2SK727-01

FUJI POWER MOS-FET

N-CHANNEL SILICON POWER MOS-FET
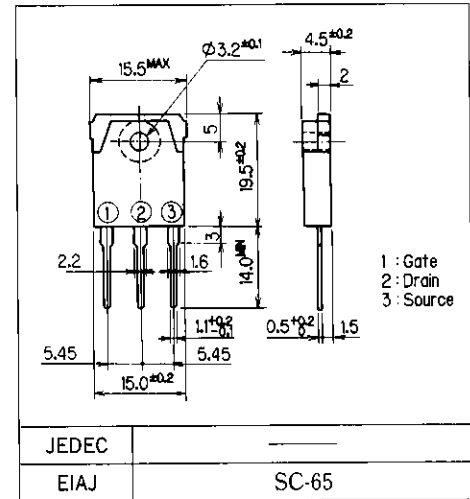
F-I SERIES

■Features

- High speed switching
- Low on-resistance
- No secondary breakdown
- Low driving power
- High voltage
- Avalanche-proof

■Applications

- Switching regulators
- UPS
- DC-DC converters
- General purpose power amplifier

■Outline Drawings

JEDEC	—
EIAJ	SC-65

■Max. Ratings and Characteristics

●Absolute Maximum Ratings(Tc=25°C)

Items	Symbols	Ratings	Units
Drain-source voltage	V_{DSS}	900	V
Continuous drain current	I_D	5	A
Pulsed drain current	$I_{D(puls)}$	20	A
Continuous reverse drain current	I_{DR}	5	A
Gate-source peak voltage	V_{GSS}	±20	V
Max. power dissipation	P_D	125	W
Operating and storage temperature range	T_{ch}	150	°C
	T_{stg}	−55~+150	°C

■Equivalent Circuit Schematic

Drain (D)

Gate (G)
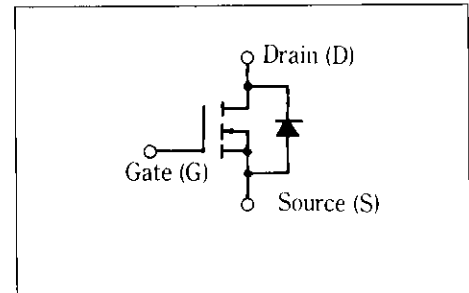
Source (S)

●Electrical Characteristics(Tc=25°C)

Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D=1mA$ $V_{GS}=0V$	900			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}	$V_{DS}=900V$ $V_{GS}=0V$ $T_{ch}=25°C$		10	500	μA
Gate-source leakage current	I_{GSS}	$V_{GS}=±20V$ $V_{DS}=0V$		10	100	nA
Drain-source on-state resistance	$R_{DS(on)}$	$I_D=2.5A$ $V_{GS}=10V$		2.0	2.5	Ω
Forward transconductance	g_{fs}	$I_D=2.5A$ $V_{DS}=25V$	3.0	6.0		S
Input capacitance	C_{iss}	$V_{DS}=25V$		1500	2400	
Output capacitance	C_{oss}	$V_{GS}=0V$		150	240	pF
Reverse transfer capacitance	C_{rss}	$f=1MHz$		50	80	
Switching time ($t_{off}=t_{d(off)}+t_f$)	t_{on}	$V_{CC}=30V$ $R_G=50Ω$		110	170	
	$t_{d(off)}$	$I_D=2.4A$		300	450	ns
	t_f	$V_{GS}=10V$		120	180	
Diode forward on-voltage	V_{SD}	$I_F=2×I_{DR}$ $V_{GS}=0V$ $T_{ch}=25°C$		1.0	1.5	V
Reverse recovery time	t_{rr}	$I_F=I_{DR}$ $di/d_t=100A/μs$ $T_{ch}=25°C$		900		ns

●Thermal Characteristics

Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance	$R_{th(ch-a)}$	channel to air			35	°C/W
	$R_{th(ch-c)}$	channel to case			1.0	°C/W