2SK1818-M SIPMOS® FUJI POWER MOS-FET

N-CHANNEL ENHANCEMENT TYPE MOS-FET

F-V SERIES

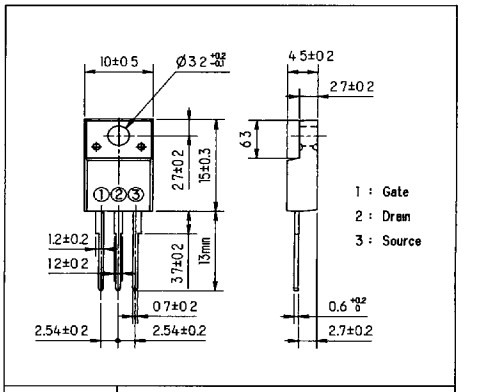
■ Features

- Include fast recovery diode
- High voltage
- Low driving power

■ Applications

- Motor controllers
- Inverters
- Choppors

■ Outline Drawings



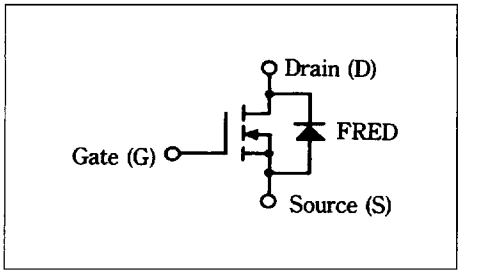
JEDEC	———
EIAJ	SC-67

■ Max. Ratings and Characteristics

●Absolute Maximum Ratings(Tc=25°C)

Items	Symbols	Ratings	Units
Drain-source voltage	V_{DSS}	250	V
Continuous drain current	I_D	20	A
Pulsed drain current	$I_{D(puls)}$	80	A
Continuous reverse drain current	I_{DR}	20	A
Gate-source peak voltage	V_{GSS}	±20	V
Max. power dissipation	P_D	50	W
Operating and storage temperature range	T_{ch}	150	°C
	T_{stg}	−55～+150	°C

■ Equivalent Circuit Schematic



●Electrical Characteristics(Tc=25°C)

Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	$V_{(BR)DSS}$	I_D=1mA V_{GS}=0V	250			V
Gate threshold voltage	$V_{GS(th)}$	I_D=10mA V_{DS}=V_{GS}	2.1	3.0	4.0	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=250V V_{GS}=0V T_{ch}=25°C		10	500	μA
Gate-source leakage current	I_{GSS}	V_{GS}=±20V V_{DS}=0V		10	100	nA
Drain-source on-state resistance	$R_{DS(on)}$	I_D=10A V_{GS}=10V		0.16	0.25	Ω
Forward transconductance	g_{fs}	I_D=10A V_{DS}=25V	6	12		S
Input capacitance	C_{iss}	V_{DS}=25V		1100	1600	
Output capacitance	C_{oss}	V_{GS}=0V		240	360	pF
Reverse transfer capacitance	C_{rss}	f =1MHz		130	200	
Turn-on time t_{on} (t_{on}=$t_{d(on)}$+t_r)	$td_{(on)}$	V_{CC}=150V R_G=25Ω		30	45	
	t_r	I_D=20A		50	80	ns
Turn-off time t_{off} (t_{off}=$t_{d(off)}$+t_f)	$td_{(off)}$	V_{GS}=10V		200	300	
	t_f			100	150	
Diode forward on-voltage	V_{SD}	I_F=I_{DR} V_{GS}=0V T_{ch}=25°C		0.95	1.8	V
Reverse recovery time	t_{rr}	I_F=I_{DR} d_i/d_t=100A/μs T_{ch}=25°C		100	150	ns

●Thermal Characteristics

Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	$R_{th(ch-a)}$	channel to air			62.5	°C/W
	$R_{th(ch-c)}$	channel to case			2.78	°C/W