

2SK1773

Silicon N Channel MOS FET

Application

High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switchingregulator, DC-DC converter

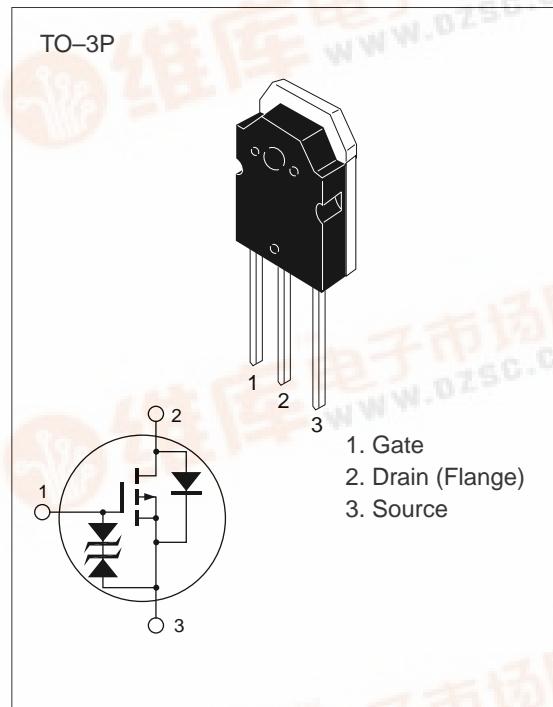


Table 1 Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	1000	V
Gate to source voltage	V_{GSS}	± 30	V
Drain current	I_D	5	A
Drain peak current	$I_{D(\text{pulse})}^*$	15	A
Body-drain diode reverse drain current	I_{DR}	5	A
Channel dissipation	P_{ch}^{**}	100	W
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

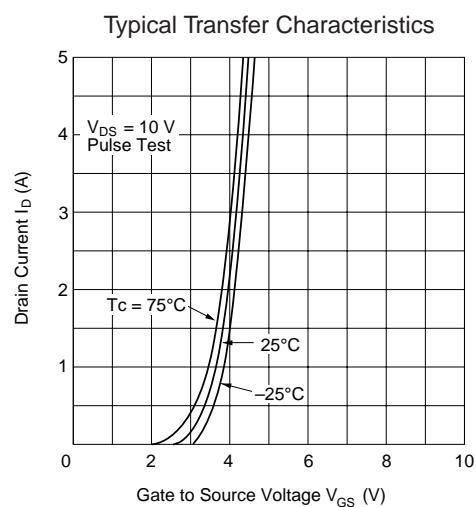
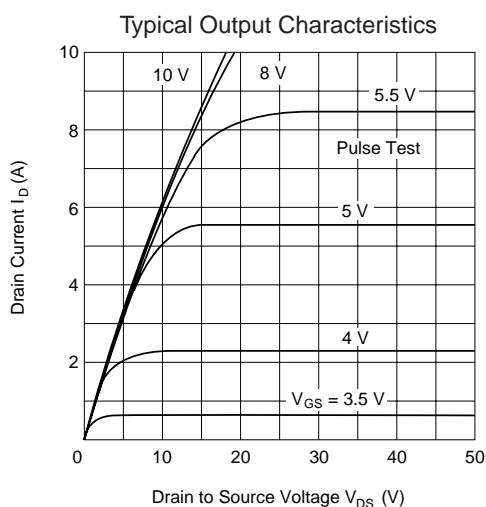
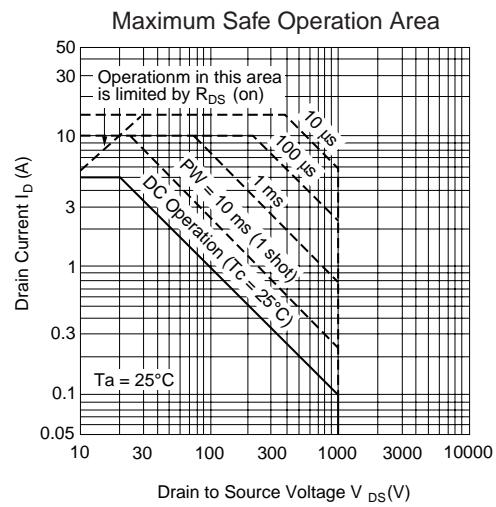
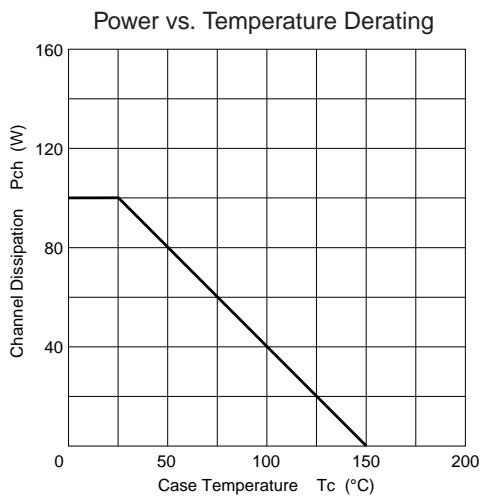
* $PW \leq 10 \mu\text{s}$, duty cycle $\leq 1\%$

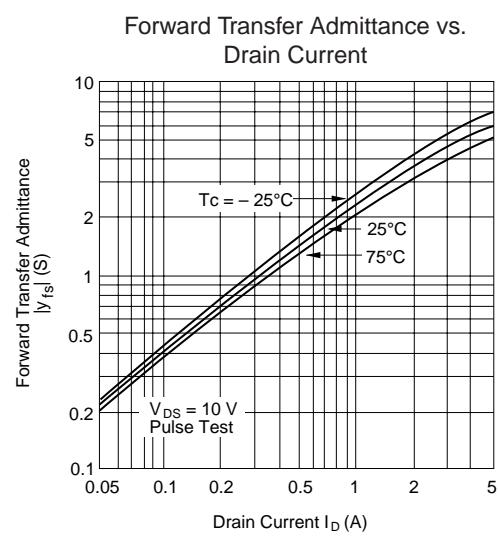
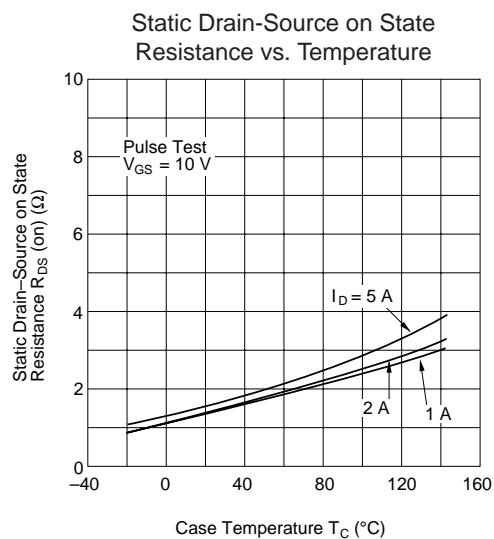
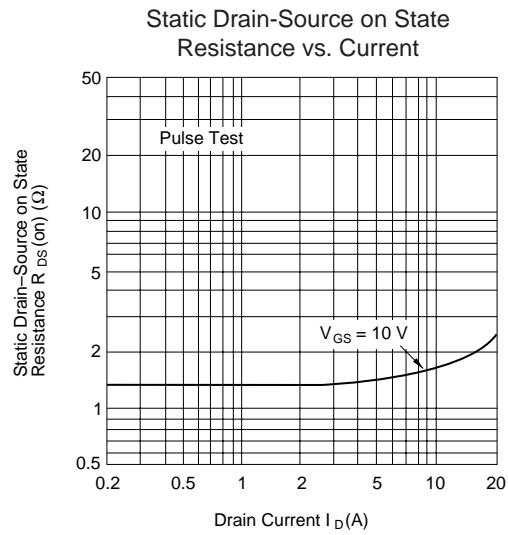
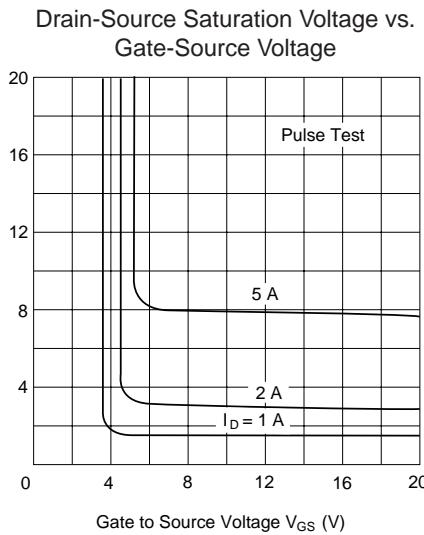
** Value at $T_c = 25^\circ\text{C}$

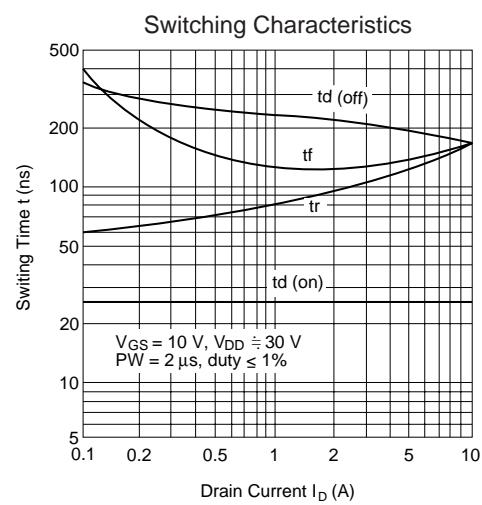
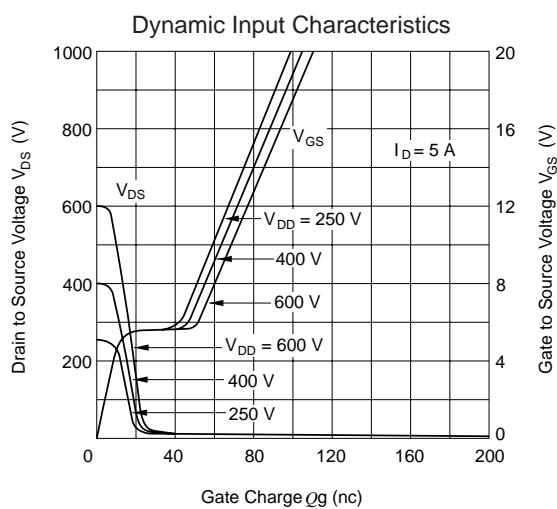
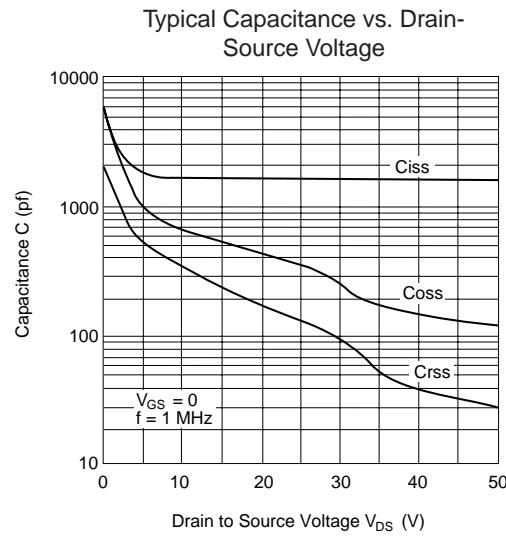
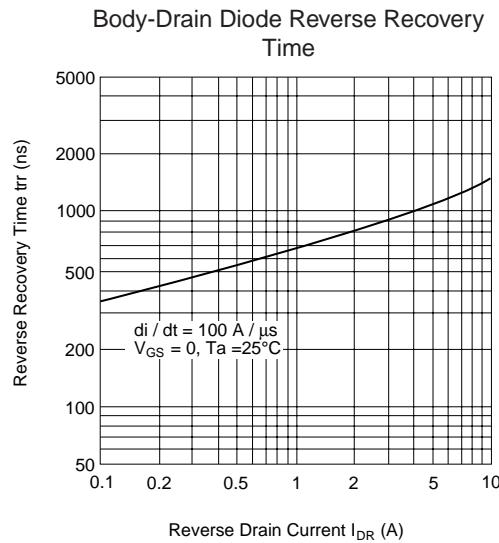
Table 2 Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR)DSS}	1000	—	—	V	I _D = 10 mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR)GSS}	±30	—	—	V	I _G = ±100 µA, V _{DS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	µA	V _{GS} = ±25 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	250	µA	V _{DS} = 800 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	2.0	—	3.0	V	I _D = 1 mA, V _{DS} = 10 V
Static drain to source on state resistance	R _{DS(on)}	—	1.5	2.0	Ω	I _D = 3 A V _{GS} = 10 V *
Forward transfer admittance	y _{fsl}	3.2	5.0	—	S	I _D = 3 A V _{DS} = 20 V *
Input capacitance	C _{iss}	—	1700	—	pF	V _{DS} = 10 V
Output capacitance	C _{oss}	—	700	—	pF	V _{GS} = 0
Reverse transfer capacitance	C _{rss}	—	315	—	pF	f = 1 MHz
Turn-on delay time	t _{d(on)}	—	25	—	ns	I _D = 3 A
Rise time	t _r	—	110	—	ns	V _{GS} = 10 V
Turn-off delay time	t _{d(off)}	—	210	—	ns	R _L = 10 Ω
Fall time	t _f	—	135	—	ns	
Body-drain diode forward voltage	V _{DF}	—	0.85	—	V	I _F = 5 A, V _{GS} = 0
Body-drain diode reverse recovery time	t _{rr}	—	1050	—	ns	I _F = 5 A, V _{GS} = 0, di _F / dt = 100 A / µs

* Pulse Test

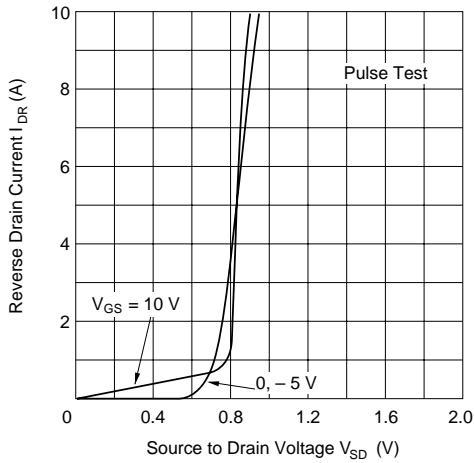




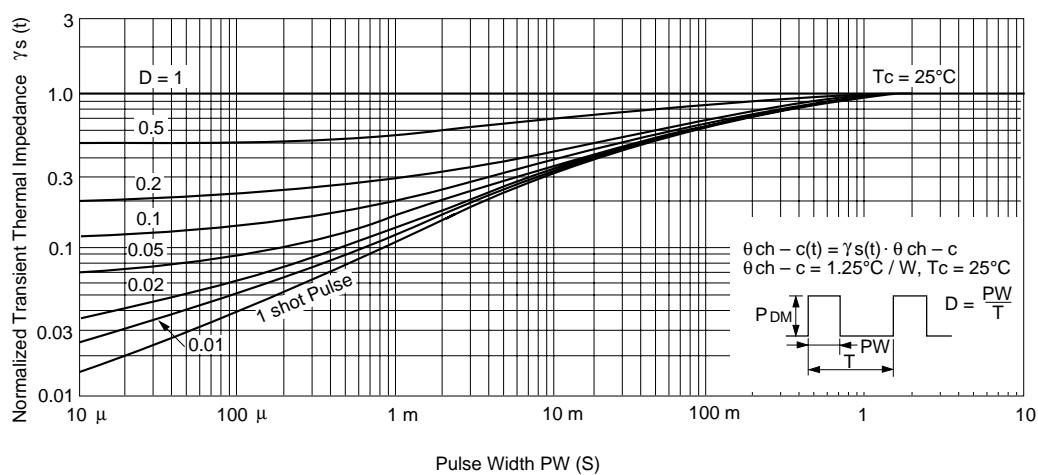


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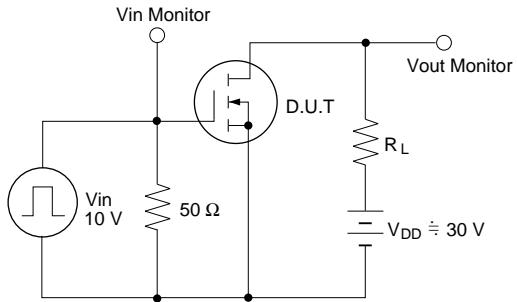
Reverse Drain Current vs. Source to Drain Voltage



Normalized Transient Thermal Impedance vs. Pulse Width



Switching Time Test Circuit



Waveforms

