

> Features

- High Current
- Low On-Resistance
- No Secondary Breakdown
- Low Driving Power
- High Forward Transconductance

> Applications

- Motor Control
- General Purpose Power Amplifier
- DC-DC converters

> Maximum Ratings and Characteristics

- Absolute Maximum Ratings ($T_C=25^\circ\text{C}$), unless otherwise specified

Item	Symbol	Rating	Unit
Drain-Source-Voltage	V_{DS}	150	V
Continous Drain Current	I_D	9	A
Pulsed Drain Current	$I_{D(puls)}$	36	A
Continous Reverse Drain Current	I_{DR}	9	A
Gate-Source-Voltage	V_{GS}	± 20	V
Max. Power Dissipation	P_D	35	W
Operating and Storage Temperature Range	T_{ch}	150	$^\circ\text{C}$
	T_{stg}	-55 ~ +150	$^\circ\text{C}$

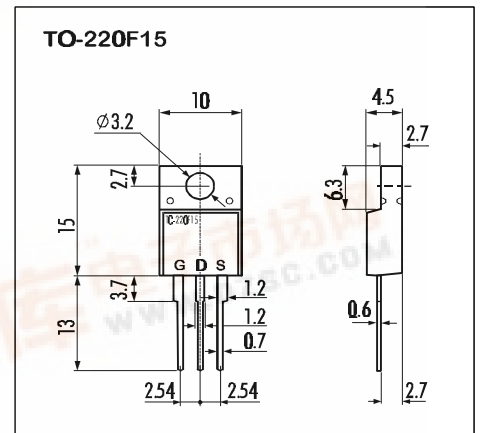
- Electrical Characteristics ($T_C=25^\circ\text{C}$), unless otherwise specified

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown-Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$ $V_{GS}=0\text{V}$	150			V
Gate Threshold Voltage	$V_{GS(th)}$	$I_D=1\text{mA}$ $V_{DS}=V_{GS}$	1,0	1,5	2,5	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=150\text{V}$ $T_{ch}=25^\circ\text{C}$		10	500	μA
		$V_{GS}=0\text{V}$ $T_{ch}=125^\circ\text{C}$		0,2	1,0	mA
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	$R_{DS(on)}$	$I_D=4,5\text{A}$ $V_{GS}=4\text{V}$		0,26	0,40	Ω
		$I_D=4,5\text{A}$ $V_{GS}=10\text{V}$		0,20	0,30	Ω
Forward Transconductance	g_{fs}	$I_D=4,5\text{A}$ $V_{DS}=25\text{V}$	5	10		S
Input Capacitance	C_{iss}	$V_{DS}=25\text{V}$		900	1200	pF
Output Capacitance	C_{oss}	$V_{GS}=0\text{V}$		150	230	pF
Reverse Transfer Capacitance	C_{rss}	$f=1\text{MHz}$		40	60	pF
Turn-On-Time t_{on} ($t_{on}=t_{d(on)}+t_r$)	$t_{d(on)}$	$V_{CC}=30\text{V}$		10	15	ns
	t_r	$I_D=9\text{A}$		40	60	ns
Turn-Off-Time t_{off} ($t_{off}=t_{d(off)}+t_f$)	$t_{d(off)}$	$V_{GS}=10\text{V}$		150	230	ns
	t_f	$R_{GS}=25\Omega$		30	45	ns
Diode Forward On-Voltage	V_{SD}	$I_F=2I_{DR}$ $V_{GS}=0\text{V}$ $T_{ch}=25^\circ\text{C}$		1,1	1,5	V
Reverse Recovery Time	t_{rr}	$I_F=I_{DR}$ $V_{GS}=0\text{V}$ $-di_F/dt=100\text{A}/\mu\text{s}$ $T_{ch}=25^\circ\text{C}$		100		ns

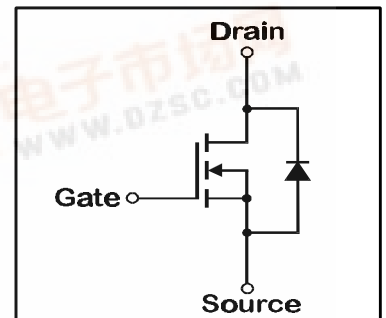
- Thermal Characteristics

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Thermal Resistance	$R_{th(ch-a)}$	channel to air			62,5	$^\circ\text{C}/\text{W}$
	$R_{th(ch-c)}$	channel to case			3,57	$^\circ\text{C}/\text{W}$

> Outline Drawing



> Equivalent Circuit



N-channel MOS-FET			
150V	0,3Ω	9A	35W

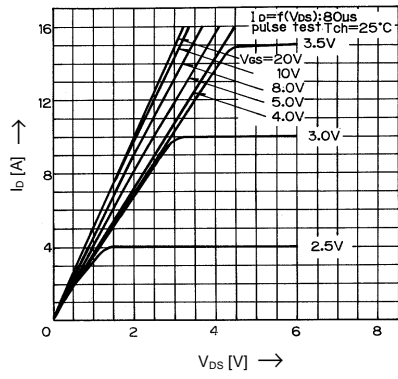
2SK1088-M

F-III Series

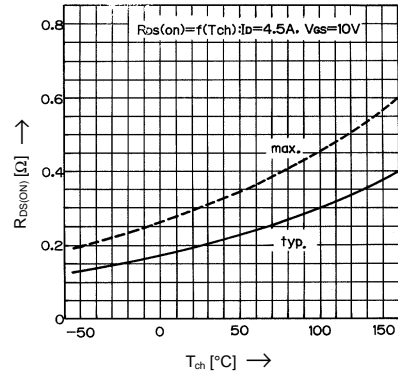


> Characteristics

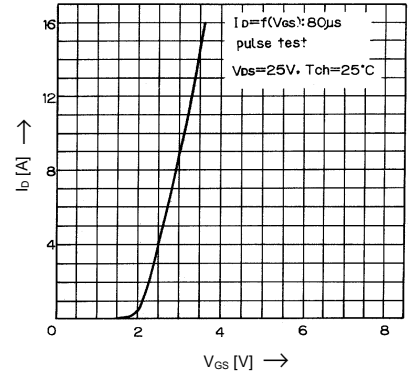
Typical Output Characteristics



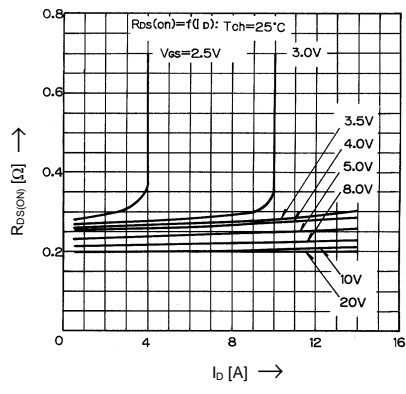
Drain-Source-On-State Resistance vs. Tch



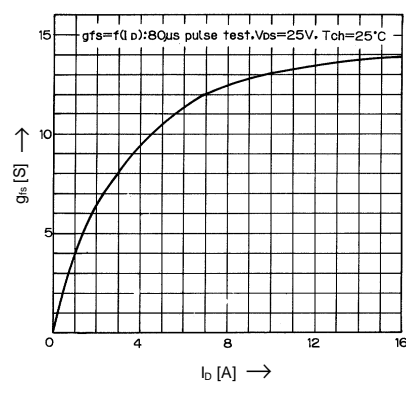
Typical Transfer Characteristics



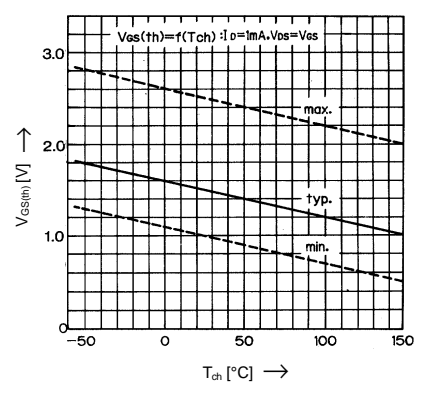
Typical Drain-Source-On-State-Resistance vs. Id



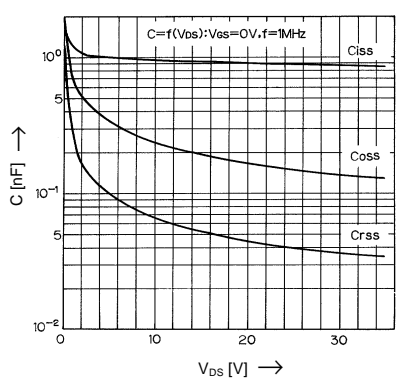
Typical Forward Transconductance vs. Id



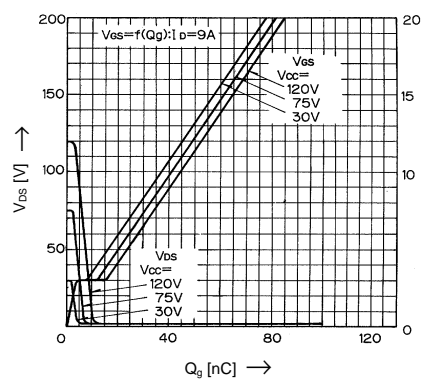
Gate Threshold Voltage vs. Tch



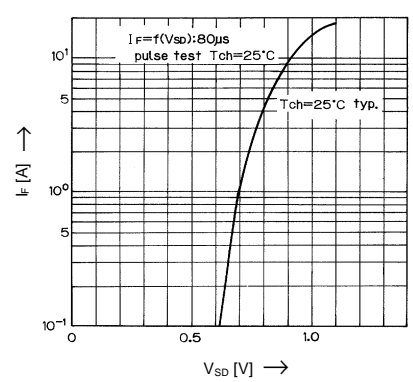
Typical Capacitance vs. Vds



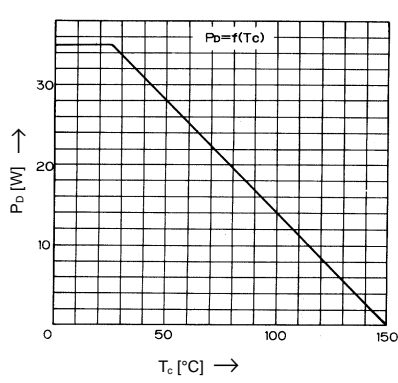
Typical Input Charge



Forward Characteristics of Reverse Diode



Allowable Power Dissipation vs. Tc



Safe operation area

