

2SK2903-01MR

FUJI POWER MOS-FET

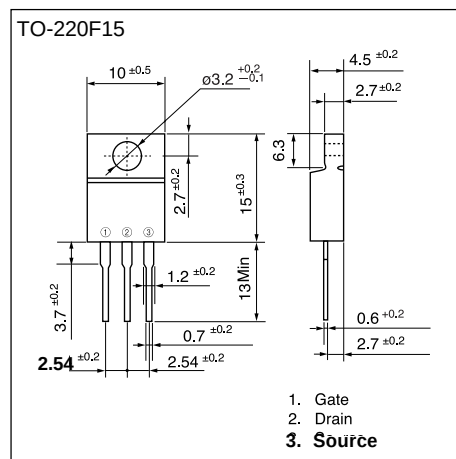
N-CHANNEL SILICON POWER MOS-FET

■ Features

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

■ Applications

Switching regulators
UPS (Uninterruptible Power Supply)
DC-DC converters

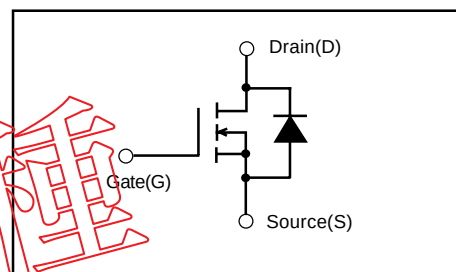


■ Maximum ratings and characteristicAbsolute maximum ratings

● (T_c=25°C unless otherwise specified)

Item	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	60	V
Continuous drain current	I_D	± 50	A
Pulsed drain current	$I_{D(puls)}$	± 200	A
Gate-source voltage	V_{GS}	± 30	V
Maximum Avalanche Energy	E_{AV}^{*1}	720.8	mJ
Max. power dissipation	P_D	50	W
Operating and storage temperature range	T_{ch} T_{stg}	$+150$ -55 to $+150$	$^{\circ}C$ $^{\circ}C$

■ Equivalent circuit schematic



● **Electrical characteristics ($T_c = 25^\circ\text{C}$ unless otherwise specified)**

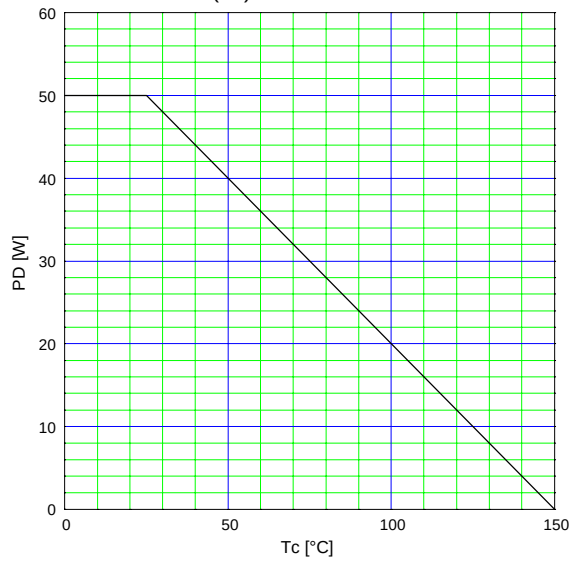
Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V_{DS}	$I_D=1mA$ $V_{GS}=0V$	60			V
Gate threshold voltage	$V_{GS(th)}$	$I_D=10mA$ $V_{DS}=V_{GS}$	2.5	3.0	3.5	V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=60V$ $T_{ch}=25^{\circ}C$		10	500	μA
		$V_{GS}=0V$ $T_{ch}=125^{\circ}C$		0.2	1.0	mA
Gate-source leakage current	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$		10	100	nA
Drain-source on-state resistance	$R_{DS(on)}$	$I_D=40A$ $V_{GS}=10V$		9.5	12	m Ω
Forward transconductance	g_{fs}	$I_D=40A$ $V_{DS}=25V$	20	40		S
Input capacitance	C_{iss}	$V_{DS}=25V$		3100	4650	pF
Output capacitance	C_{oss}	$V_{GS}=0V$		1300	1950	
Reverse transfer capacitance	C_{rss}	$f=1MHz$		350	530	
Turn-on time t_{on}	$t_{d(on)}$	$V_{CC}=30V$ $I_D=80A$		20	30	ns
	t_r	$V_{GS}=10V$		85	120	
Turn-off time t_{off}	$t_{d(off)}$	$R_{GS}=10\Omega$		88	130	
	t_f			65	120	
Avalanche capability	I_{AV}	$L=100\mu H$ $T_{ch}=25^{\circ}C$	50			A
Diode forward on-voltage	V_{SD}	$I_F=50A$ $V_{GS}=0V$ $T_{ch}=25^{\circ}C$		1.0	1.5	V
Reverse recovery time	t_{rr}	$I_F=50A$ $V_{GS}=0V$		70		ns
Reverse recovery charge	Q_{rr}	$-di/dt=100A/\mu s$ $T_{ch}=25^{\circ}C$		0.13		μC

● Thermal characteristics

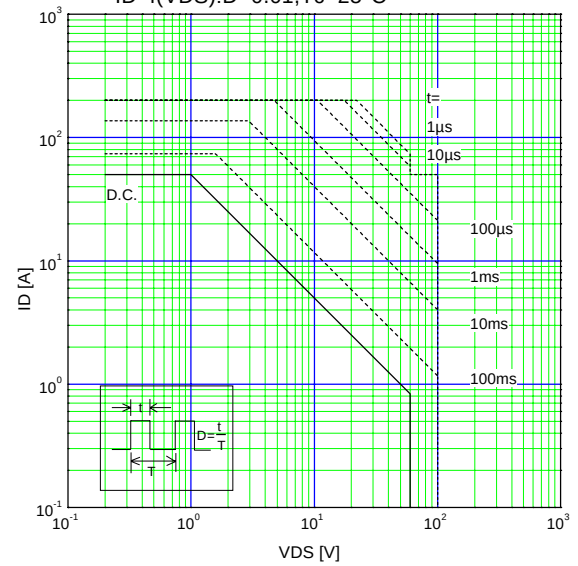
Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			2.5	°C/W
	R _{th(ch-a)}	channel to ambient			62.5	°C/W

Characteristics

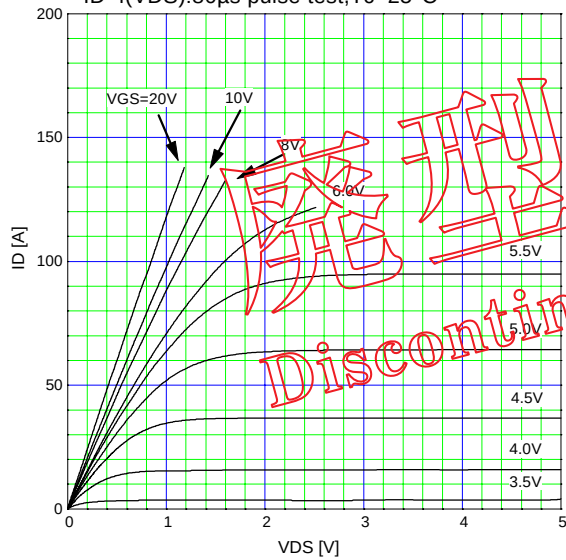
Power Dissipation
 $P_D = f(T_c)$



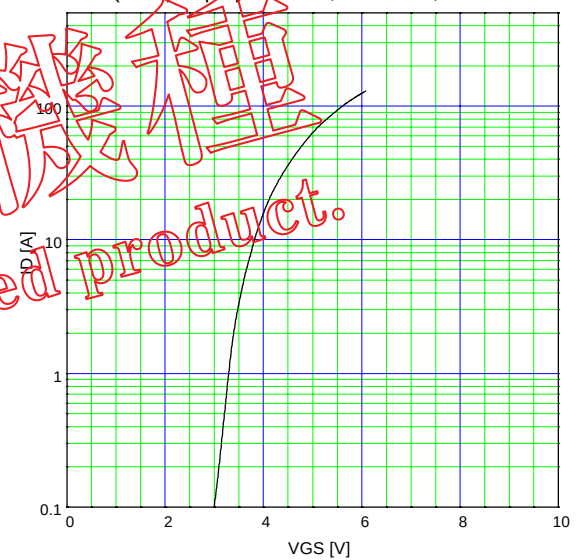
Safe operating area
 $I_D = f(V_{DS}): D=0.01, T_c=25^{\circ}\text{C}$



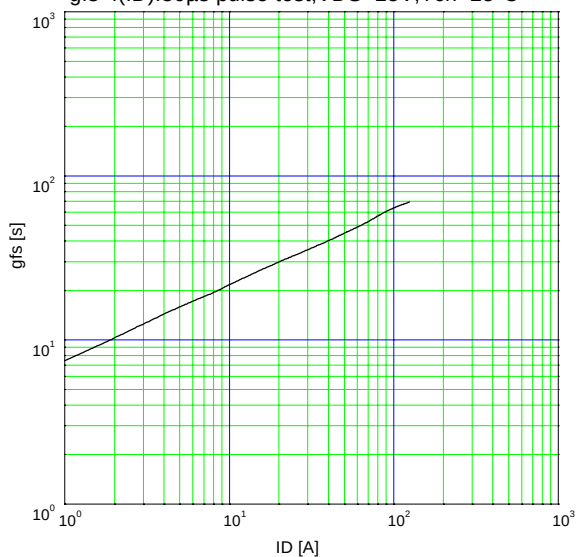
Typical output characteristics
 $I_D = f(V_{DS}): 80\mu\text{s}$ pulse test, $T_c=25^{\circ}\text{C}$



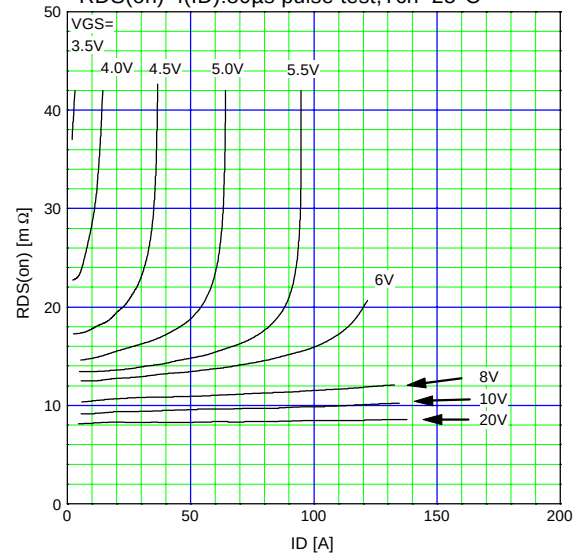
Typical transfer characteristics
 $I_D = f(V_{GS}): 80\mu\text{s}$ pulse test, $V_{DS}=25\text{V}, T_{ch}=25^{\circ}\text{C}$

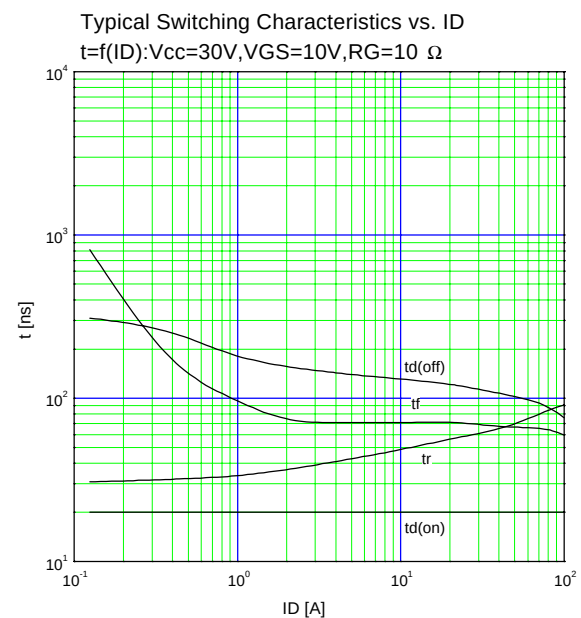
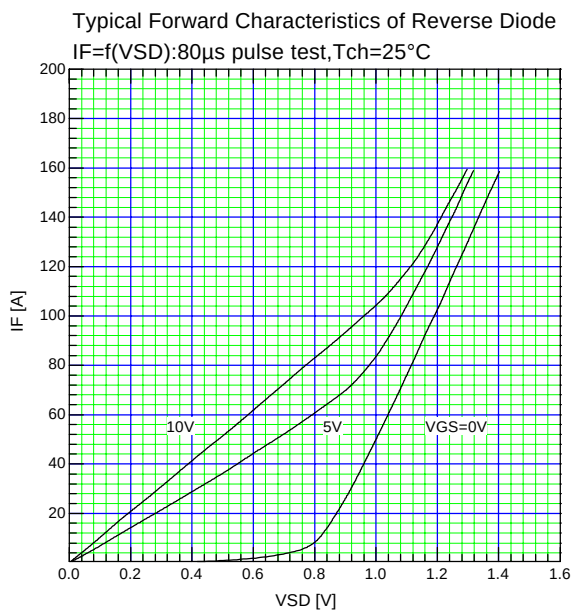
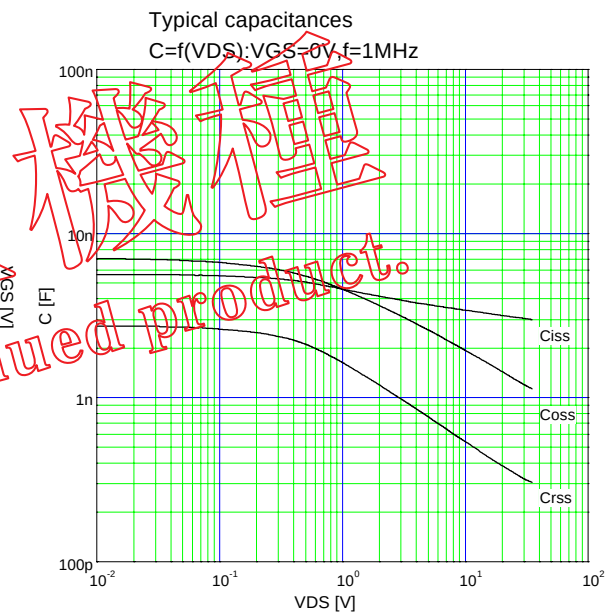
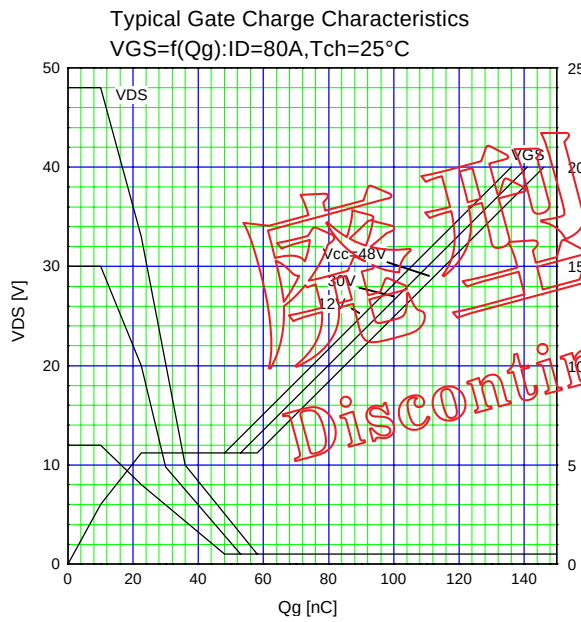
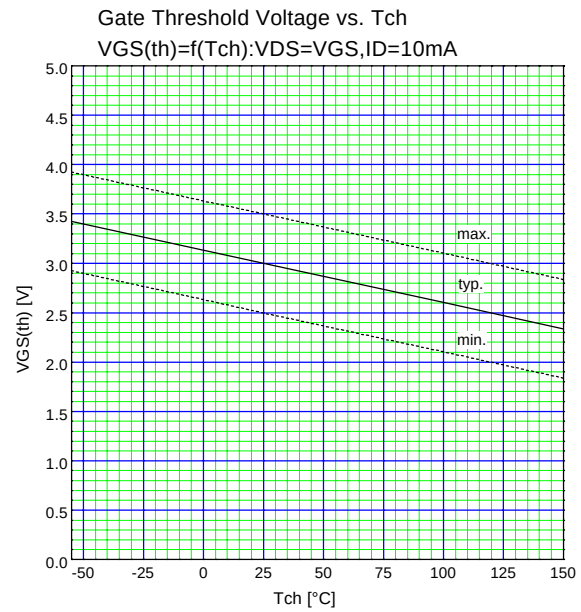
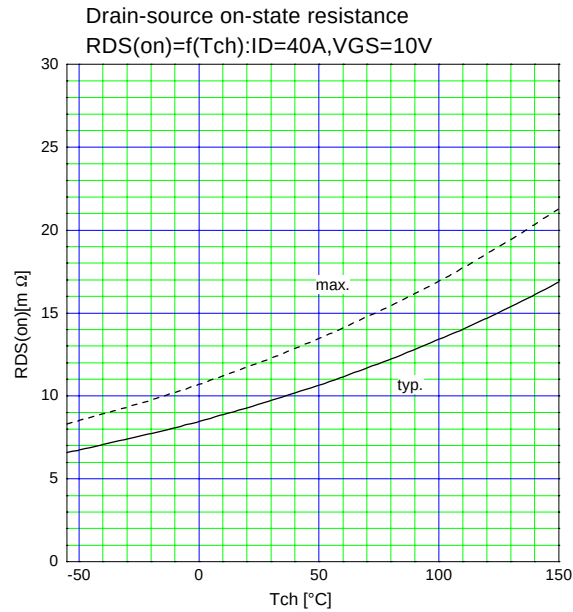


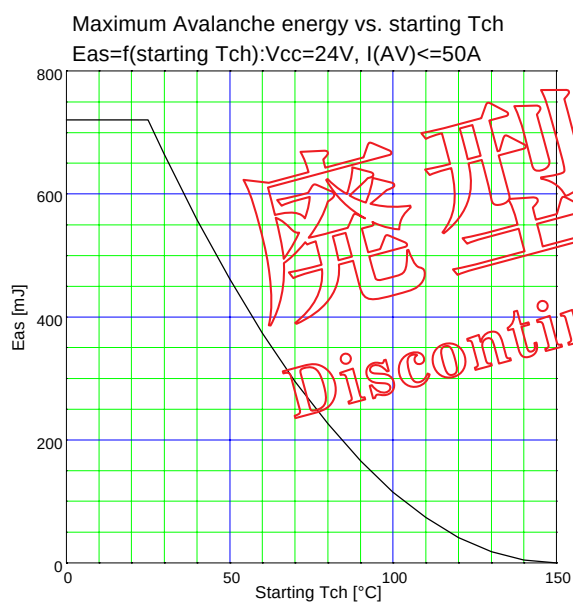
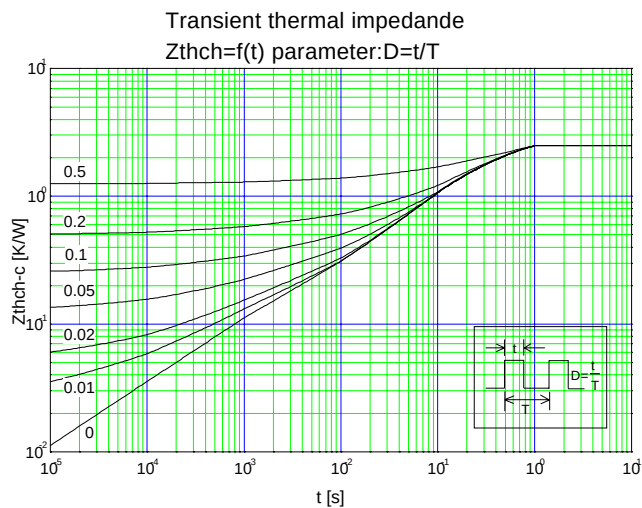
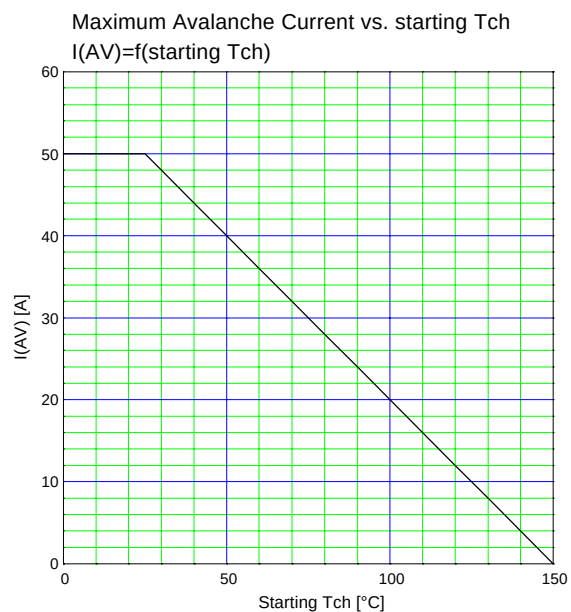
Typical forward transconductance
 $g_{fs} = f(I_D): 80\mu\text{s}$ pulse test, $V_{DS}=25\text{V}, T_{ch}=25^{\circ}\text{C}$



Typical Drain-Source on-State Resistance
 $R_{DS(on)} = f(I_D): 80\mu\text{s}$ pulse test, $T_{ch}=25^{\circ}\text{C}$







廢型機種
Discontinued product.