

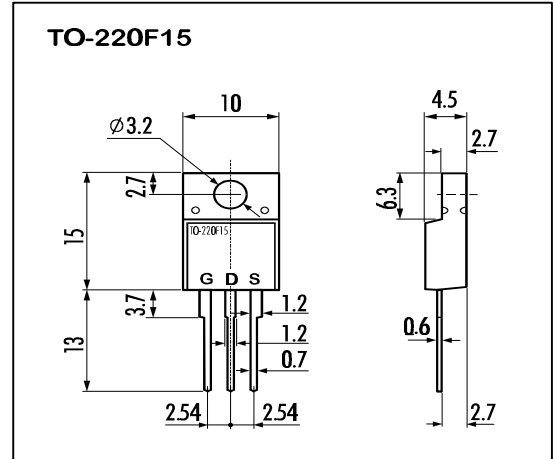
> Features

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

> Applications

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

> Outline Drawing



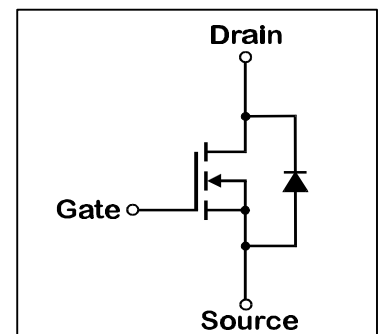
> Maximum Ratings and Characteristics

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

Item	Symbol	Rating	Unit
Drain-Source-Voltage	V_{DS}	30	V
Continuous Drain Current	I_D	±35	A
Pulsed Drain Current	$I_{D(puls)}$	±140	A
Gate-Source-Voltage	V_{GS}	±16	V
Max. Avalanche Energy	E_{AV}	129.3	mJ
Max. Power Dissipation	P_D	20	W
Operating and Storage Temperature Range	T_{ch}	150	$^\circ C$
	T_{stg}	-55 ~ +150	$^\circ C$

$L=0.70mH, V_{CC}=12V$

> Equivalent Circuit



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

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown-Voltage	BV_{DSS}	$I_D=1mA, V_{GS}=0V$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$I_D=1mA, V_{DS}=V_{GS}$	1,0	1,5	2,0	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, T_{ch}=25^\circ C$		10	500	μA
		$V_{GS}=0V, T_{ch}=125^\circ C$		0,2	1,0	mA
Gate Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$		10	100	nA
Drain Source On-State Resistance	$R_{DS(on)}$	$I_D=17,5A, V_{GS}=4V$		22	30	$m\Omega$
		$V_{GS}=10V$		14	20	$m\Omega$
Forward Transconductance	g_{fs}	$I_D=17,5A, V_{DS}=25V$	16	33		S
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V$		1100	1650	pF
Output Capacitance	C_{oss}	$f=1MHz$		550	830	pF
Reverse Transfer Capacitance	C_{rss}			240	360	pF
Turn-On-Time $t_{on} (t_{on}=t_{d(on)}+t_r)$	$t_{d(on)}$	$V_{CC}=15V, I_D=35A$		9	15	ns
	t_r	$V_{GS}=10V, R_{GS}=10\Omega$		75	115	ns
Turn-Off-Time $t_{off} (t_{off}=t_{d(off)}+t_f)$	$t_{d(off)}$			15	23	ns
	t_f			50	75	ns
Avalanche Capability	I_{AV}	$L = 100\mu H, T_{ch}=25^\circ C$	35			A
Diode Forward On-Voltage	V_{SD}	$I_F=2I_{DR}, V_{GS}=0V, T_{ch}=25^\circ C$		0,98	1,71	V
Reverse Recovery Time	t_{rr}	$I_F=2I_{DR}, V_{GS}=0V$		50		ns
Reverse Recovery Charge	Q_{rr}	$-di_F/dt=100A/\mu s, T_{ch}=25^\circ C$		0,08		μC

- Thermal Characteristics

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Thermal Resistance	$R_{th(ch-c)}$	channel to case			6,25	$^\circ C/W$
	$R_{th(ch-a)}$	channel to air			62,5	$^\circ C/W$

N-channel MOS-FET

30V 20mΩ ±35A 20W

2SK2808-01MR

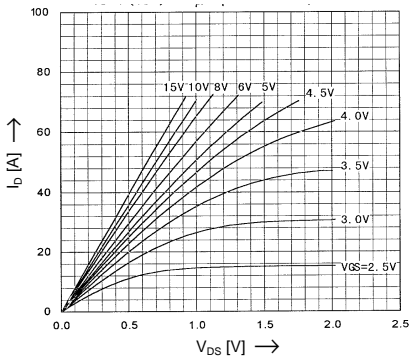
FAP-IIS Series



> Characteristics

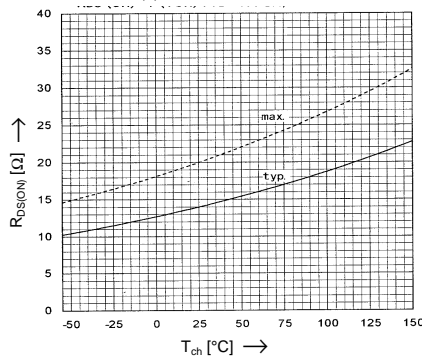
Typical Output Characteristics

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



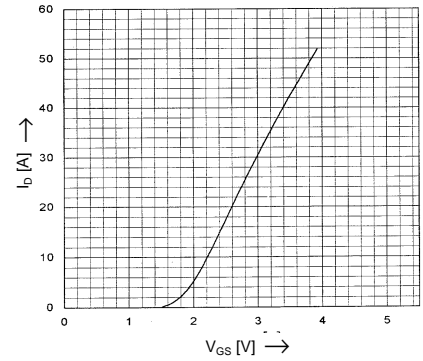
Drain-Source-On-State Resistance vs. T_{ch}

$R_{DS(on)} = f(T_{ch})$; $I_D = 17.5\text{A}$; $V_{GS} = 10\text{V}$



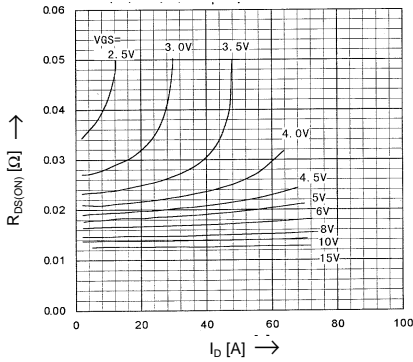
Typical Transfer Characteristics

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



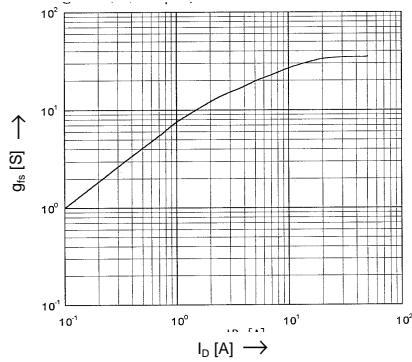
Typical Drain-Source-On-State-Resistance vs. I_D

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



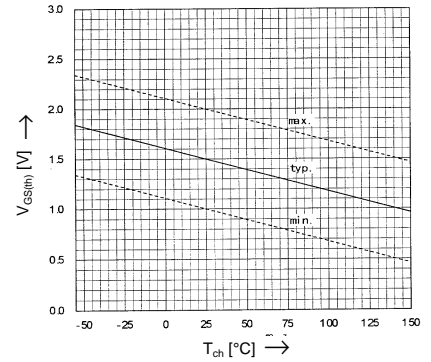
Typical Forward Transconductance vs. I_D

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



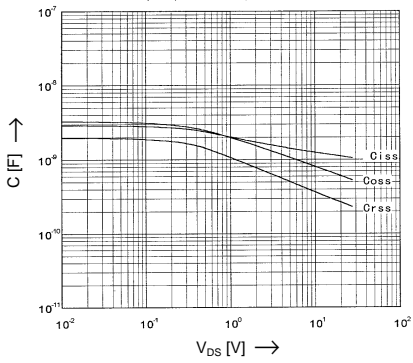
Gate Threshold Voltage vs. T_{ch}

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



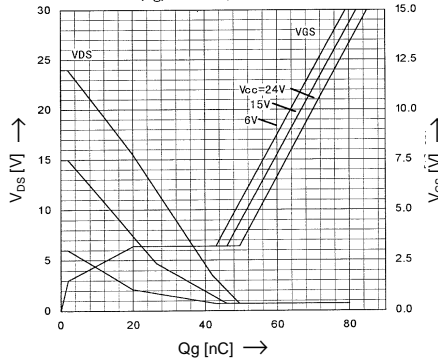
Typical Capacitances vs. V_{DS}

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



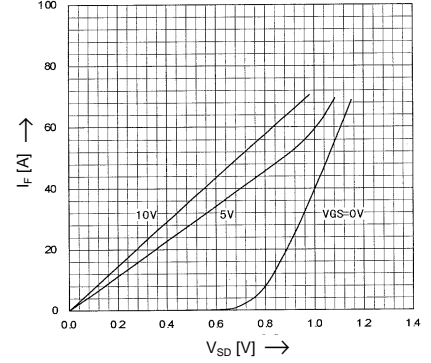
Typical Gate Charge Characteristic

$V_{GS} = f(Q_g)$; $I_D = 35\text{A}$; $T_{ch} = 25^\circ\text{C}$



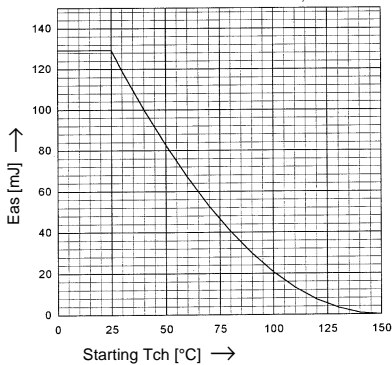
Forward Characteristics of Reverse Diode

$I_F = f(V_{SD})$; 80μs pulse test; $V_{GS} = 0\text{V}$; $T_{ch} = 25^\circ\text{C}$



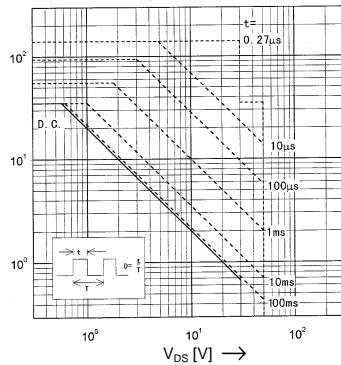
Avalanche Energy Derating

$E(AV) = f(\text{starting } T_{ch})$; $V_{CC} = 12\text{V}$; $I_{(AV)} = 35\text{A}$



Safe operation area

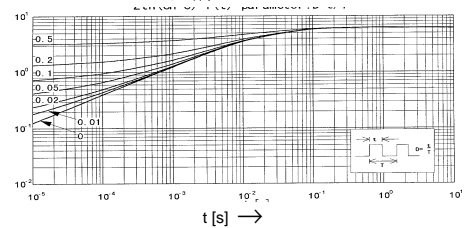
$I_D = f(V_{DS})$; $D = 0.01$; $T_{ch} = 25^\circ\text{C}$



$Z_{th(ch-c)}$ [K/W] ↑

Transient thermal impedance

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



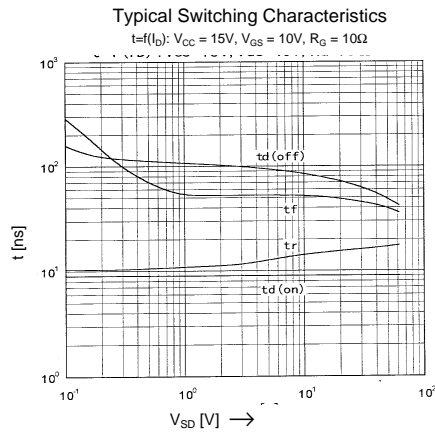
N-channel MOS-FET			
30V	20mΩ	±35A	20W

2SK2808-01MR

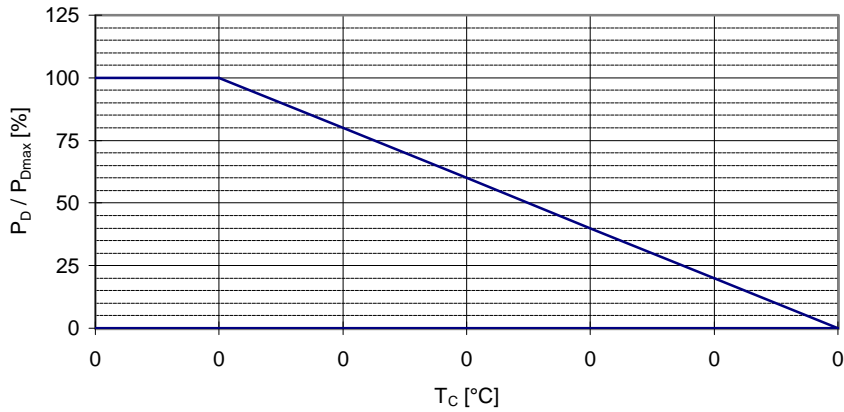
FAP-IIS Series



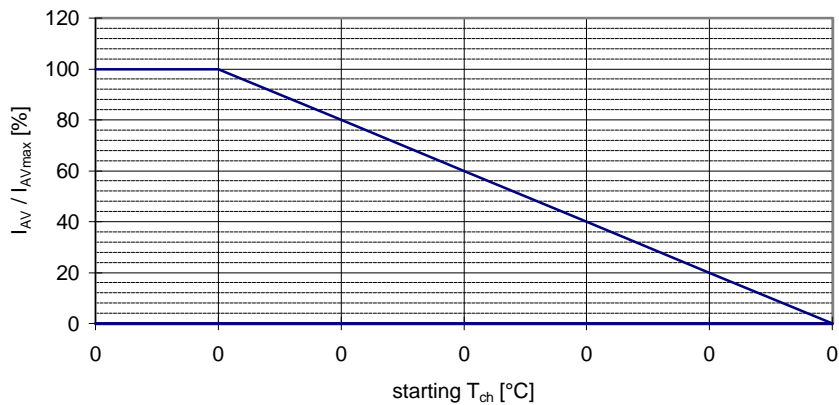
> Characteristics



Power Dissipation
 $P_D=f(T_C)$



Maximum Avalanche Current vs. starting T_{ch}
 $I_{AV}=f(\text{starting } T_{ch})$





LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.