

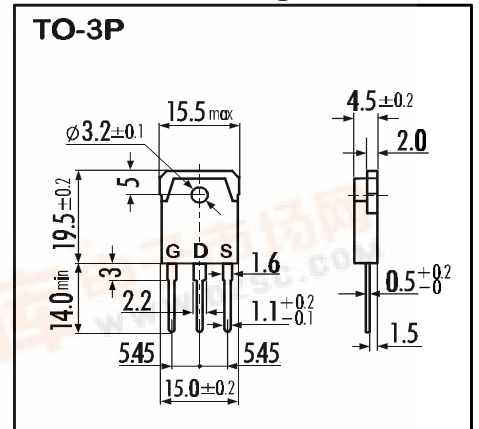
> **Features**

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

> **Applications**

- Motor Control
- Inverters
- Choppers

> **Outline Drawing**

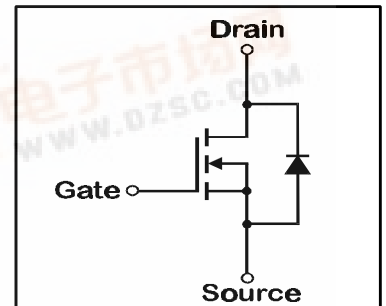


> **Maximum Ratings and Characteristics**

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

Item	Symbol	Rating	Unit
Drain-Source-Voltage	V _{DS}	250	V
Continuous Drain Current	I _D	30	A
Pulsed Drain Current	I _{D(puls)}	120	A
Continuous Reverse Drain Current	I _{DR}	30	A
Gate-Source-Voltage	V _{GS}	±20	V
Max. Power Dissipation	P _D	150	W
Operating and Storage Temperature Range	T _{ch}	150	°C
	T _{stg}	-55 ~ +150	°C

> **Equivalent Circuit**



- Electrical Characteristics (T_C=25°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	250			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} =250V T _{ch} =25°C V _{GS} =0V		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 =15A V _{GS} =10V		0,09	0,12	Ω
Forward Transconductance	g _{fs}	I _D =15A V _{DS} =25V	10	20		S
Input Capacitance	C _{iss}	V _{DS} =25V		2400	3600	pF
Output Capacitance	C _{oss}	V _{GS} =0V		500	750	pF
Reverse Transfer Capacitance	C _{rss}	f=1MHz		280	420	pF
Turn-On-Time t _{on} (t _{on} =t _{d(on)} +t _r)	t _{d(on)}	V _{CC} =150V		35	50	ns
	t _r	I _D =30A		140	210	ns
Turn-Off-Time t _{off} (t _{off} =t _{d(off)} +t _f)	t _{d(off)}	V _{GS} =10V		420	630	ns
	t _f	R _{GS} =25 Ω		180	270	ns
Diode Forward On-Voltage	V _{SD}	I _F =I _{DR} V _{GS} =0V T _{ch} =25°C		0,9	1,8	V
Reverse Recovery Time	t _{rr}	I _F =I _{DR} V _{GS} =0V -di _F /dt=100A/μs T _{ch} =25°C		100	150	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			0,83	°C/W

N-channel MOS-FET			
250V	0,12Ω	30A	150W

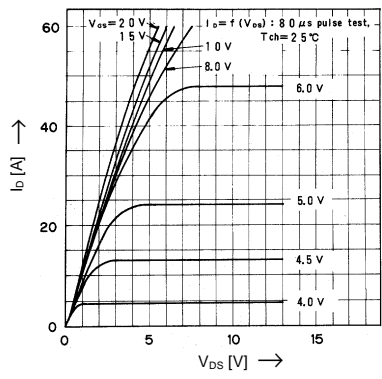
2SK1277

F-V Series

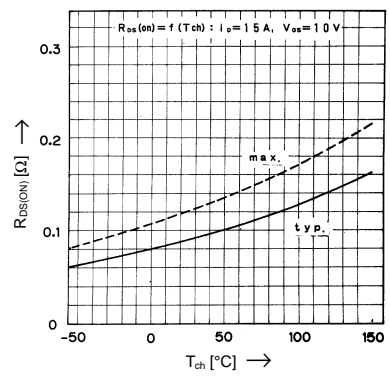


> Characteristics

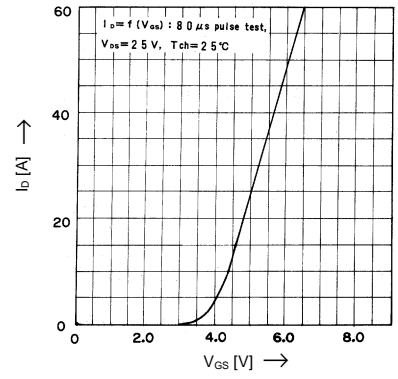
Typical Output Characteristics



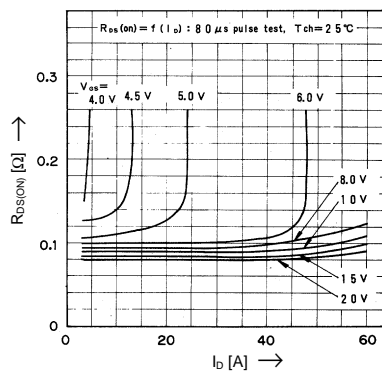
Drain-Source-On-State Resistance vs. Tch



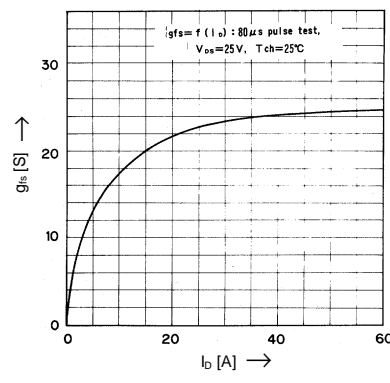
Typical Transfer Characteristics



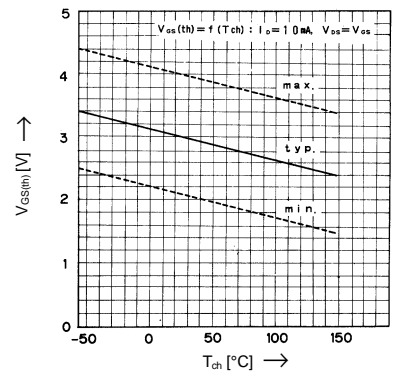
Typical Drain-Source-On-State-Resistance vs. Id



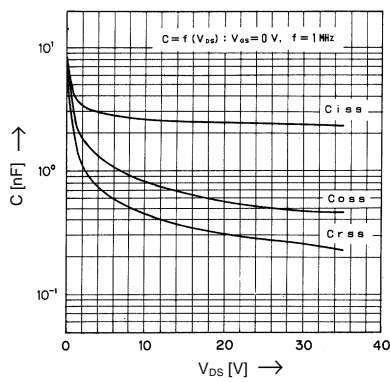
Typical Forward Transconductance vs. Id



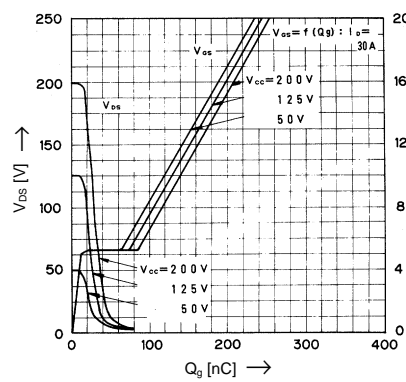
Gate Threshold Voltage vs. Tch



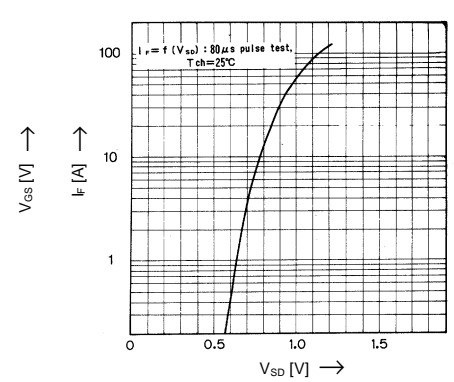
Typical Capacitance vs. Vds



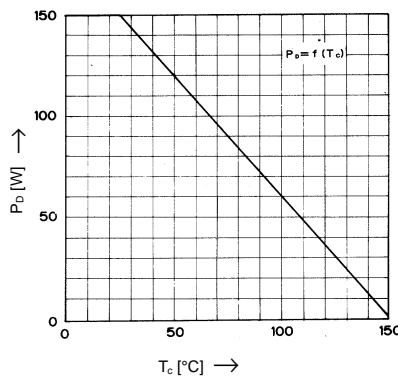
Typical Input Charge



Forward Characteristics of Reverse Diode



Allowable Power Dissipation vs. Tc



Safe operation area

