

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

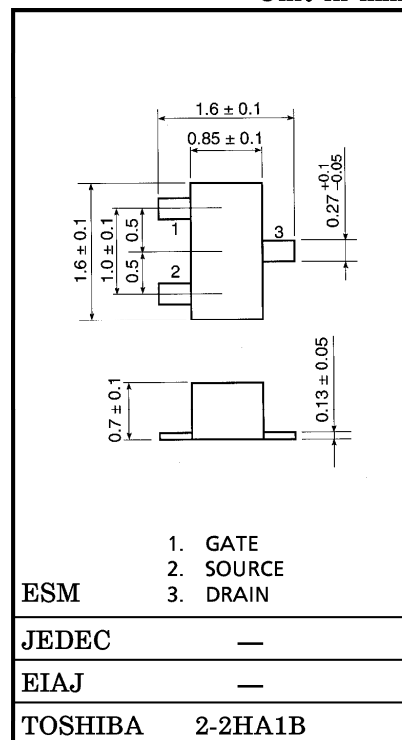
SSM3K03FE

HIGH SPEED SWITCH APPLICATIONS

ANALOG SWITCH APPLICATIONS

- 2.5 V Gate Drive
- High Input Impedance
- Low Gate Threshold Voltage : $V_{th} = 0.7 \sim 1.3 \text{ V}$
- Small Package

Unit in mm



MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GSS}	10	V
DC Drain Current	I_D	100	mA
Drain Power Dissipation	P_D	100	mW
Channel Temperature	T_{ch}	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

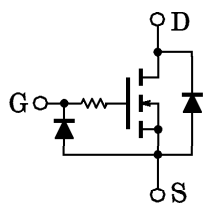
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	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	$V_{(BR)DSS}$	$I_D = 100 \mu\text{A}, V_{GS} = 0$	20	—	—	V	
Drain Cut-off Current	I_{DSS}	$V_{DS} = 20 \text{ V}, V_{GS} = 0$	—	—	1	μA	
Gate Threshold Voltage	V_{th}	$V_{DS} = 3 \text{ V}, I_D = 0.1 \text{ mA}$	0.7	—	1.3	V	
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 3 \text{ V}, I_D = 10 \text{ mA}$	25	50	—	mS	
Drain-Source ON Resistance	$R_{DS(ON)}$	$I_D = 10 \text{ mA}, V_{GS} = 2.5 \text{ V}$	—	4	12	Ω	
Input Capacitance	C_{iss}	$V_{DS} = 3 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$	—	11.0	—	pF	
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 3 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$	—	3.3	—	pF	
Output Capacitance	C_{oss}	$V_{DS} = 3 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$	—	9.3	—	pF	
Switching Time	Turn-on Time	t_{on}	$V_{DD} = 3 \text{ V}, I_D = 10 \text{ mA}, V_{GS} = 0 \sim 2.5 \text{ V}$		—	0.16	μs
	Turn-off Time	t_{off}	$V_{DD} = 3 \text{ V}, I_D = 10 \text{ mA}, V_{GS} = 0 \sim 2.5 \text{ V}$		—	0.19	

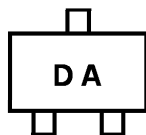
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EQUIVALENT CIRCUIT



MARKING



SWITCHING TIME TEST CIRCUIT

(a) TEST CIRCUIT

