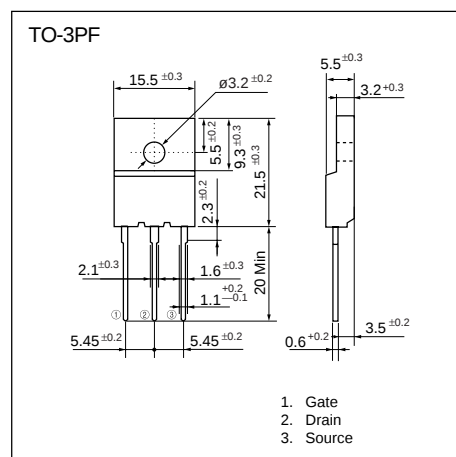


N-CHANNEL SILICON POWER MOS-FET**■ Features**

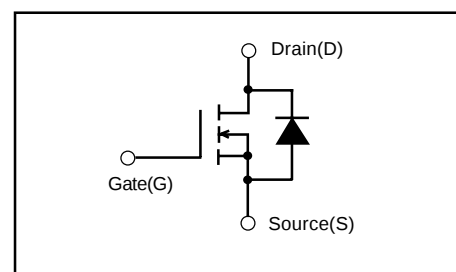
High speed switching
 Low on-resistance
 No secondary breakdown
 Low driving power
 Avalanche-proof

■ Applications

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

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

Item	Symbol	Rating	Unit
Drain-source voltage	V _{DS}	60	V
Continuous drain current	I _D	±70	A
Pulsed drain current	I _{D(puls)}	±280	A
Gate-source voltage	V _{GS}	±30	V
Maximum Avalanche Energy	E _{AV} *1	1111.1	mJ
Max. power dissipation	P _D	100	W
Operating and storage temperature range	T _{ch} T _{stg}	+150 -55 to +150	°C

*1 L=0.302mH, V_{cc}=24V**■ Equivalent circuit schematic****● Electrical characteristics (T_c =25°C unless otherwise specified)**

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	BV _{DSS}	I _D =1mA V _{GS} =0V	60			V
Gate threshold voltage	V _{GS(th)}	I _D =10mA V _{DS} =V _{GS}	2.5	3.0	3.5	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =60V V _{GS} =0V T _{ch} =25°C		10	500	μA
		V _{DS} =60V V _{GS} =0V T _{ch} =125°C		0.2	1.0	mA
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 =40A V _{GS} =10V		9.5	12	mΩ
Forward transconductance	g _{fs}	I _D =40A V _{DS} =25V	20	40		S
Input capacitance	C _{iss}	V _{DS} =25V V _{GS} =0V		3100	4650	pF
Output capacitance	C _{oss}	f=1MHz		1300	1950	pF
Reverse transfer capacitance	C _{rss}	f=1MHz		350	530	pF
Turn-on time t _{on}	td(on)	V _{CC} =30V I _D =80A V _{GS} =10V		20	30	ns
	t _r	R _{GS} =10Ω		85	120	ns
Turn-off time t _{off}	td(off)			88	130	ns
	t _f			65	120	ns
Avalanche capability	I _{AV}	L=100μH T _{ch} =25°C	70			A
Diode forward on-voltage	V _{SD}	I _F =50A V _{GS} =0V T _{ch} =25°C		1.0	1.5	V
Reverse recovery time	t _{rr}	I _F =50A V _{GS} =0V		70		ns
Reverse recovery charge	Q _{rr}	-di/dt=100A/μs T _{ch} =25°C		0.13		μC

● Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			1.25	°C/W
	R _{th(ch-a)}	channel to ambient			30.0	°C/W

Characteristics

