

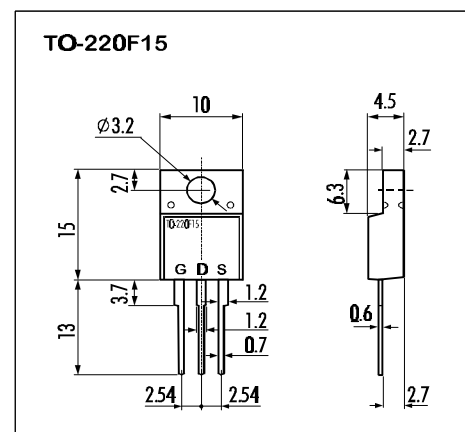
> Features

- High Speed Switching
- Low On-Resistance
- No Secondary Breakdown
- Low Driving Power
- High Voltage
- $V_{GS} = \pm 30V$ Guarantee
- Avalanche Proof

> Applications

- Switching Regulators
- UPS
- DC-DC converters
- General Purpose Power Amplifier

> Outline Drawing

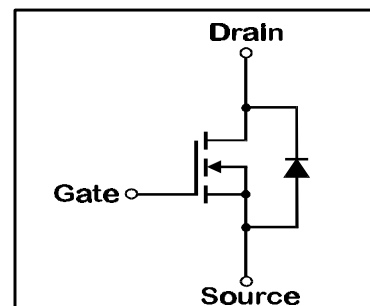


> Maximum Ratings and Characteristics

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

Item	Symbol	Rating	Unit
Drain-Source-Voltage	V_{DS}	600	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current	$I_{D(puls)}$	6	A
Continuous Reverse Drain Current	I_{DR}	2	A
Gate-Source-Voltage	V_{GS}	± 25	V
Max. Power Dissipation	P_D	30	W
Operating and Storage Temperature Range	T_{ch}	150	$^\circ C$
	T_{stg}	-55 ~ +150	$^\circ C$

> Equivalent Circuit



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

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown-Voltage	$V_{(BR)DSS}$	$I_D=1mA$ $V_{GS}=0V$	600			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}	$V_{DS}=600V$ $T_{ch}=25^\circ C$		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	$R_{DS(on)}$	$I_D=1A$ $V_{GS}=10V$		5,5	6,5	Ω
Forward Transconductance	g_{fs}	$I_D=1A$ $V_{DS}=25V$	1	1,8		S
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$		270	400	pF
Output Capacitance	C_{oss}			32	48	pF
Reverse Transfer Capacitance	C_{rss}			15	23	pF
Turn-On-Time $t_{on} (t_{on}=t_{d(on)}+t_r)$	$t_{d(on)}$	$V_{CC}=300V$ $I_D=2A$ $V_{GS}=10V$ $R_{GS}=25 \Omega$		4	6	ns
	t_r			12	18	ns
Turn-Off-Time $t_{off} (t_{off}=t_{d(off)}+t_f)$	$t_{d(off)}$			25	40	ns
	t_f			20	30	ns
Diode Forward On-Voltage	V_{SD}	$I_F=2 \times I_{DR}$ $V_{GS}=0V$ $T_{ch}=25^\circ C$		0,92	1,41	V
Reverse Recovery Time	t_{rr}	$I_F=I_{DR}$ $V_{GS}=0V$		500		ns
		$-di_F/dt=100A/\mu s$ $T_{ch}=25^\circ C$				

- Thermal Characteristics

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Thermal Resistance	$R_{th(ch-a)}$	channel to air			62,5	$^\circ C/W$
	$R_{th(ch-c)}$	channel to case			4,167	$^\circ C/W$

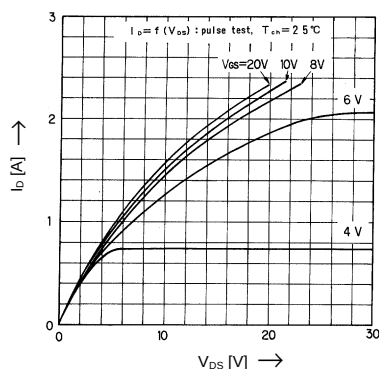
N-channel MOS-FET			
600V	6,5Ω	2A	30W

2SK1821-01M

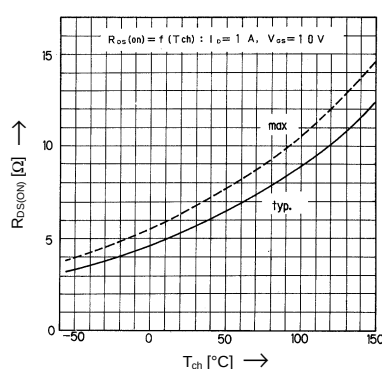
FAP-IIA Series

> Characteristics

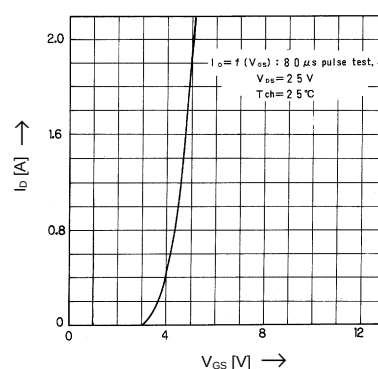
Typical Output Characteristics



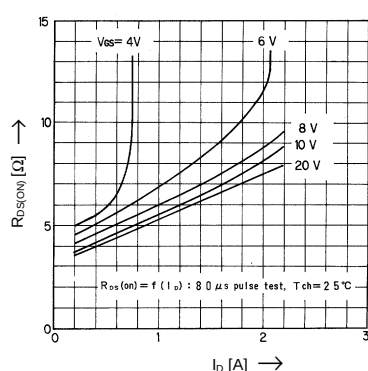
Drain-Source-On-State Resistance vs. T_{ch}



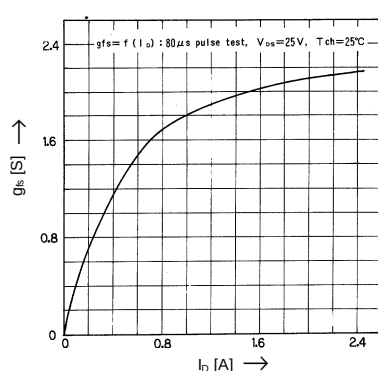
Typical Transfer Characteristics



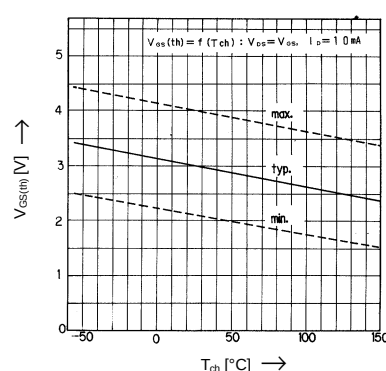
Typical Drain-Source-On-State-Resistance vs. I_D



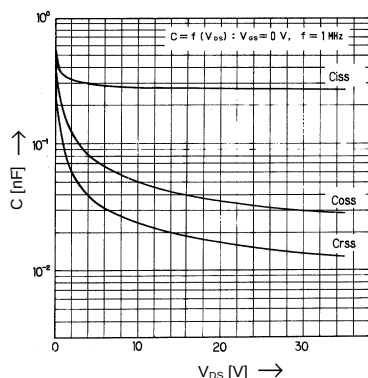
Typical Forward Transconductance vs. I_D



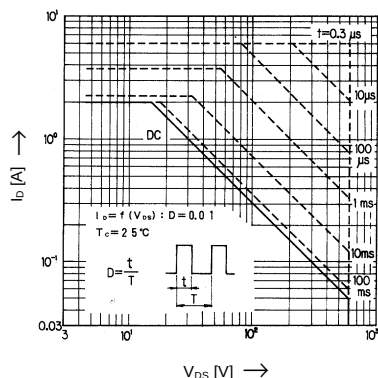
Gate Threshold Voltage vs. T_{ch}



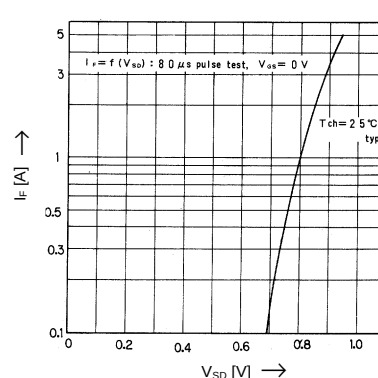
Typical Capacitance vs. V_{DS}



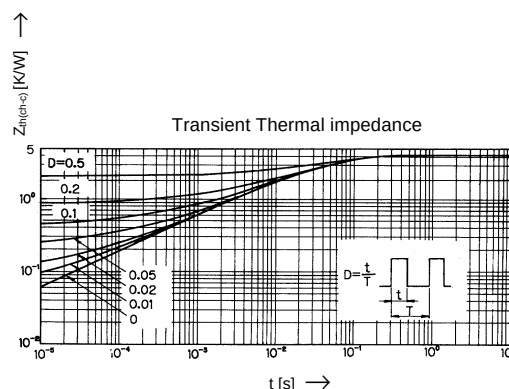
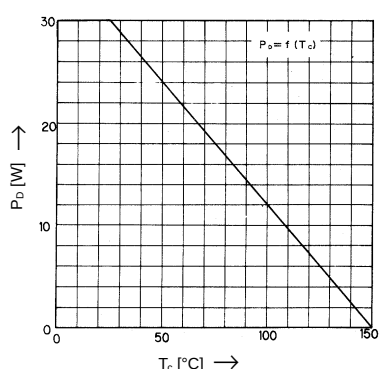
Safe operation area



Forward Characteristics of Reverse Diode



Allowable Power Dissipation vs. T_c



This specification is subject to change without notice!