

N-CHANNEL SILICON POWER MOS-FET

查询"2SK903M"供应商

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

Max. Ratings and Characteristics

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

Items	Symbols	Ratings	Units
Drain-source voltage	V_{DS}	800	V
Continuous drain current	I_D	3	A
Pulsed drain current	$I_{D(puls)}$	12	A
Continuous reverse drain current	I_{DR}	3	A
Gate-source peak voltage	V_{GSS}	± 20	V
Max. power dissipation	P_D	40	W
Operating and storage temperature range	T_{ch} T_{stg}	150 -55 ~ +150	$^\circ\text{C}$

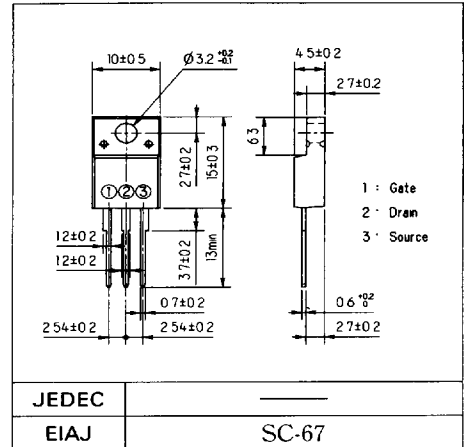
● Electrical Characteristics($T_c=25^\circ\text{C}$)

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-state resistance	$R_{DS(on)}$	$I_D=1.5\text{A}$ $V_{GS}=10\text{V}$		3.0	4.0	Ω
Forward transconductance	g_{fs}	$I_D=1.5\text{A}$ $V_{DS}=25\text{V}$	2.0	4.0		S
Input capacitance	C_{iss}	$V_{DS}=25\text{V}$		900	1400	pF
Output capacitance	C_{oss}	$V_{GS}=0\text{V}$		90	140	
Reverse transfer capacitance	C_{rss}	$f=1\text{MHz}$		35	60	
Switching time ($t_{off}=t_{d(off)}+t_r$)	t_{on}	$V_{CC}=30\text{V}$ $R_G=50\Omega$		60	90	ns
	$t_{d(off)}$	$I_D=2.1\text{A}$		150	250	
	t_r	$V_{GS}=10\text{V}$		60	90	
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	1.35	V
Reverse recovery time	t_{rr}	$I_F=I_{DR}$ $di/dt=100\text{A}/\mu\text{s}$ $T_{ch}=25^\circ\text{C}$		400		ns

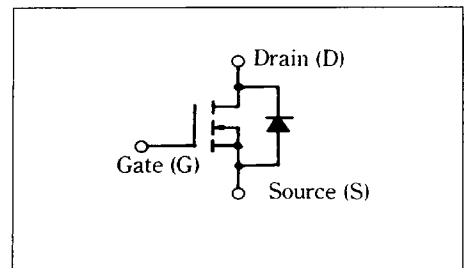
● Thermal Characteristics

Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance	$R_{th(ch-a)}$	channel to air			62.5	$^\circ\text{C}/\text{W}$
	$R_{th(ch-c)}$	channel to case			3.125	$^\circ\text{C}/\text{W}$

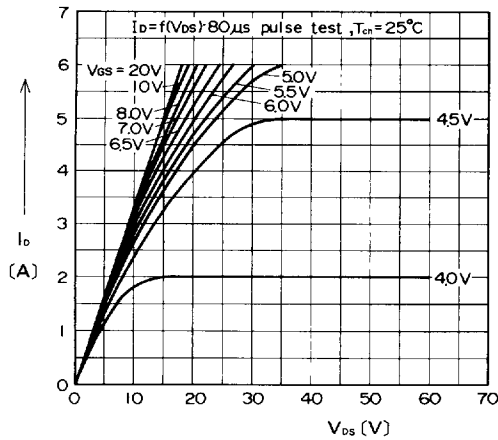
Outline Drawings



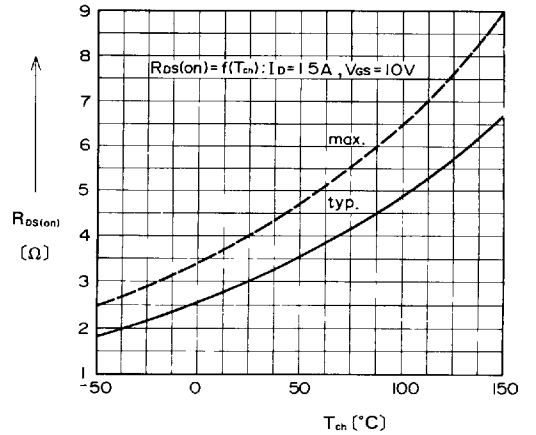
Equivalent Circuit Schematic



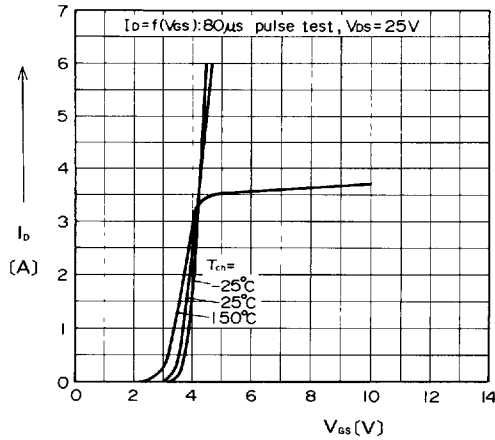
[查询"2SK903M"供应商](#)



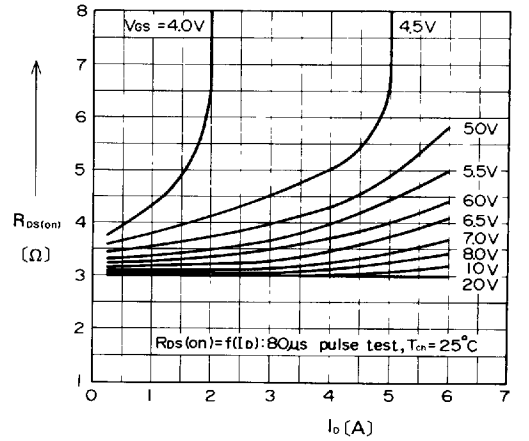
Typical Output Characteristics



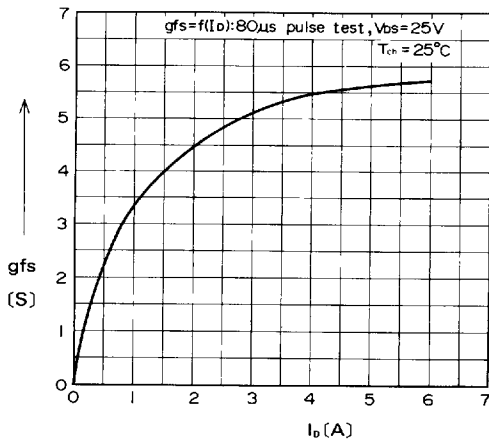
On State Resistance vs. T_{ch}



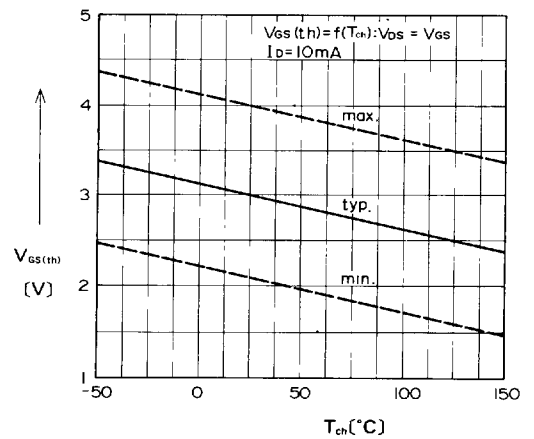
Typical Transfer Characteristic



Typical Drain-Source on State Resistance vs. I_D

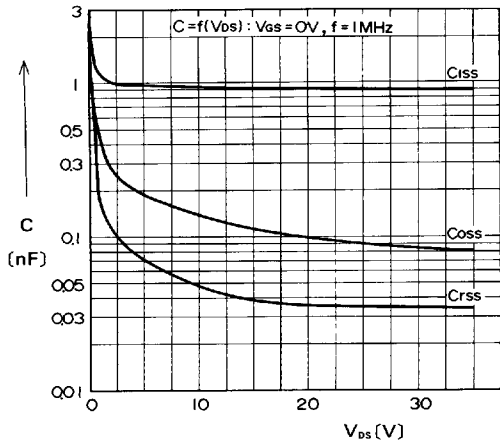


Typical Forward Transconductance vs. I_D

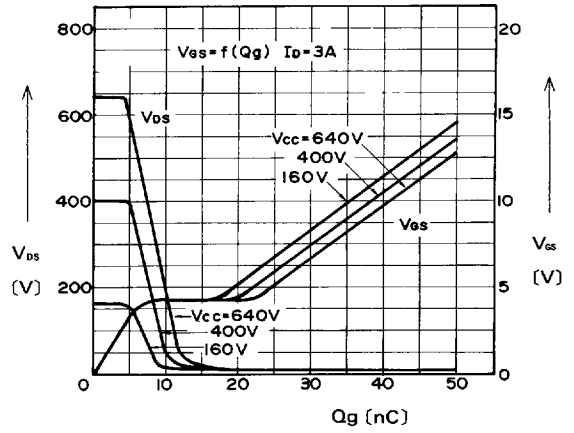


Gate Threshold Voltage vs T_{ch}

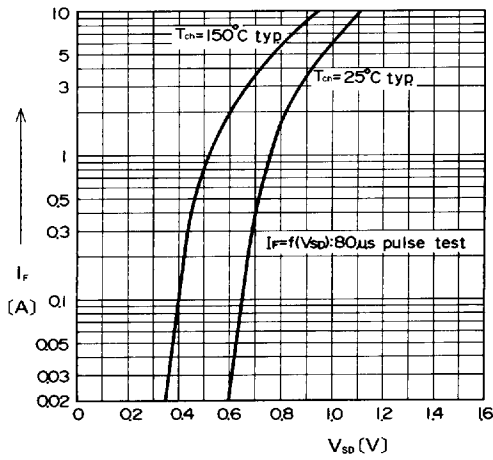
[查询"2SK903M"供应商](#)



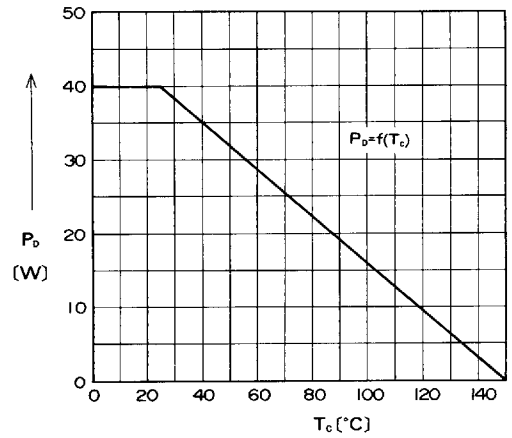
Typical Capacitance vs. V_{ds}



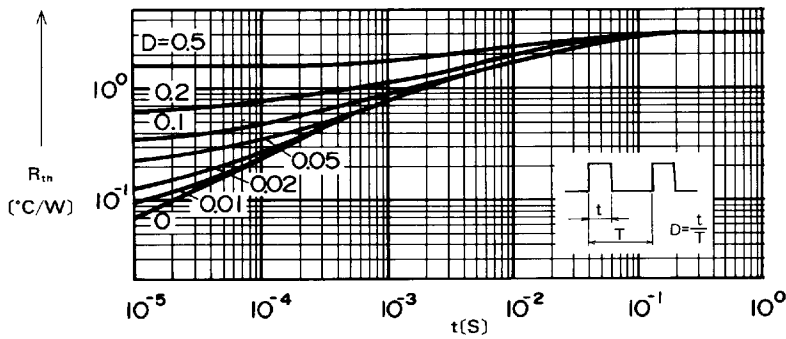
Typical Input Charge



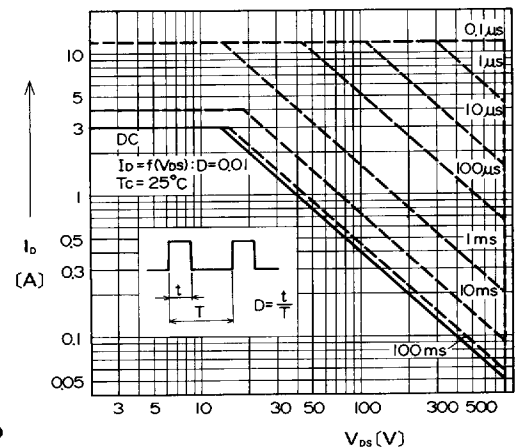
Forward Characteristics of Reverse Diode



Allowable Power Dissipation vs. T_c



Transient Thermal Impedance



Safe Operating Area