

TOSHIBA Field Effect Transistor Silicon N Channel MOS Type (π -MOSII⁵)

2SK1365

Switching Power Supply Applications

Unit: mm

- Low drain-source ON resistance : $R_{DS(ON)} = 1.5 \Omega$ (typ.)
- High forward transfer admittance : $|Y_{fs}| = 4.0 S$ (typ.)
- Low leakage current : $I_{DSS} = 300 \mu A$ (max) ($V_{DS} = 800 V$)
- Enhancement mode : $V_{th} = 1.5 \sim 3.5 V$ ($V_{DS} = 10 V$, $I_D = 1 mA$)

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

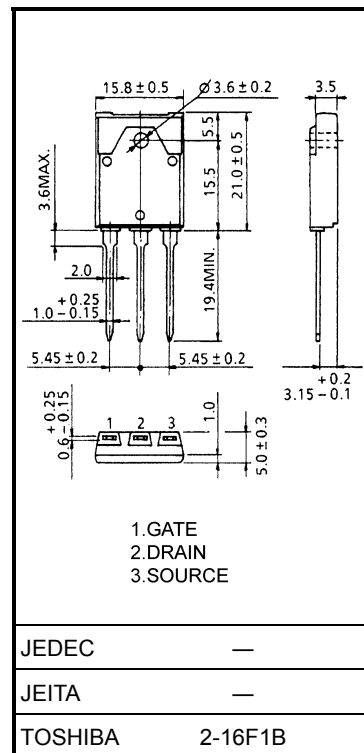
Characteristics		Symbol	Rating	Unit
Drain-source voltage		V_{DSS}	1000	V
Drain-gate voltage ($R_{GS} = 20 k\Omega$)		V_{DGR}	1000	V
Gate-source voltage		V_{GSS}	± 20	V
Drain current	DC (Note 1)	I_D	7	A
	Pulse (Note 1)	I_{DP}	21	
Drain power dissipation ($T_c = 25^\circ C$)		P_D	90	W
Channel temperature		T_{ch}	150	$^\circ C$
Storage temperature range		T_{stg}	$-55 \sim 150$	$^\circ C$

Thermal Characteristics

Characteristics	Symbol	Max	Unit
Thermal resistance, channel to case	$R_{th(ch-c)}$	1.39	$^\circ C / W$
Thermal resistance, channel to ambient	$R_{th(ch-a)}$	41.6	$^\circ C / W$

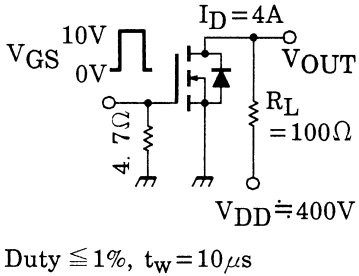
Note 1: Ensure that the channel temperature does not exceed $150^\circ C$.

This transistor is an electrostatic-sensitive device.
Please handle with caution.



Weight: 5.8 g (typ.)

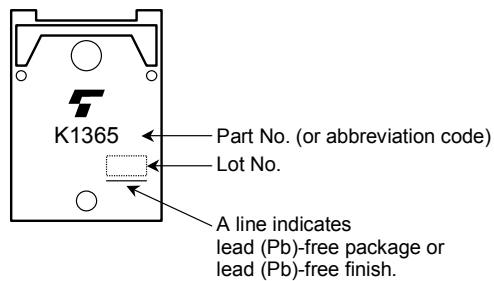
Electrical Characteristics (Ta = 25°C)

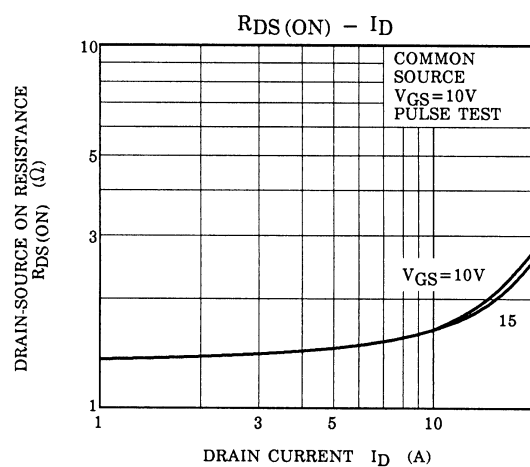
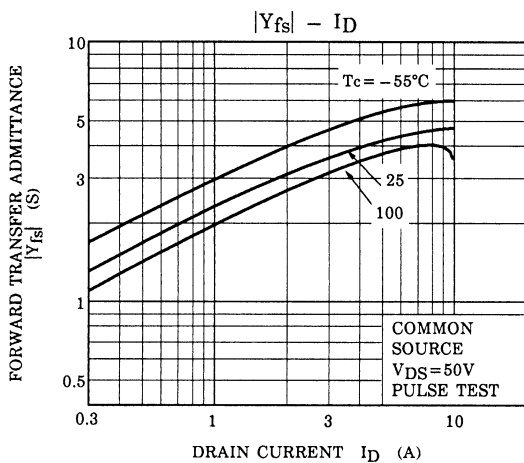
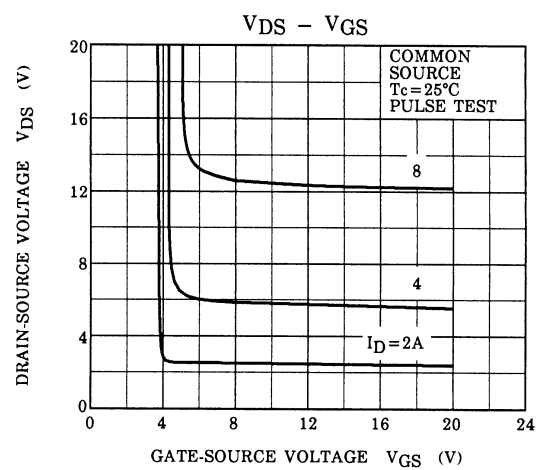
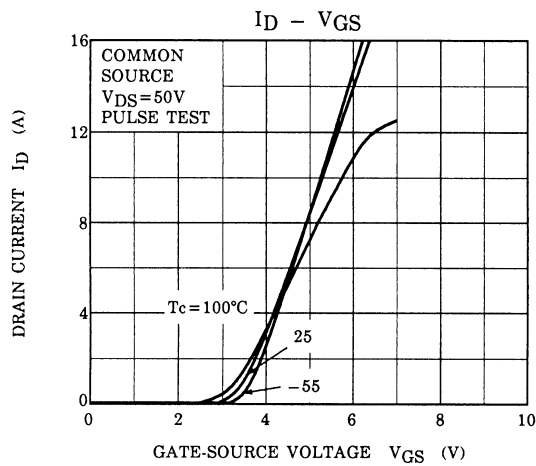
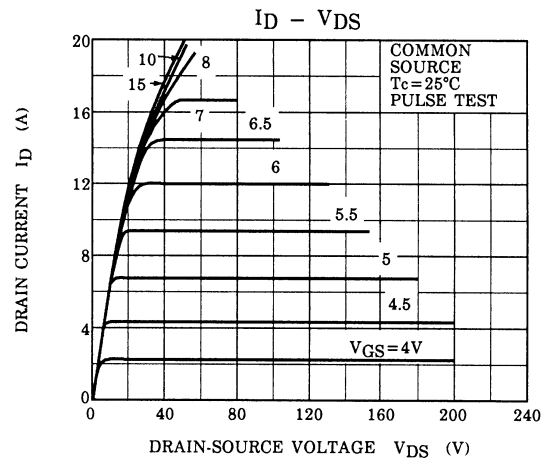
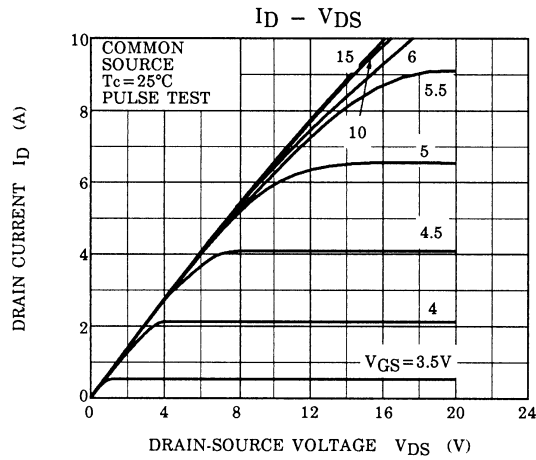
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current	I_{GSS}	$V_{GS} = \pm 20 \text{ V}, V_{DS} = 0 \text{ V}$	—	—	± 50	nA
Drain cut-off current	I_{DSS}	$V_{DS} = 800 \text{ V}, V_{GS} = 0 \text{ V}$	—	—	300	μA
Drain-source breakdown voltage	$V_{(BR) DSS}$	$I_D = 10 \text{ mA}, V_{GS} = 0 \text{ V}$	1000	—	—	V
Gate threshold voltage	V_{th}	$V_{DS} = 10 \text{ V}, I_D = 1 \text{ mA}$	1.5	—	3.5	V
Drain-source ON resistance	$R_{DS(ON)}$	$I_D = 4 \text{ A}, V_{GS} = 10 \text{ V}$	—	1.5	1.8	Ω
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 20 \text{ V}, I_D = 4 \text{ A}$	2.0	4.0	—	S
Input capacitance	C_{iss}	$V_{DS} = 25 \text{ V}, V_{GS} = 0 \text{ V}, f = 1 \text{ MHz}$	—	1300	—	pF
Reverse transfer capacitance	C_{rss}		—	100	—	
Output capacitance	C_{oss}		—	180	—	
Switching time	Rise time		—	25	—	ns
	Turn-on time		—	40	—	
	Fall time		—	20	—	
	Turn-off time		—	100	—	
Total gate charge (Gate-source plus gate-drain)	Q_g	$V_{DD} \approx 400 \text{ V}, V_{GS} = 10 \text{ V}, I_D = 7 \text{ A}$	—	120	—	nC
Gate-source charge	Q_{gs}		—	70	—	
Gate-drain ("miller") charge	Q_{gd}		—	50	—	

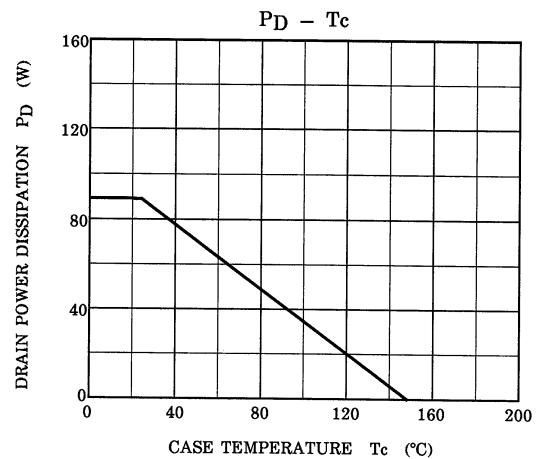
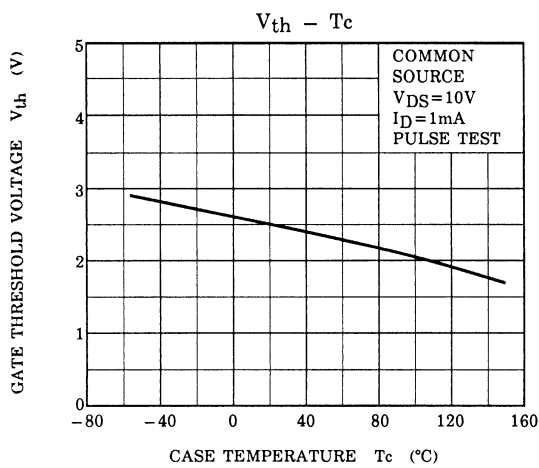
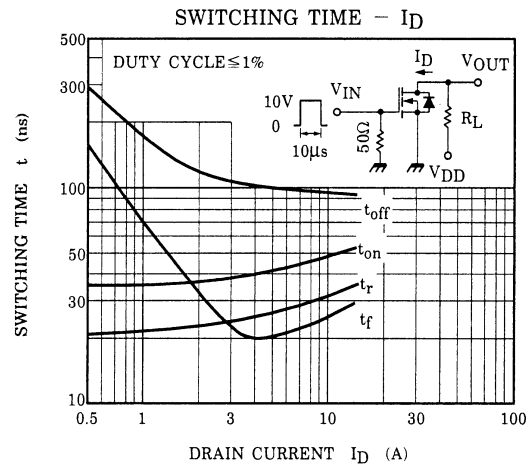
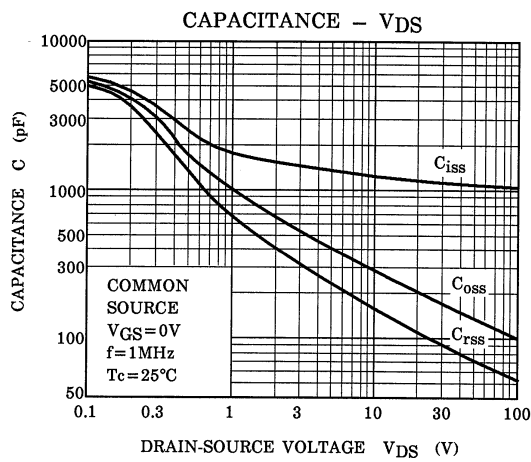
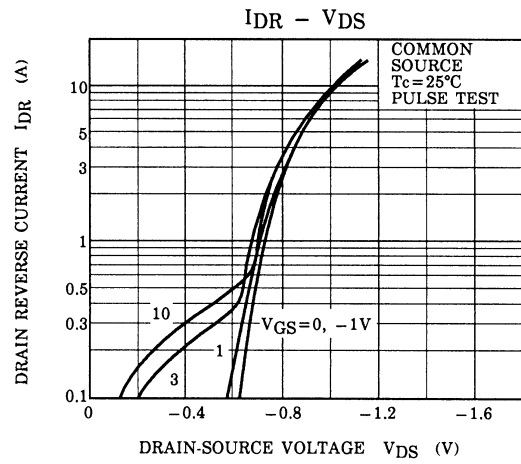
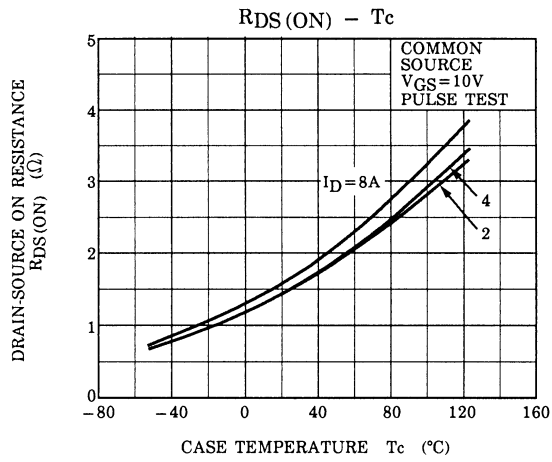
Source-Drain Ratings and Characteristics (Ta = 25°C)

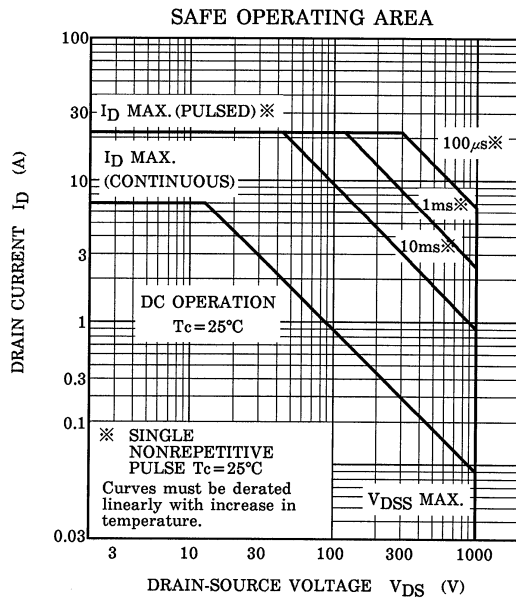
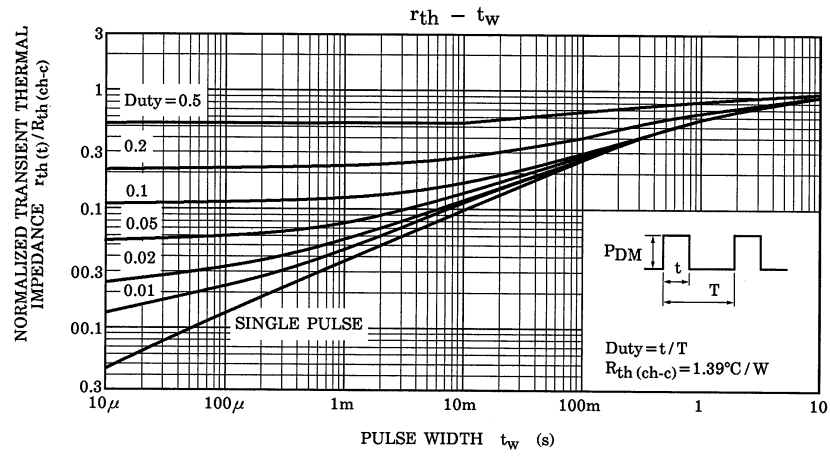
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Continuous drain reverse current (Note 1)	I_{DR}	—	—	—	7	A
Pulse drain reverse current (Note 1)	I_{DRP}	—	—	—	21	A
Forward voltage (diode)	V_{DSF}	$I_{DR} = 7 \text{ A}, V_{GS} = 0 \text{ V}$	—	—	-1.9	V

Marking









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