

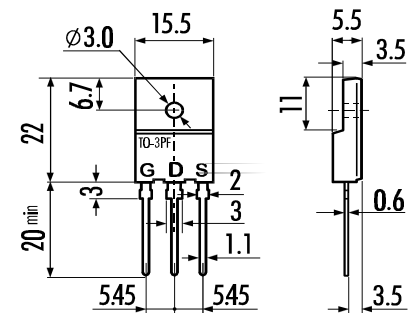
> Features

- 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

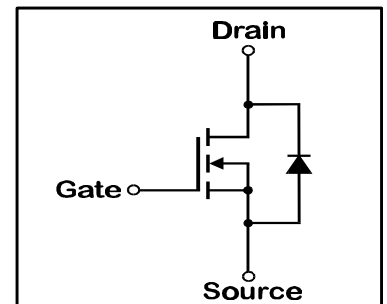
TO-3PF


> 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}	800	V
Drain-Gate-Voltage ($R_{GS}=20K\Omega$)	V_{DGR}	800	V
Continuous Drain Current	I_D	7	A
Pulsed Drain Current	$I_{D(puls)}$	21	A
Gate-Source-Voltage	V_{GS}	± 30	V
Max. Power Dissipation	P_D	80	W
Operating and Storage Temperature Range	T_{ch}	150	$^\circ\text{C}$
	T_{stg}	-55 ~ +150	$^\circ\text{C}$

> 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	$V_{(BR)DSS}$	$I_D=1mA$ $V_{GS}=0V$	800			V
Gate Threshold Voltage	$V_{GS(th)}$	$I_D=1mA$ $V_{DS}=V_{GS}$	2,5	3,5	5,0	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=800V$ $T_{ch}=25^\circ\text{C}$		10	500	μA
		$V_{GS}=0V$ $T_{ch}=125^\circ\text{C}$		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	$R_{DS(on)}$	$I_D=3A$ $V_{GS}=10V$		1,7	2,2	Ω
Forward Transconductance	g_{fs}	$I_D=3A$ $V_{DS}=25V$	2	4,5		S
Input Capacitance	C_{iss}	$V_{DS}=25V$		1200	1800	pF
Output Capacitance	C_{oss}	$V_{GS}=0V$		140	210	pF
Reverse Transfer Capacitance	C_{rss}	$f=1MHz$		50	75	pF
Turn-On-Time t_{on} ($t_{on}=t_{d(on)}+t_r$)	$t_{d(on)}$	$V_{CC}=600V$ $I_D=7A$ $V_{GS}=10V$ $R_{GS}=25\Omega$		35	55	ns
	t_r			110	170	ns
Turn-Off-Time t_{off} ($t_{off}=t_{d(off)}+t_f$)	$t_{d(off)}$			150	230	ns
	t_f			100	150	ns
Avalanche Capability	I_{AV}	$L = 100\mu\text{H}$ $T_{ch}=25^\circ\text{C}$	7			A
Diode Forward On-Voltage	V_{SD}	$I_F=2I_{DR}$ $V_{GS}=0V$ $T_{ch}=25^\circ\text{C}$		1,0	1,5	V
Reverse Recovery Time	t_{rr}	$I_F=I_{DR}$ $V_{GS}=0V$		800		ns
Reverse Recovery Charge	Q_{rr}	$-dI_F/dt=100A/\mu\text{s}$ $T_{ch}=25^\circ\text{C}$		5,0		μC

- Thermal Characteristics

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Thermal Resistance	$R_{th(ch-a)}$	channel to air			30	$^\circ\text{C/W}$
	$R_{th(ch-c)}$	channel to case			1,56	$^\circ\text{C/W}$

N-channel MOS-FET			
800V	2,2Ω	7A	80W

2SK2562-01R

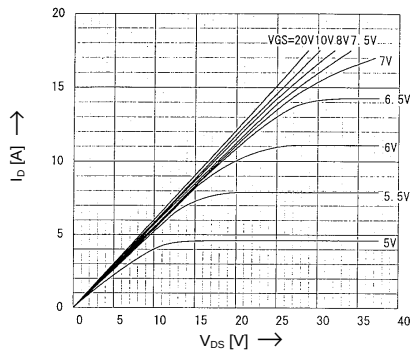
FAP-II Series

FUJI
ELECTRIC

> Characteristics

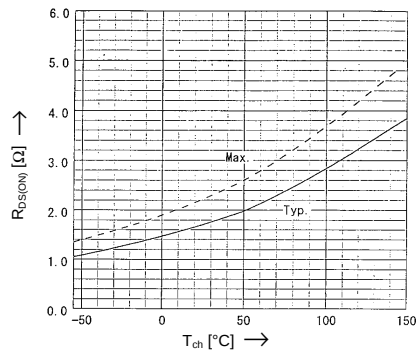
Typical Output Characteristics

$I_D = f(V_{DS})$; 80μs pulse test; $T_C = 25^\circ\text{C}$



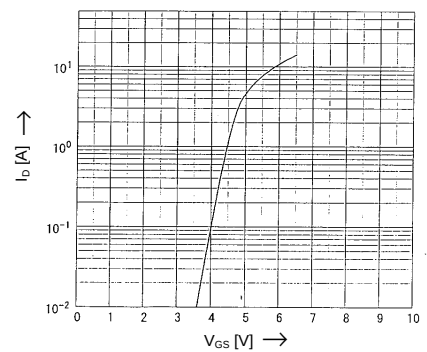
Drain-Source On-State Resistance

$R_{DS(on)} = f(T_{ch})$; $I_D = 3A$; $V_{GS} = 10V$



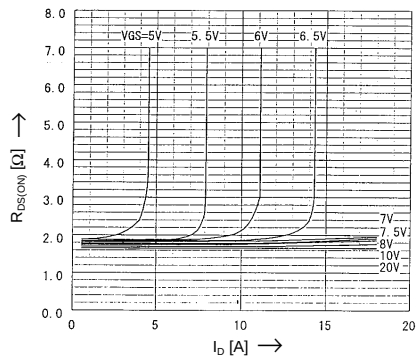
Typical Transfer Characteristics

$I_D = f(V_{GS})$; 80μs pulse test; $V_{DS} = 25V$; $T_{ch} = 25^\circ\text{C}$



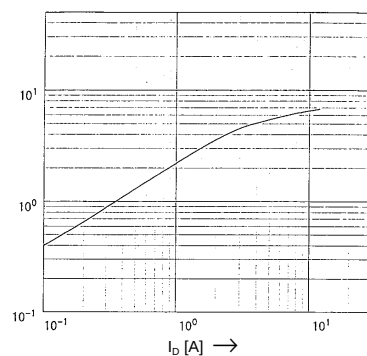
Typical Drain-Source On-State-Resistance

$R_{DS(on)} = f(I_D)$; 80μs pulse test; $T_C = 25^\circ\text{C}$



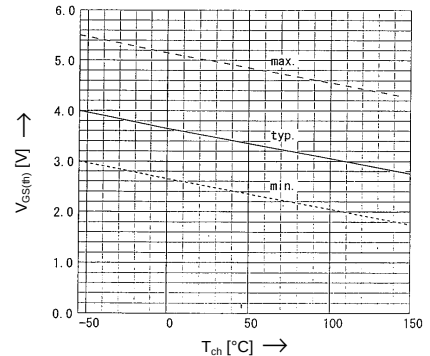
Typical Forward Transconductance

$g_{fs} = f(I_D)$; 80μs pulse test; $V_{DS} = 25V$; $T_{ch} = 25^\circ\text{C}$



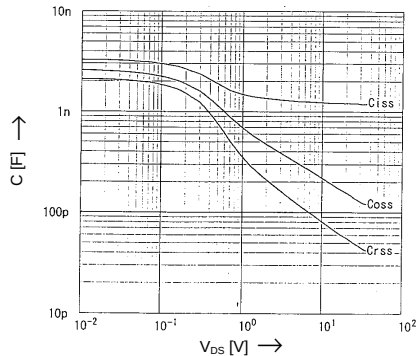
Gate Threshold Voltage

$V_{GS(th)} = f(T_{ch})$; $I_D = 1mA$; $V_{DS} = V_{GS}$



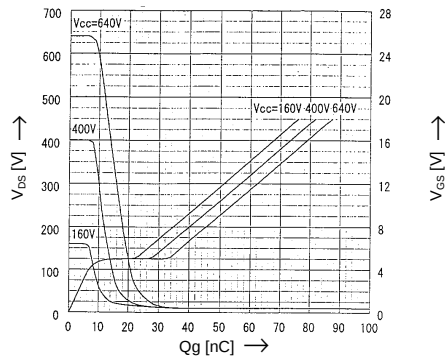
Typical Capacitances

$C = f(V_{DS})$; $V_{GS} = 0V$; $f = 1MHz$



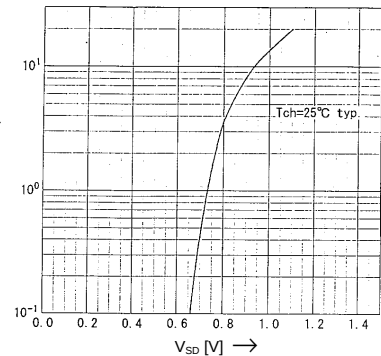
Typical Gate Charge Characteristics

$V_{GS} = f(Q_g)$; $I_D = 7A$; $T_C = 25^\circ\text{C}$



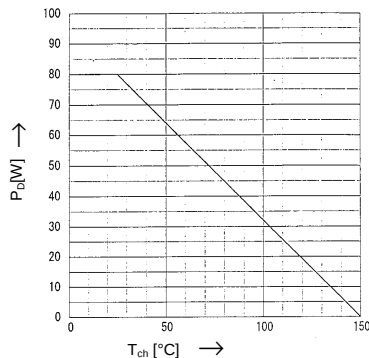
Forward Characteristics of Reverse Diode

$I_F = f(V_{SD})$; 80μs pulse test; $V_{GS} = 0V$



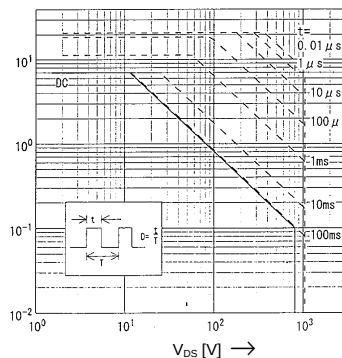
Power Dissipation

$P_D = f(T_C)$



Safe Operation Area

$I_D = f(V_{DS})$; $D = 0.01$; $T_C = 25^\circ\text{C}$



$Z_{th(jh-c)} [K/W]$

Transient Thermal impedance

$Z_{th(jh-c)} = f(t)$ parameter: $D = t/T$

