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2SK1517, 2SK1518

Silicon N-Channel MOS FET

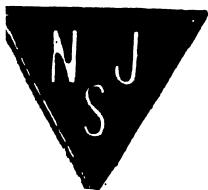
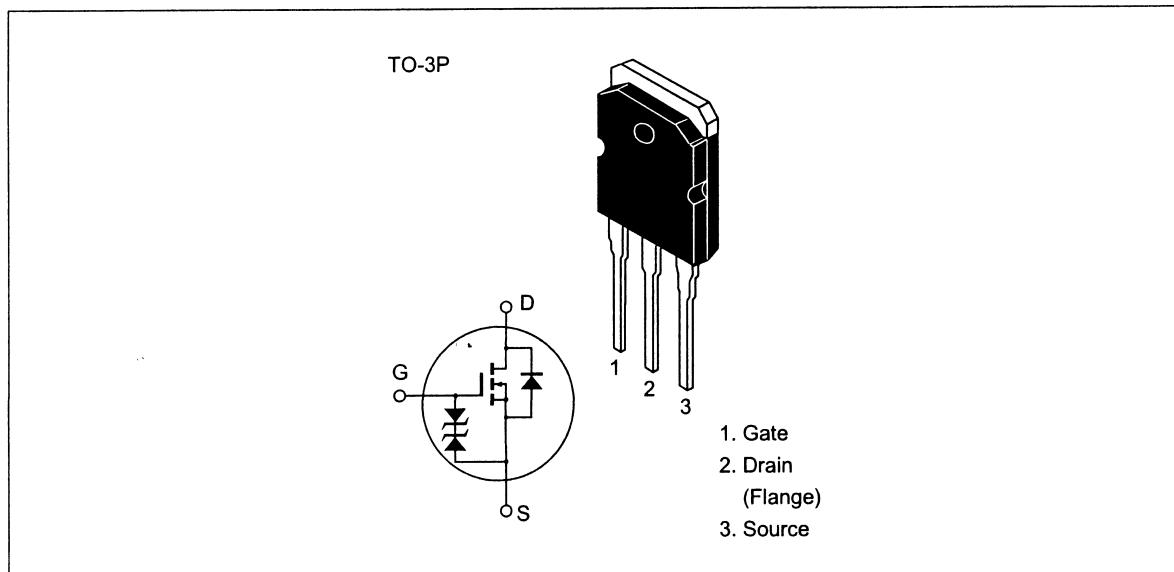
Application

High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- Built-in fast recovery diode ($t_{rr} = 120$ ns)
- Suitable for motor control, switching regulator, DC-DC converter

Outline



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

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Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Ratings	Unit
Drain to source voltage	2SK1517	V _{DSS}	450	V
	2SK1518		500	
Gate to source voltage		V _{GSS}	±30	V
Drain current		I _D	20	A
Drain peak current		I _{D(pulse)} ^{*1}	80	A
Body to drain diode reverse drain current		I _{DR}	20	A
Channel dissipation		Pch ^{*2}	120	W
Channel temperature		T _{ch}	150	°C
Storage temperature		T _{tstg}	-55 to +150	°C

Notes: 1. PW ≤ 10 µs, duty cycle ≤ 1%

2. Value at T_c = 25°C

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Electrical Characteristics (Ta = 25°C)

Item		Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1517	V _{(BR)DSS}	450	—	—	V	I _D = 10 mA, V _{GS} = 0
	2SK1518		500				
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	2SK1517	I _{DSS}	—	—	250	µA	V _{DS} = 360 V, V _{GS} = 0
	2SK1518						V _{DS} = 400 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	2SK1517	R _{DS(on)}	—	0.20	0.25	Ω	I _D = 10 A, V _{GS} = 10 V ^{*1}
	2SK1518		—	0.22	0.27		
Forward transfer admittance		y _{fs}	10	16	—	S	I _D = 10 A, V _{DS} = 10 V ^{*1}
Input capacitance		C _{iss}	—	3050	—	pF	V _{DS} = 10 V, V _{GS} = 0,
Output capacitance		C _{oss}	—	940	—	pF	f = 1 MHz
Reverse transfer capacitance		C _{rss}	—	140	—	pF	
Turn-on delay time		t _{d(on)}	—	35	—	ns	I _D = 10 A, V _{GS} = 10 V,
Rise time		t _r	—	130	—	ns	R _L = 3 Ω
Turn-off delay time		t _{d(off)}	—	240	—	ns	
Fall time		t _f	—	105	—	ns	
Body to drain diode forward voltage		V _{DF}	—	1.0	—	V	I _F = 20 A, V _{GS} = 0
Body to drain diode reverse recovery time		t _{rr}	—	120	—	ns	I _F = 20 A, V _{GS} = 0, di _F /dt = 100 A/µs

Note: 1. Pulse test