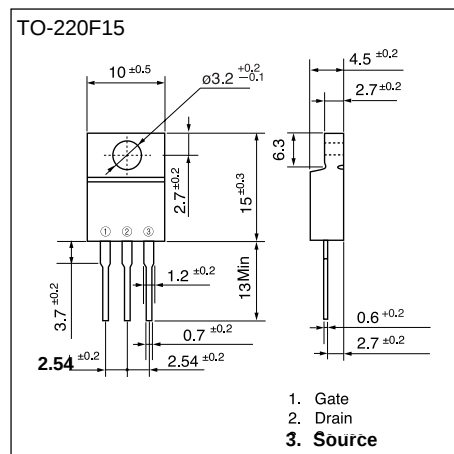


N-CHANNEL SILICON POWER MOS-FET**■ Features**

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

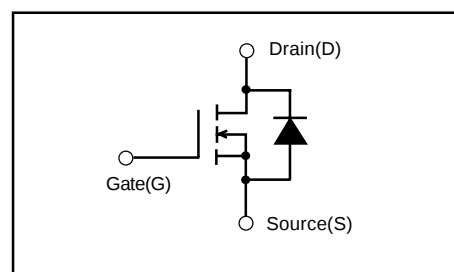
■ Applications

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

**■ Maximum ratings and characteristic Absolute maximum ratings****● (Tc=25°C unless otherwise specified)**

Item	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	150	V
Continuous drain current	I_D	±40	A
Pulsed drain current	$I_{D(puls)}$	±160	A
Gate-source voltage	V_{GS}	±30	V
Maximum Avalanche Energy	E_{AV}^{*1}	387	mJ
Max. power dissipation	$T_a=25^{\circ}C$ P_D	2.0	W
	$T_c=25^{\circ}C$ P_D	70	W
Operating and storage temperature range	T_{ch}	+150	°C
	T_{stg}	-55 to +150	°C

*1 L=420μH, Vcc=24V

■ Equivalent circuit schematic**● Electrical characteristics (Tc =25°C unless otherwise specified)**

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D=1mA$ $V_{GS}=0V$	150			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}	$V_{DS}=150V$ $V_{GS}=0V$ $T_{ch}=25^{\circ}C$		1	100	μA
		$T_{ch}=125^{\circ}C$		0.1	0.5	mA
Gate-source leakage current	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$		10	100	nA
Drain-source on-state resistance	$R_{DS(on)}$	$I_D=20A$ $V_{GS}=10V$		37	43	mΩ
Forward transconductance	g_{fs}	$I_D=20A$ $V_{DS}=25V$	12.5	25.0		S
Input capacitance	C_{iss}	$V_{DS}=25V$		2650	3980	pF
Output capacitance	C_{oss}	$V_{GS}=0V$		550	830	
Reverse transfer capacitance	C_{rss}	$f=1MHz$		240	360	
Turn-on time t_{on}	$t_{d(on)}$	$V_{CC}=48V$ $I_D=40A$ $V_{GS}=10V$		21	32	ns
	t_r	$R_{GS}=10\Omega$		95	142	
Turn-off time t_{off}	$t_{d(off)}$			115	173	
	t_f			60	90	
Avalanche capability	I_{AV}	$L=100\mu H$ $T_{ch}=25^{\circ}C$	40			A
Diode forward on-voltage	V_{SD}	$I_F=40A$ $V_{GS}=0V$ $T_{ch}=25^{\circ}C$		0.97	1.46	V
Reverse recovery time	t_{rr}	$I_F=40A$ $V_{GS}=0V$		180		ns
Reverse recovery charge	Q_{rr}	$-di/dt=100A/\mu s$ $T_{ch}=25^{\circ}C$		1.30		μC

● Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	$R_{th(ch-c)}$	channel to case			1.79	°C/W
	$R_{th(ch-a)}$	channel to ambient			62.5	°C/W

Characteristics

