

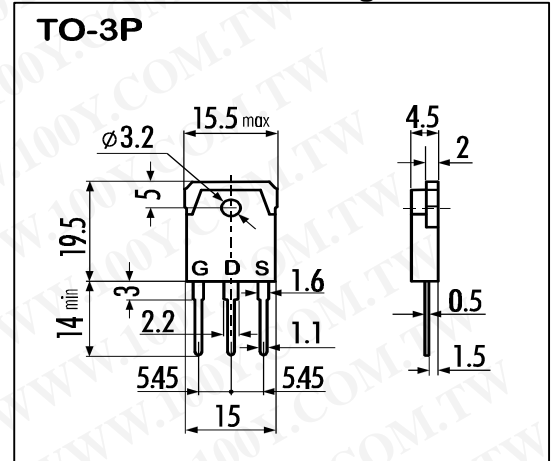
> Features

- 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



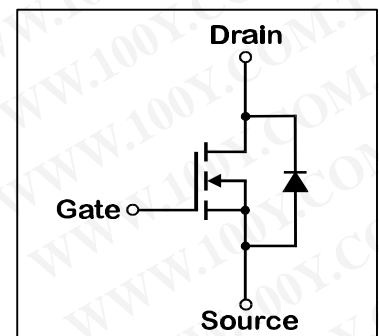
> Maximum Ratings and Characteristics

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

Item	Symbol	Rating	Unit
Drain-Source-Voltage	V_{DS}	500	V
Continuous Drain Current	I_D	±20	A
Pulsed Drain Current	$I_{D(puls)}$	±80	A
Gate-Source-Voltage	V_{GS}	±30	V
Repetitive or Non-Repetitive ($T_{ch} \leq 150^\circ C$)	I_{AR}	20	A
Avalanche Energy	E_{AS}	761	mJ
Max. Power Dissipation	P_D	150	W
Operating and Storage Temperature Range	T_{ch}	150	$^\circ C$
	T_{stg}	-55 ~ +150	$^\circ C$

$L=34.9mH, V_{CC}=50V$

> 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}	$I_D=1mA, V_{GS}=0V$	500			V
Gate Threshold Voltage	$V_{GS(th)}$	$I_D=1mA, V_{DS}=V_{GS}$	2,5	3,0	3,5	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=500V, T_{ch}=25^\circ C$		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	$R_{DS(on)}$	$I_D=10A, V_{GS}=10V$		0,33	0,38	Ω
Forward Transconductance	g_{fs}	$I_D=10A, V_{DS}=25V$	7,5	15		S
Input Capacitance	C_{iss}	$V_{DS}=25V$		2200	3300	pF
Output Capacitance	C_{oss}	$V_{GS}=0V$		330	500	pF
Reverse Transfer Capacitance	C_{rss}	$f=1MHz$		140	210	pF
Turn-On-Time $t_{on} (t_{on}=t_{d(on)}+t_r)$	$t_{d(on)}$	$V_{CC}=300V$		20	30	ns
		$I_D=20A$		160	240	ns
Turn-Off-Time $t_{off} (t_{off}=t_{d(off)}+t_f)$	$t_{d(off)}$	$V_{GS}=10V$		130	200	ns
		$R_{GS}=10\Omega$		105	160	ns
Avalanche Capability	I_{AV}	$L=3,49mH, T_{ch}=25^\circ C$	20			A
Diode Forward On-Voltage	V_{SD}	$I_F=2I_{DR}, V_{GS}=0V, T_{ch}=25^\circ C$		1,1	1,7	V
Reverse Recovery Time	t_{rr}	$I_F=I_{DR}, V_{GS}=0V$		650		ns
Reverse Recovery Charge	Q_{rr}	$-di_F/dt=100A/\mu s, T_{ch}=25^\circ C$		10,0		μC

- Thermal Characteristics

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Thermal Resistance	$R_{th(ch-c)}$	channel to case			0,83	$^\circ C/W$
	$R_{th(ch-a)}$	channel to air			35,0	$^\circ C/W$

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N-channel MOS-FET			
500V	0,38Ω	±20A	150W

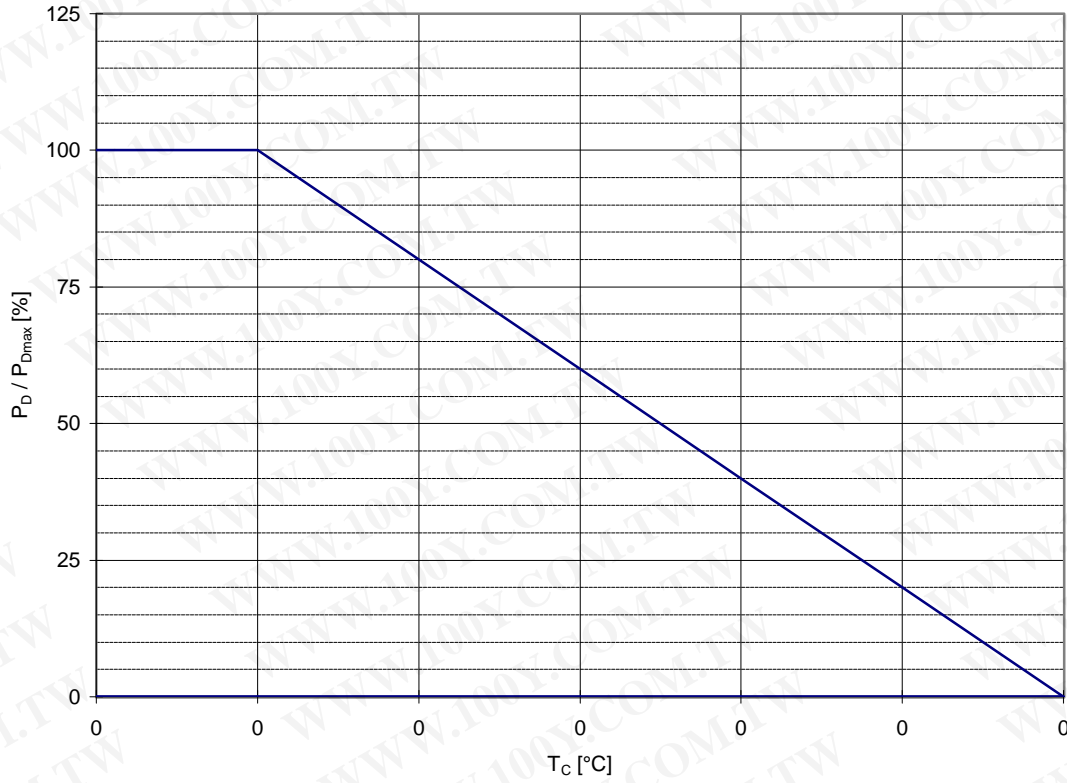
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FAP-IIS Series



> Characteristics

Power Dissipation
 $P_D = f(T_C)$



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