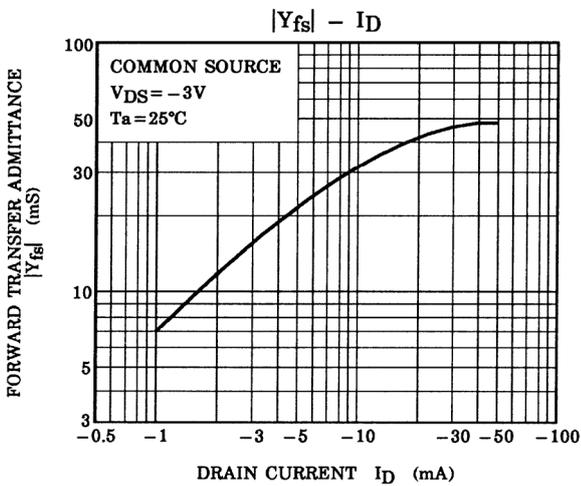
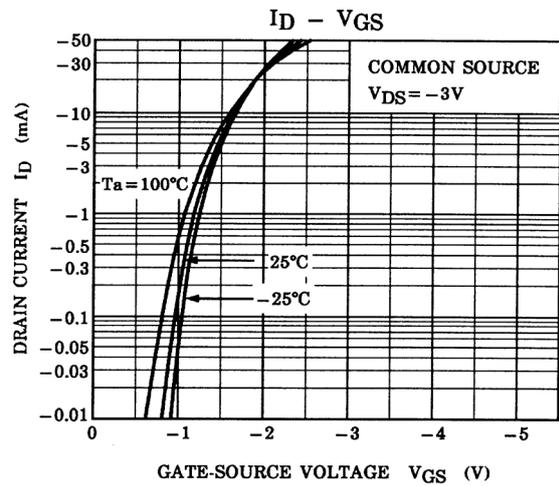
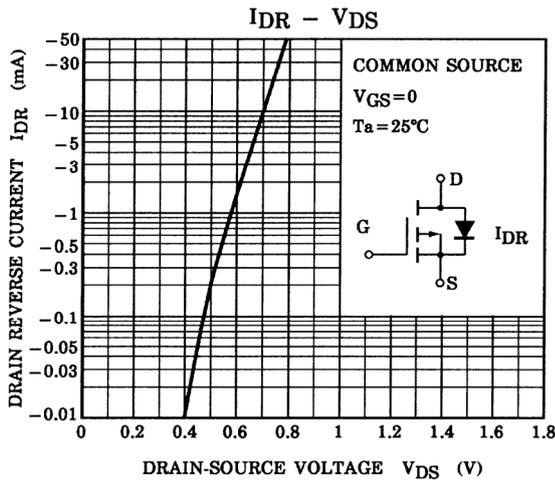
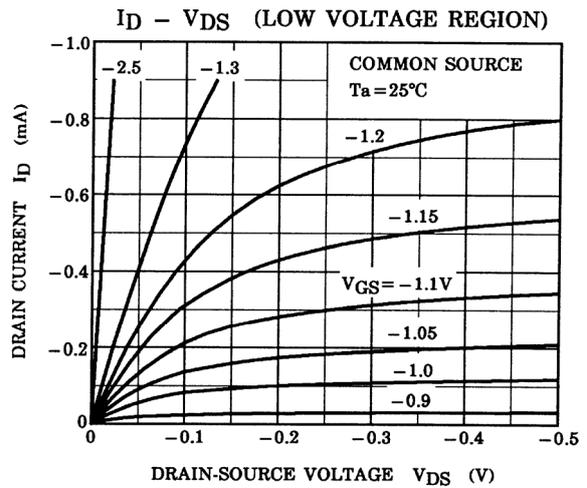
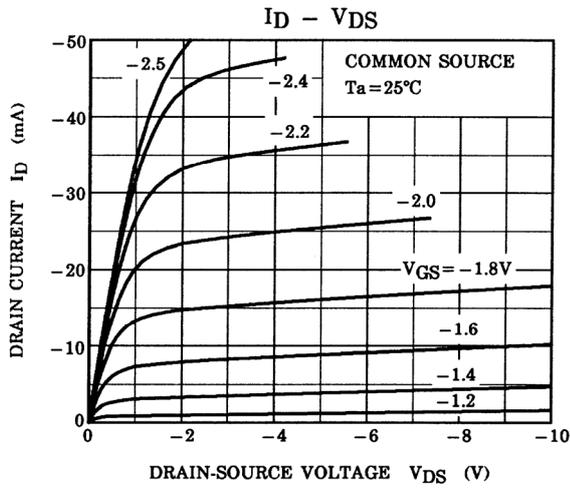
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

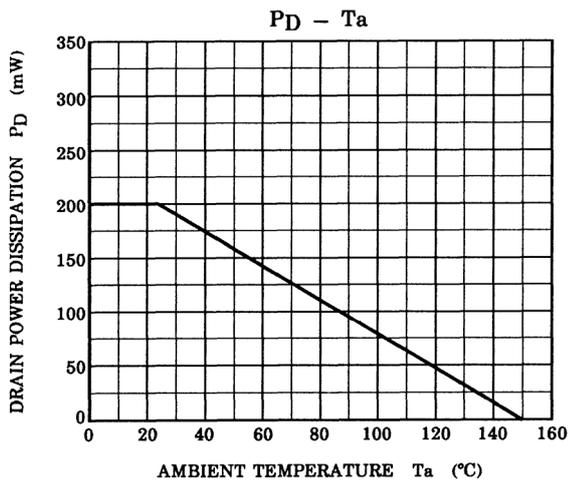
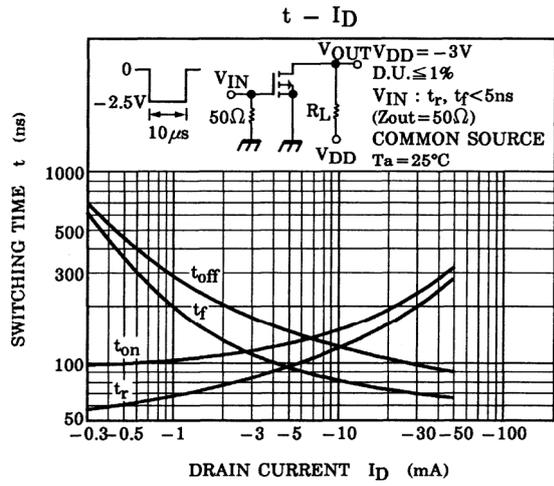
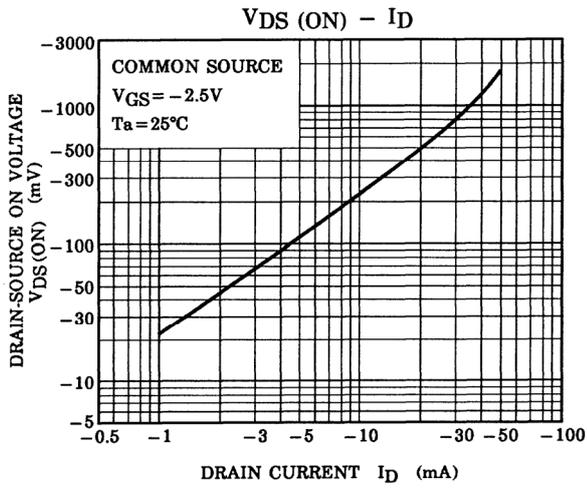
**Electrical Characteristics (Ta = 25°C)**

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current	$I_{GSS}$	$V_{GS} = -7$ V, $V_{DS} = 0$	—	—	-1	$\mu$ A
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D = -100$ $\mu$ A, $V_{GS} = 0$	-20	—	—	V
Drain cut-off current	$I_{DSS}$	$V_{DS} = -20$ V, $V_{GS} = 0$	—	—	-1	$\mu$ A
Gate threshold voltage	$V_{th}$	$V_{DS} = -3$ V, $I_D = -0.1$ mA	-0.5	—	-1.5	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = -3$ V, $I_D = -10$ mA	15	—	—	mS
Drain-source ON resistance	$R_{DS(ON)}$	$I_D = -10$ mA, $V_{GS} = -2.5$ V	—	20	40	$\Omega$
Input capacitance	$C_{iss}$	$V_{DS} = -3$ V, $V_{GS} = 0$ , $f = 1$ MHz	—	10.4	—	pF
Reverse transfer capacitance	$C_{rss}$	$V_{DS} = -3$ V, $V_{GS} = 0$ , $f = 1$ MHz	—	2.8	—	pF
Output capacitance	$C_{oss}$	$V_{DS} = -3$ V, $V_{GS} = 0$ , $f = 1$ MHz	—	8.4	—	pF
Switching time	Turn-on time	$V_{DD} = -3$ V, $I_D = -10$ mA, $V_{GS} = 0 \sim -2.5$ V	—	0.15	—	$\mu$ s
	Turn-off time	$V_{DD} = -3$ V, $I_D = -10$ mA, $V_{GS} = 0 \sim -2.5$ V	—	0.13	—	

**Switching Time Test Circuit**







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20070701-EN GENERAL

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