

2SK3548 SWITCHING N-CHANNEL POWER MOSFET



1.Scope

This specifies Fuji Power MOSFET 2SK3548-01

2.Construction

N-Channel enhancement mode power MOSFET

3.Applications

for Switching

4.Outview

TO-3P Outview See to 8/18 page

5.Absolute Maximum Ratings at Tc=25°C (unless otherwise specified)

Description	Symbol	Characteristics	Unit	Remarks
Drain-Source Voltage	V_{DS}	900	V	
	V_{DSX}	900	V	$V_{GS}=-30V$
Continuous Drain Current	I_D	10	A	
Pulsed Drain Current	I_{DP}	± 40	A	
Gate-Source Voltage	V_{GS}	± 30	V	
Repetitive and Non-repetitive Maximum Avalanche Current	I_{AR}	10	A	Note *1
Non-Repetitive Maximum Avalanche Energy	E_{AS}	826	mJ	Note *2
Repetitive Maximum Avalanche Energy	E_{AR}	18	mJ	Note *3
Maximum Drain-Source dV/dt	dV_{DS}/dt	40	kV/μs	$V_{DS} \leq 900V$
Peak Diode Recovery dV/dt	dV/dt	5	kV/μs	Note *4
Maximum Power Dissipation	P_D	180	W	$T_c=25^\circ C$
		2.50		$T_a=25^\circ C$
Operating and Storage	T_{ch}	150	°C	
Temperature range	T_{stg}	-55 to +150	°C	

Static Ratings 6.Electrical Characteristics at Tc=25°C (unless otherwise specified)

Description	Symbol	Conditions	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A$ $V_{GS}=0V$	900	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$I_D=250\mu A$ $V_{DS}=V_{GS}$	3.0	-	5.0	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=900V$ $V_{GS}=0V$ $T_{ch}=25^\circ C$	-	-	25	μA
		$V_{DS}=720V$ $V_{GS}=0V$ $T_{ch}=125^\circ C$	-	-	250	
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$	-	-	100	nA
Drain-Source On-State Resistance	$R_{DS(on)}$	$I_D=5A$	-	1.08	1.40	Ω
		$V_{GS}=10V$	-	1.08	1.40	

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Dynamic Ratings

Description	Symbol	Conditions	min.	typ.	max.	Unit
Forward Transconductance	g_{fs}	$I_D=5A$ $V_{DS}=25V$	6	12	-	S
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$	-	1250	1900	pF
Output Capacitance	C_{oss}		-	160	240	
Reverse Transfer Capacitance	C_{rss}		-	12	18	
Turn-On Time	$t_{d(on)}$	$V_{GS}=10V$ $I_D=5A$ $R_{GS}=10\Omega$	-	26	39	ns
	t_r		-	23	35	
Turn-Off Time	$t_{d(off)}$		-	60	90	
	t_f		-	17	26	
Total Gate Charge	Q_G	$V_{GS}=10V$ $I_D=10A$	-	34.5	52	nC
Gate-Source Charge	Q_{GS}		-	5	7.5	
Gate-Drain Charge	Q_{GD}		-	12	18	

Reverse Diode

Description	Symbol	Conditions	min.	typ.	max.	Unit
Diode Forward On-Voltage	V_{SD}	$I_F=10A$ $V_{GS}=0V$ $T_{ch}=25^\circ C$	-	0.90	1.50	V
Reverse Recovery Time	t_{rr}	$I_F=10A$ $V_{GS}=0V$ $-di/dt=100A/\mu s$ $T_{ch}=25^\circ C$	-	3.1	-	μs
Reverse Recovery Charge	Q_{rr}		-	17.0	-	μC

7.Thermal Resistance

Description	Symbol	min.	typ.	max.	Unit
Channel to Case	$R_{th(ch-c)}$			0.69	$^\circ C/W$
Channel to Ambient	$R_{th(ch-a)}$			50	$^\circ C/W$