FSL10N034BF

N-Channel Enhancement Mode MOSFET
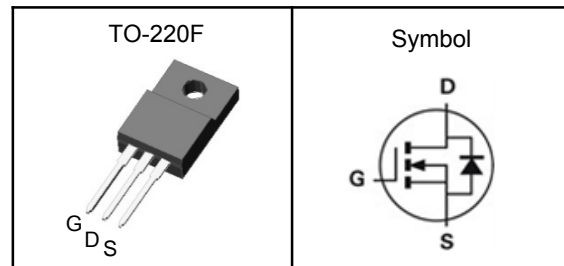
Features

- Fast switching speed
- Reliable and Rugged
- ROHS Compliant
- 100% UIS and Rg Tested

Applications

- Power Management in Desktop Computer
- DC/DC Converters

Pin Description

TO-220F	Symbol

V_{DSS}	100	V
$R_{DS(ON)\text{-}Typ}$	3.4	mΩ
I_D	125	A

Absolute Maximum Ratings$(T_J=25℃,$ Unless Otherwise Noted)

Symbol	Parameter		Rating	Unit
V_{DSS}	Drain-Source Voltage		100	V
V_{GSS}	Gate-Source Voltage		±20	V
T_J	Maximum Junction Temperature		-55 to 150	℃
T_{STG}	Storage Temperature Range		-55 to 150	℃
E_{AS}	Single Pulse Avalanche Energy[3]		306	mJ
I_{DM} [1]	Pulse Drain Current Tested		437	A
I_D	Continuous Drain Current	$T_C=25°C$	125	A
P_D	Maximum Power Dissipation	$T_C=25°C$	30	W

Thermal Characteristics

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	60	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-Case[1]	4.2	℃/W

Note ① : Max. current is limited by bonding wire.

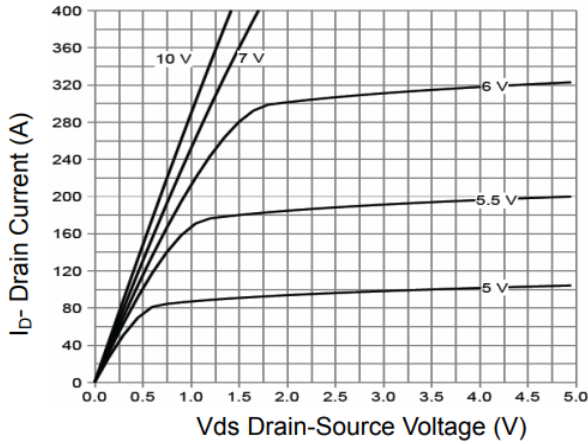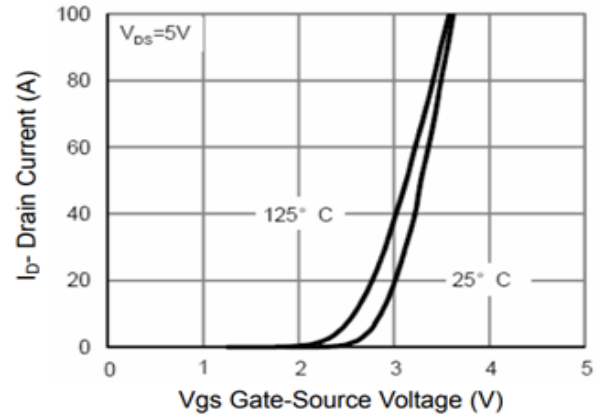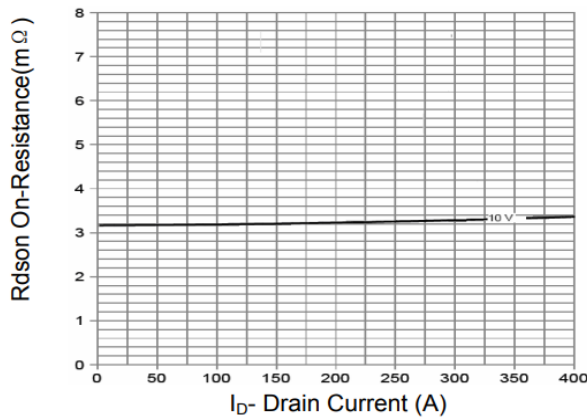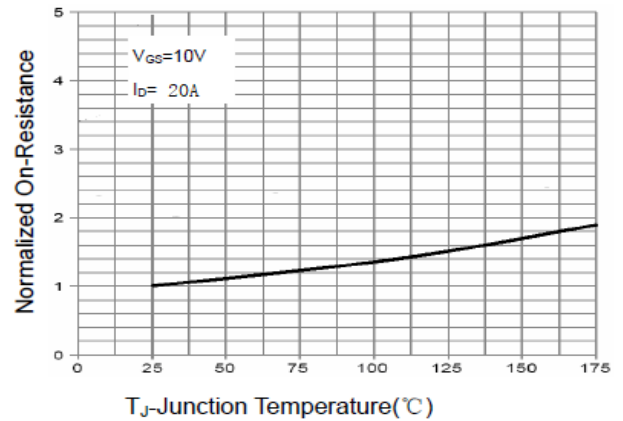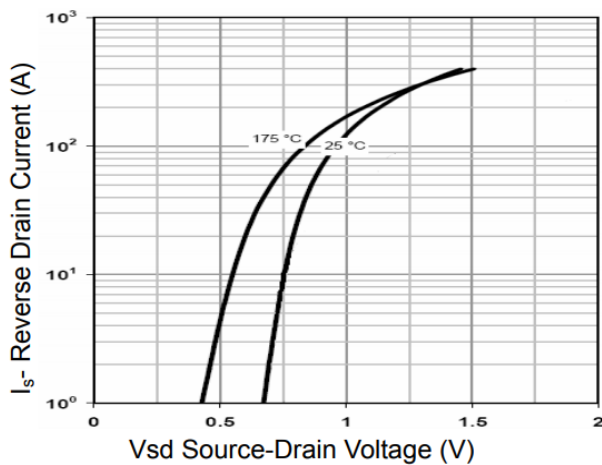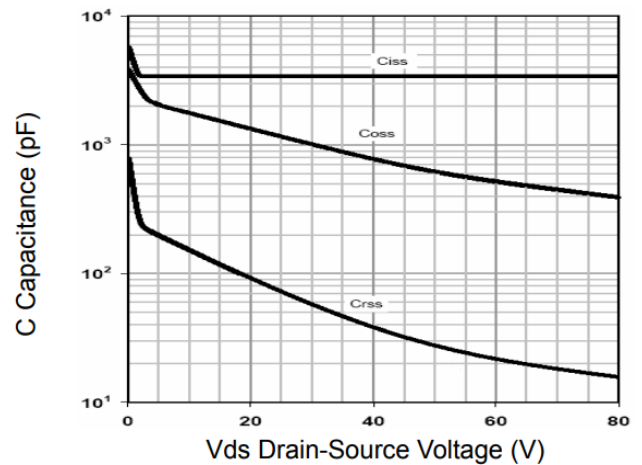Note ② : UIS tested and pulse width are limited by maximum junction temperature 150℃.

Note ③ : Surface Mounted on 1in^2 FR-4 board with 1oz.

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Electrical Characteristics (T_J=25℃, Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Static Electrical Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250mA	100	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=80V, V_{GS}=0V	---	---	1	uA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS} , I_D=250uA	1.0	---	2.5	V
I_{GSS}	Gate Leakage Current	V_{GS}=±20V, V_{DS}=0V	---	---	±100	nA
$R_{DS(ON)}$	Drain-Source On-state Resistance	V_{GS}=10V , I_D=20A	---	3.4	4.0	mΩ
Dynamic Characteristics[5]						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=50V, Freq.=1MHz	---	3600	---	pF
C_{oss}	Output Capacitance		---	865	---	
C_{rss}	Reverse Transfer Capacitance		---	83	---	
$T_{d(on)}$	Turn-on Delay Time	V_{DS} = 50 V, V_{GEN} = 10 V, R_G=10Ω, I_D = 20 A	---	29	---	nS
T_r	Turn-on Rise Time		---	55	---	
$T_{d(off)}$	Turn-off Delay Time		---	69	---	
T_f	Turn-off Fall Time		---	43	---	
Q_g	Total Gate Charge	V_{DS}=50V , V_{GS}=10V , I_D=20A	---	62	---	nC
Q_{gs}	Gate-Source Charge		---	15.5	---	
Q_{gd}	Gate-Drain Charge		---	17.6	---	
Source-Drain Characteristics （T_J=25℃）						
V_{SD}	Diode Forward Voltage2	I_F=1A ,T_J=25℃	---	---	0.7	V
t_{rr}	Reverse Recovery Time	I_F=20A, di/dt=100A/μs，T_J=25℃	---	46	---	nS
Q_{rr}	Reverse Recovery Charge		---	210	---	nC

Note ④： Pulse test (pulse width≤300us, duty cycle≤2%).

Note ⑤ : Guaranteed by design, not subject to production testing.

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Typical Characteristics

Diagram 1: Typ. Output characteristics

Diagram 2: Typ. Transfer characteristics

Diagram 3: Typ. Rdson vs. Drain Current

Diagram 4: Typ. Rdson – Junction Temperature

Diagram 5: Typ. Body-Diode Characteristics

Diagram 6: Typ. Capacitance vs. Vds

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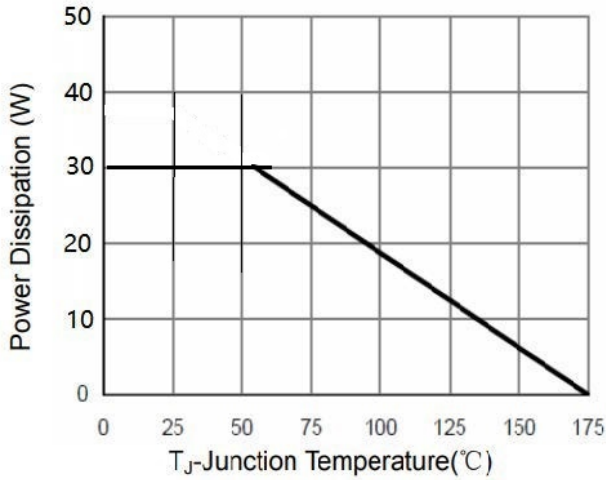
Diagram 7: Typ. Power Dissipation
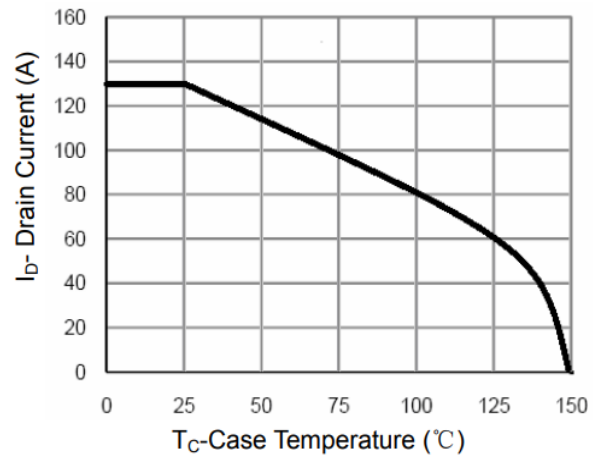

Diagram 8: Typ. Drain Current De-rating

Diagram 9: Typ. Gate charge
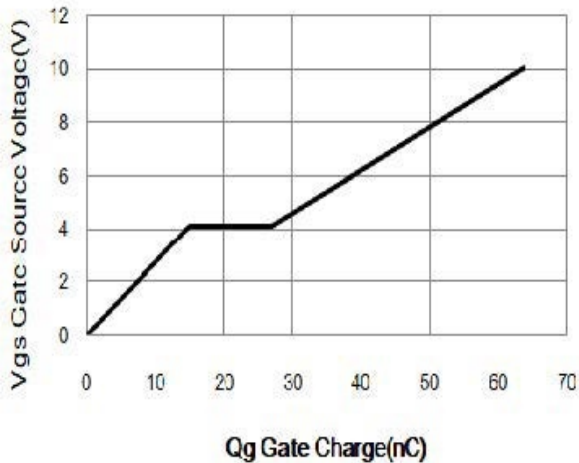

Diagram 10: Typ. Maximum Safe Operating Area
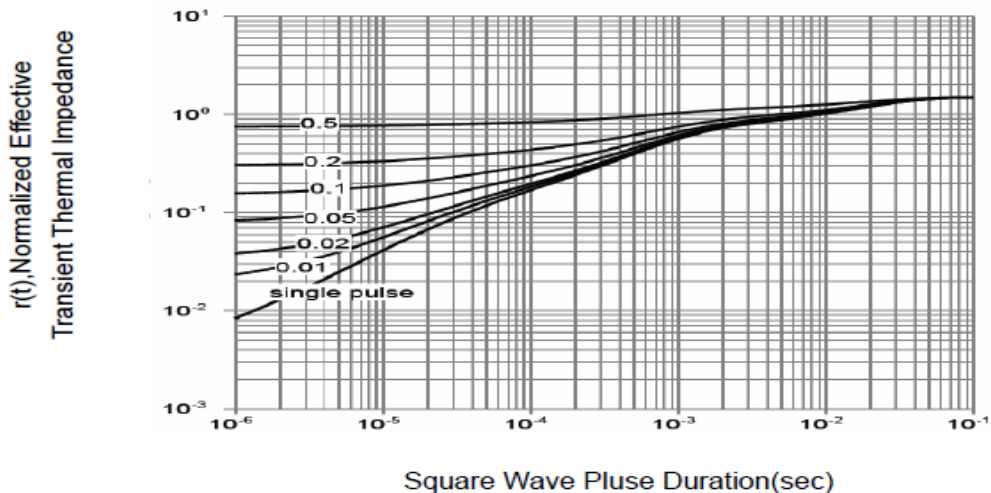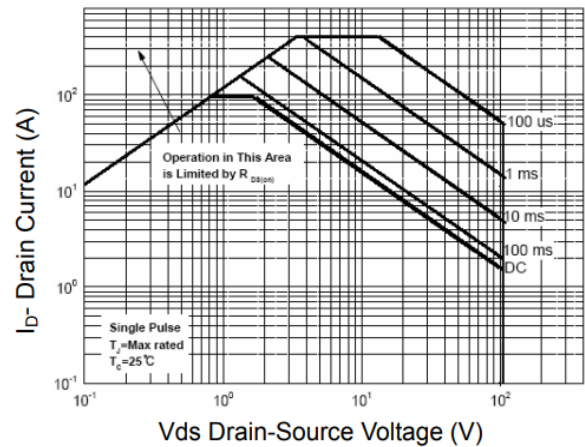

Square Wave Pluse Duration(sec)

Figure 11 Normalized Maximum Transient Thermal Impedance

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TO-220F Package Outline Data

www.foseen.cn
Rev:A2
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Specifications are subject to change without notice