

2SK955

SIPMOS® FUJI POWER MOS-FET

N-CHANNEL SILICON POWER MOS-FET

F-I SERIES

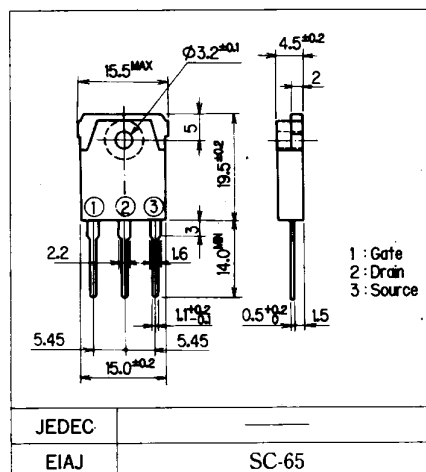
Features

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

Applications

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

Outline Drawings :

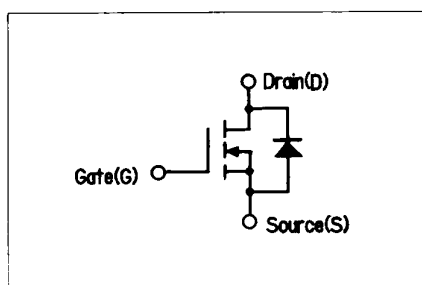


Max. Ratings and Characteristics

● Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

Items	Symbols	Ratings	Units
Drain-source voltage	V_{DSS}	800	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	$^\circ\text{C}$
	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

Equivalent Circuit Schematic :



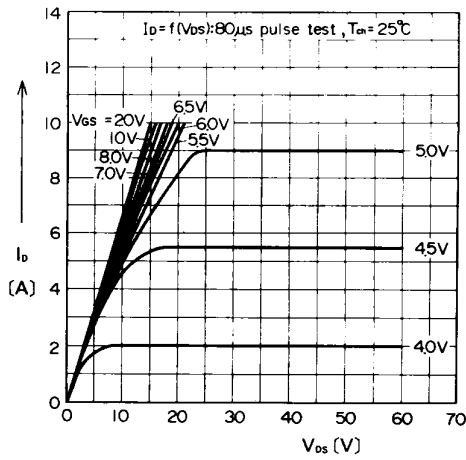
● Electrical Characteristics ($T_c = 25^\circ\text{C}$)

Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}$ $V_{GS} = 0\text{V}$	800			V
Gate threshold voltage	$V_{GS(th)}$	$I_D = 10\text{mA}$ $V_{DS} = V_{GS}$	2.1	3.0	4.0	V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 800\text{V}$ $V_{GS} = 0\text{V}$ $T_{ch} = 25^\circ\text{C}$		10	500	μA
Gate-source leakage current	I_{GSS}	$V_{GS} = \pm 20\text{V}$ $V_{DS} = 0\text{V}$		10	100	nA
Drain-source on-stage resistance	$R_{DS(on)}$	$I_D = 2.5\text{A}$ $V_{GS} = 10\text{V}$		1.5	2.0	Ω
Forward transconductance	g_{fs}	$I_D = 2.5\text{A}$ $V_{DS} = 25\text{V}$	3.0	6.0		S
Input capacitance	C_{iss}	$V_{DS} = 25\text{V}$		1500	2400	pF
Output capacitance	C_{oss}	$V_{GS} = 0\text{V}$		150	240	
Reverse transfer capacitance	C_{rss}	$f = 1\text{MHz}$		50	80	
Switching time ($t_{off} = t_{d(off)} + t_r$)	t_{on}	$V_{CC} = 30\text{V}$ $R_{GS} = 50\Omega$		110	170	ns
	$t_{d(off)}$	$I_D = 2.5\text{A}$		300	450	
	t_r	$V_{GS} = 10\text{V}$		120	180	
Diode forward on-voltage	V_{SD}	$I_F = 2 \times I_{DR}$ $V_{GS} = 0\text{V}$ $T_{ch} = 25^\circ\text{C}$		1.0	1.5	V
Reverse recovery time	t_{rr}	$I_F = I_{DR}$ $di/dt = 100\text{A}/\mu\text{s}$ $T_{ch} = 25^\circ\text{C}$		500		ns

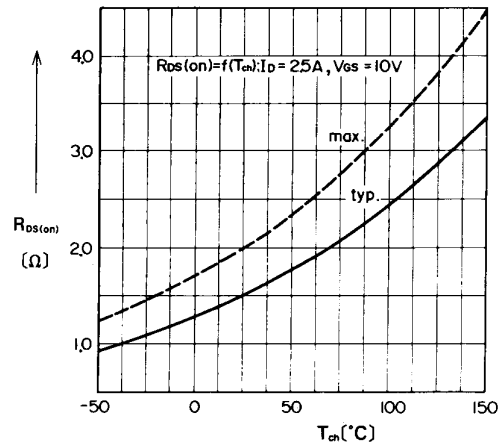
● Thermal Characteristics

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

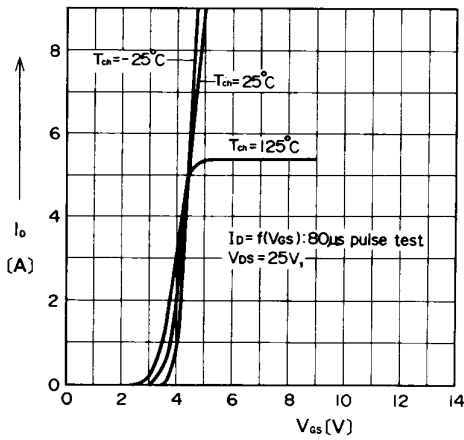
■ Characteristics



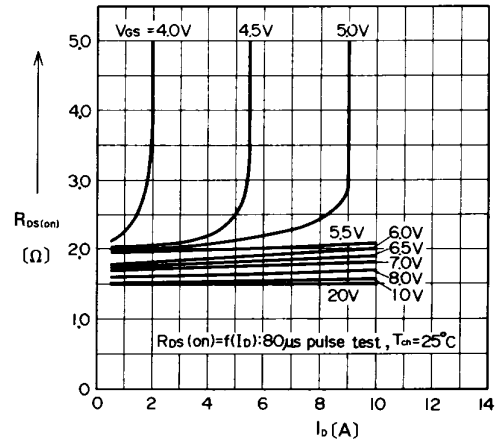
Typical Output Characteristics



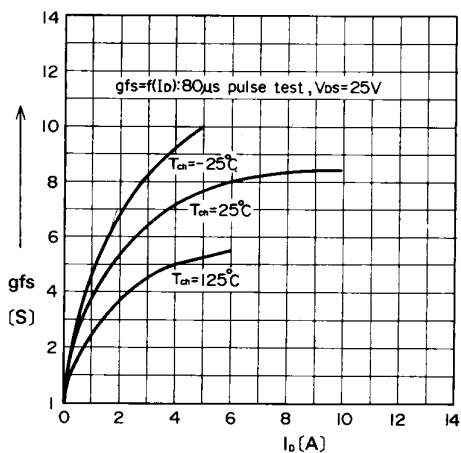
On State Resistance vs. T_{ch}



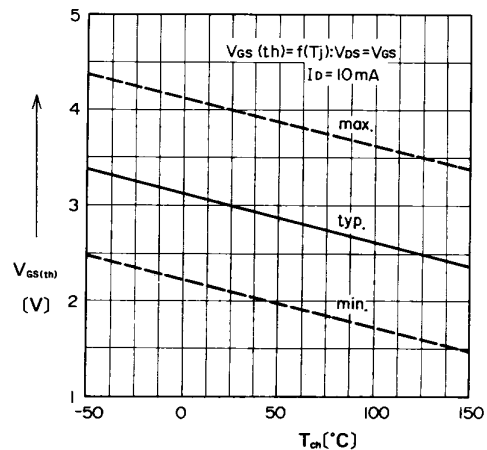
Typical Transfer Characteristics



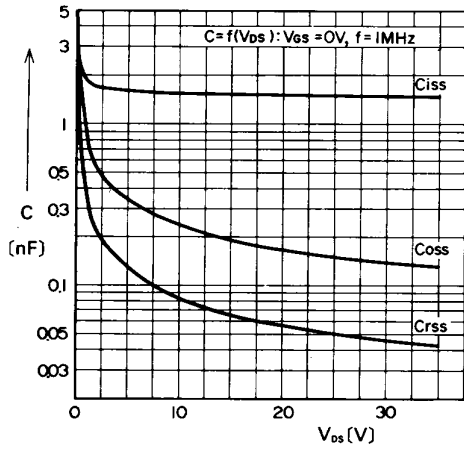
Typical Drain-Source on State Resistance vs. I_D



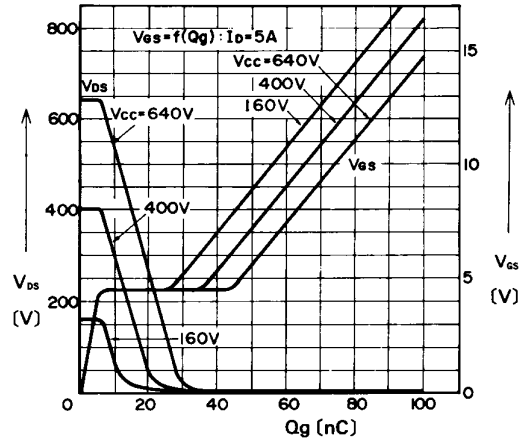
Typical Forward Transconductance vs. I_D



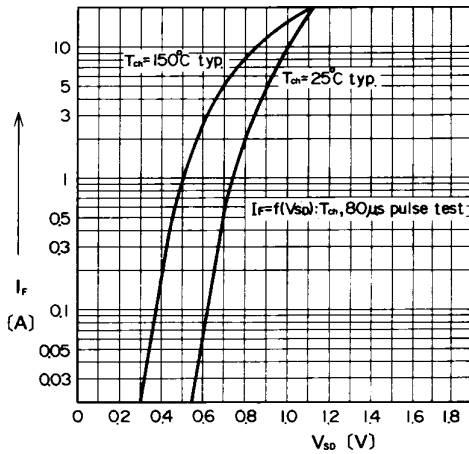
Gate Threshold Voltage vs T_{ch}



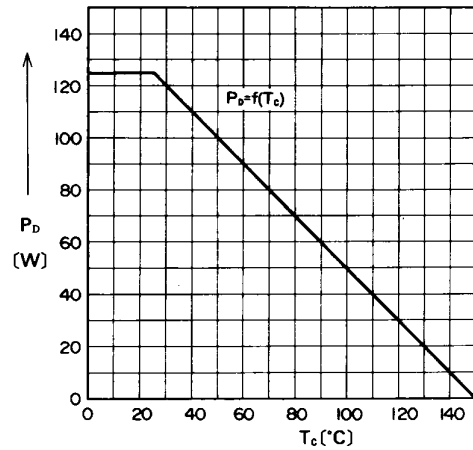
Typical Capacitance vs. V_{DS}



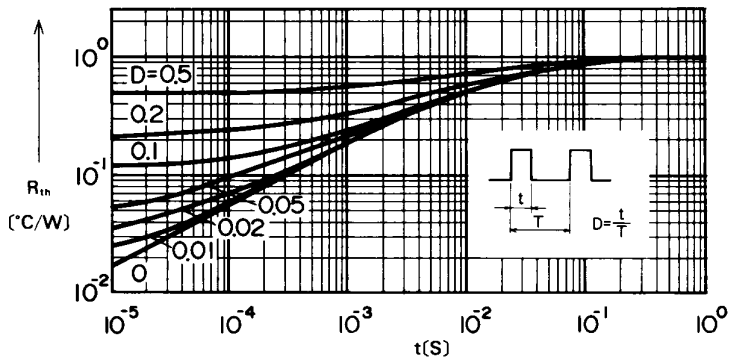
Typical Input Charge



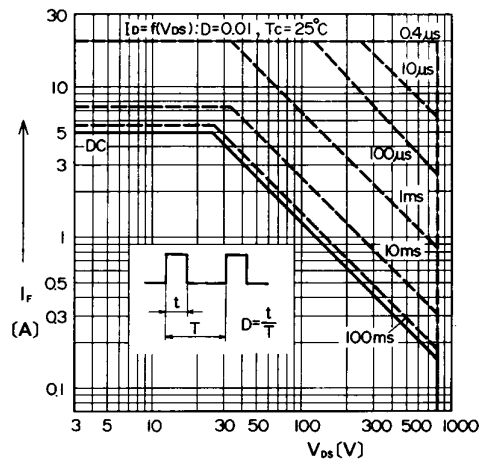
Forward Characteristics of Reverse Diode



Allowable Power Dissipation vs. T_C



Transient Thermal Impedance



Safe Operating Area