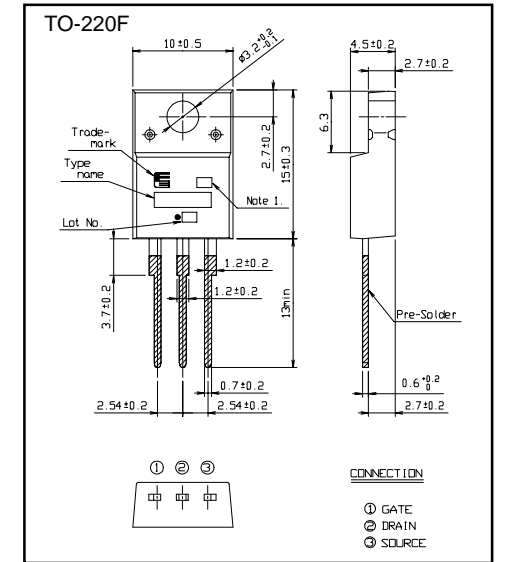
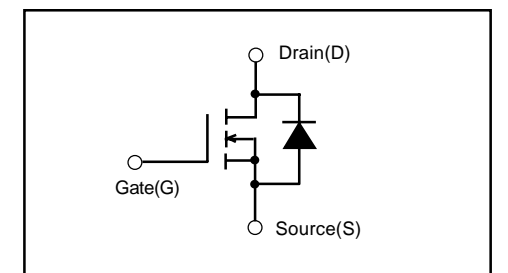


Outline Drawings



Equivalent circuit schematic



Features

- High speed switching
- Low on-resistance
- No secondary breakdown
- Low driving power
- Avalanche-proof

Applications

- Switching regulators
- UPS (Uninterruptible Power Supply)
- DC-DC converters

Maximum ratings and characteristic Absolute maximum ratings

(T_c=25°C unless otherwise specified)

Item	Symbol	Ratings	Unit
Drain-source voltage	V _{DS}	500	V
Continuous drain current	I _D	±6	A
Pulsed drain current	I _{D(puls)}	±24	A
Gate-source voltage	V _{GS}	±30	V
Repetitive or non-repetitive	I _{AR} *2	6	A
Maximum Avalanche Energy	E _{AS} *1	115	mJ
Maximum Drain-Source dV/dt	dV _{DS} /dt *4	20	kV/μs
Peak Diode Recovery dV/dt	dV/dt *3	5	kV/μs
Max. power dissipation	P _D	T _a =25°C	2.16
		T _c =25°C	20
Operating and storage temperature range	T _{ch}	+150	°C
	T _{stg}	-55 to +150	°C
Isolation Voltage	V _{ISO} *5	2	kVrms

*1 L=5.8mH, V_{CC}=50V *2 Tch≤150°C *3 I_F≤-I_D, -di/dt=50A/μs, V_{CC}≤BV_{DSS}, Tch≤150°C
*4 V_{DS}≤500V *5 t=60sec, f=60Hz

Electrical characteristics (T_c = 25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V _{(BR)DSS}	I _D = 250μA V _{GS} =0V	500			V
Gate threshold voltage	V _{GS(th)}	I _D = 250μA V _{DS} =V _{GS}	3.0		5.0	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =500V V _{GS} =0V	T _{ch} =25°C		25	μA
			T _{ch} =125°C		250	
Gate-source leakage current	I _{GSS}	V _{GS} =±30V V _{DS} =0V		10	100	nA
Drain-source on-state resistance	R _{DS(on)}	I _D =3A V _{GS} =10V		1.15	1.50	Ω
Forward transconductance	g _{fs}	I _D =3A V _{DS} =25V	2.5	5		S
Input capacitance	C _{iss}	V _{DS} =25V		430	675	pF
Output capacitance	C _{oss}	V _{GS} =0V		60	90	
Reverse transfer capacitance	C _{rss}	f=1MHz		2.5	4.5	
Turn-on time t _{on}	td(on)	V _{CC} =300V I _D =3A		10	15	ns
	t _r	V _{GS} =10V		5	7.5	
	td(off)	R _{GS} =10 Ω		20	30	
Turn-off time t _{off}	t _r			5	7.5	ns
	td(off)			20	30	
	t _r			5	7.5	
Total Gate Charge	Q _G	V _{CC} =250V		15	22.5	nC
Gate-Source Charge	Q _{GS}	I _D =6A		6.5	10.5	
Gate-Drain Charge	Q _{GD}	V _{GS} =10V		2.5	4.5	
Avalanche capability	I _{AV}	L=5.8mH Tch=25°C	6			A
Diode forward on-voltage	V _{SD}	I _F =6A V _{GS} =0V Tch=25°C		1.00	1.50	V
Reverse recovery time	t _{rr}	I _F =6A V _{GS} =0V		0.5		μs
Reverse recovery charge	Q _{rr}	-di/dt=100A/μs Tch=25°C		1.7		μC

Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			6.25	°C/W
	R _{th(ch-a)}	channel to ambient			58.0	°C/W

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Characteristics

