

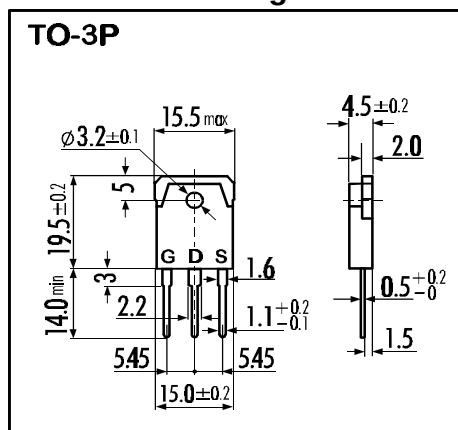
> Features

- Include Fast Recovery Diode
- High Voltage
- Low Driving Power

> Applications

- Motor Control
- Inverters
- Choppers

> Outline Drawing

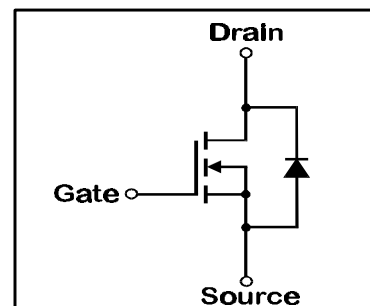


> Maximum Ratings and Characteristics

- Absolute Maximum Ratings (T_C=25°C), unless otherwise specified

Item	Symbol	Rating	Unit
Drain-Source-Voltage	V_{DS}	500	V
Continuous Drain Current	I_D	15	A
Pulsed Drain Current	$I_{D(puls)}$	60	A
Continuous Reverse Drain Current	I_{DR}	15	A
Gate-Source-Voltage	V_{GS}	± 20	V
Max. Power Dissipation	P_D	125	W
Operating and Storage Temperature Range	T_{ch}	150	$^{\circ}C$
	T_{stg}	-55 ~ +150	$^{\circ}C$

> Equivalent Circuit



- Electrical Characteristics ($T_C=25^{\circ}\text{C}$), unless otherwise specified

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown-Voltage	$V_{(BR)DSS}$	$I_D=1mA$ $V_{GS}=0V$	500			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}	$V_{DS}=500V$ $T_{ch}=25^{\circ}C$ $V_{GS}=0V$		10	500	μA
Gate Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$		10	100	nA
Drain Source On-State Resistance	$R_{DS(on)}$	$I_D=8A$ $V_{GS}=10V$		0,4	0,58	Ω
Forward Transconductance	g_{fs}	$I_D=8A$ $V_{DS}=25V$	7	13		S
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$		2000	3000	pF
Output Capacitance	C_{oss}	$f=1MHz$		270	400	pF
Reverse Transfer Capacitance	C_{rss}			140	210	pF
Turn-On-Time t_{on} ($t_{on}=t_{d(on)}+t_r$)	$t_{d(on)}$	$V_{CC}=300V$ $I_D=15A$		30	45	ns
	t_r	$V_{GS}=10V$ $R_{GS}=25 \Omega$		100	150	ns
Turn-Off-Time t_{off} ($t_{off}=t_{d(off)}+t_f$)	$t_{d(off)}$			400	600	ns
	t_f			160	240	ns
Diode Forward On-Voltage	V_{SD}	$I_F=I_{DR}$ $V_{GS}=0V$ $T_{ch}=25^{\circ}C$		0,95	1,8	V
Reverse Recovery Time	t_{rr}	$I_F=I_{DR}$ $V_{GS}=0V$ $-di_F/dt=100A/\mu s$ $T_{ch}=25^{\circ}C$		150	200	ns

- Thermal Characteristics

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Thermal Resistance	$R_{th(ch-a)}$	channel to air			35	°C/W
	$R_{th(ch-c)}$	channel to case			1.0	°C/W

N-channel MOS-FET

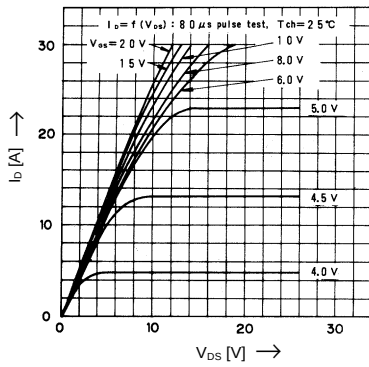
500V 0,58Ω 15A 125W

2SK1279 F-V Series

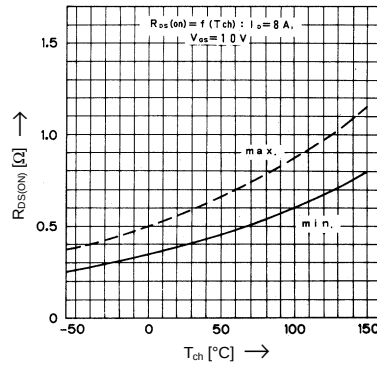
FUJI
ELECTRIC

> Characteristics

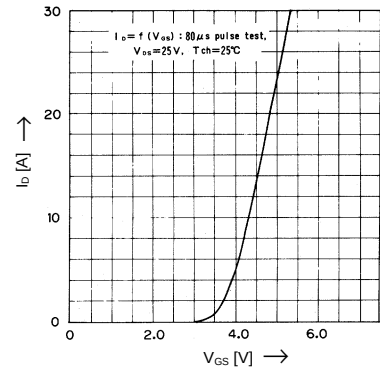
Typical Output Characteristics



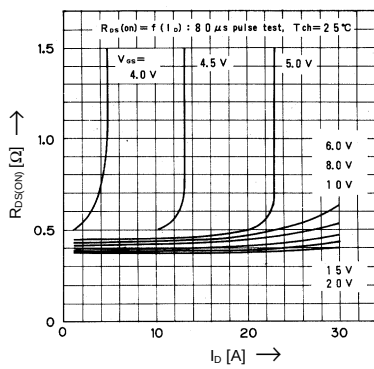
Drain-Source-On-State Resistance vs. T_{ch}



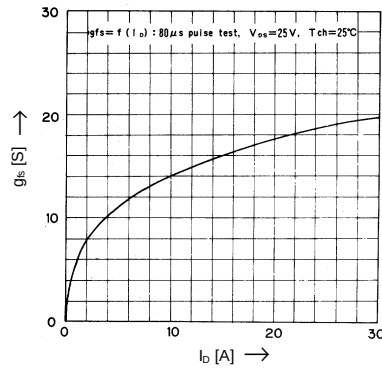
Typical Transfer Characteristics



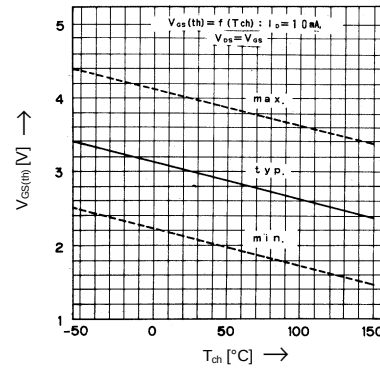
Typical Drain-Source-On-State-Resistance vs. I_D



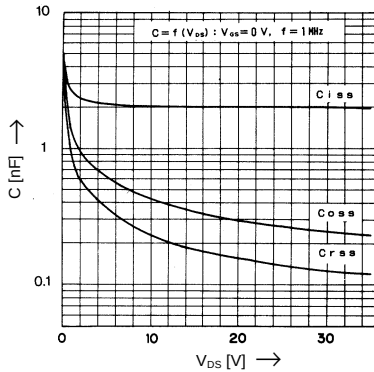
Typical Forward Transconductance vs. I_D



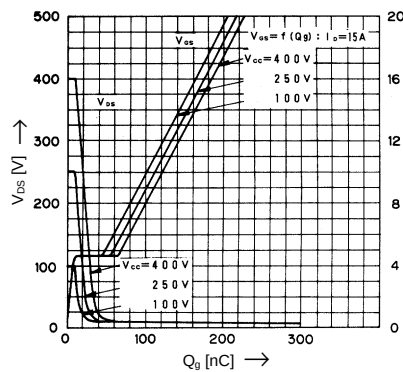
Gate Threshold Voltage vs. T_{ch}



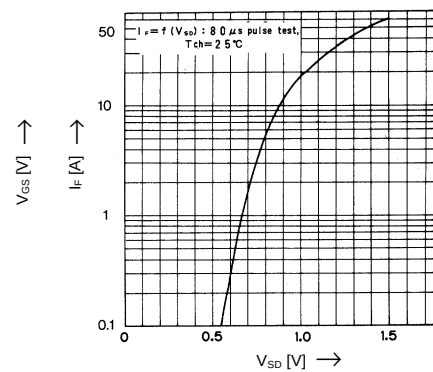
Typical Capacitance vs. V_{DS}



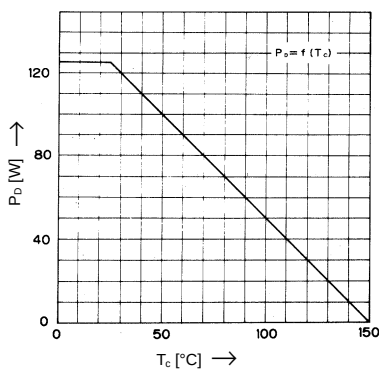
Typical Input Charge



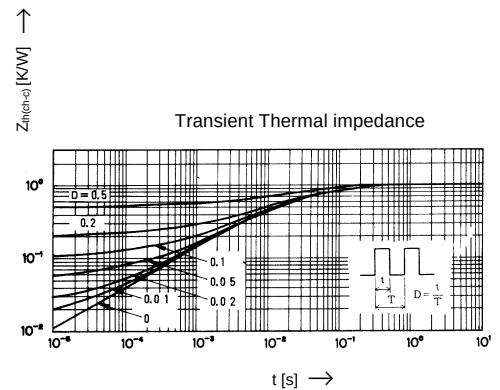
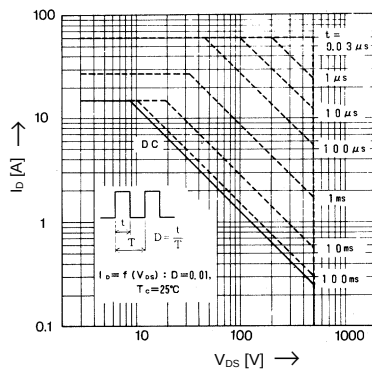
Forward Characteristics of Reverse Diode



Allowable Power Dissipation vs. T_c



Safe operation area



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Datasheets for electronics components.