

100V N-Channel Enhancement Mode MOSFET

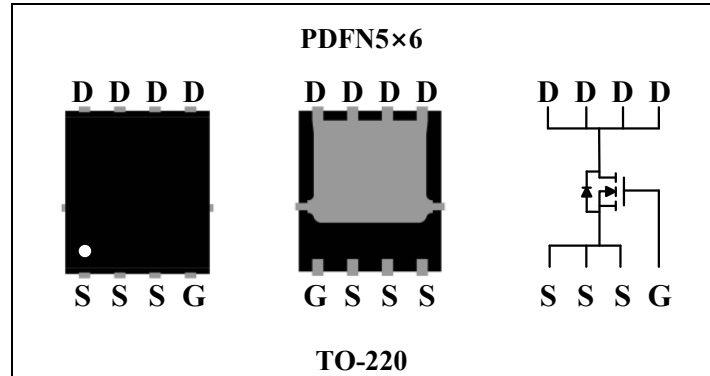
General Features

- High Robustness and Reliability
- Low Gate Charge
- Low $R_{DS(on)}$
- Green Device Available
- RoHS Compliant
- Halogen-free Available

Applications

- High-frequency Switching
- DC/DC Converters
- Synchronous Rectification

BV_{DSS}	$R_{DS(on)}(Typ.)$	I_D
100V	6.1mΩ	107A



Ordering Information

Part Number	Package	Marking	Remark
FTF068N10G	PDFN5×6	068N10	Halogen Free

Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	FTF068N10G	Unit
V_{DSS}	Drain-to-Source Voltage ^[1]	100	V
V_{GS}	Gate-to-Source Voltage	±20	V
I_D	Continuous Drain Current ^[2]	107	A
I_{DM}	Pulsed Drain Current ^[3]	428	A
P_D	Power Dissipation ^[4]	156	W
T_L	Soldering Temperature Distance of 1.6mm from case for 10 seconds	300	°C
T_J & T_{STG}	Operating and Storage Temperature Range	-55 to 150	°C

Caution: Stresses beyond those listed in the "Absolute Maximum Ratings" may cause permanent damage to the device.

Thermal Characteristics

Symbol	Parameter	FTF068N10G	Unit
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	0.8	°C/W

Electrical Characteristics

OFF Characteristics

T_A = 25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
BV _{DSS}	Drain-to-Source Breakdown Voltage	100	--	--	V	V _{GS} = 0V, I _D = 250μA
I _{DSS}	Drain-to-Source Leakage Current	--	--	1	μA	V _{DS} = 100V, V _{GS} = 0V
I _{GSS}	Gate-to-Source Leakage Current	--	--	100	nA	V _{GS} = 20V, V _{DS} = 0V
		--	--	-100		V _{GS} = -20V, V _{DS} = 0V

ON Characteristics

T_A = 25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
R _{DS(on)}	Static Drain-to-Source On-Resistance	--	7.5	8.8	mΩ	V _{GS} = 4.5V, I _D = 20A [5]
		--	6.1	6.8		V _{GS} = 10V, I _D = 40A [5]
V _{GS(th)}	Gate Threshold Voltage	1.0	1.8	2.5	V	V _{GD} = 0V, I _D = 250μA

Dynamic Characteristics

T_A = 25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
C _{iss}	Input Capacitance	--	1321	--	pF	V _{GS} = 0V, V _{DS} = 25V, f = 100KHz
C _{oss}	Output Capacitance	--	672	--		
C _{rss}	Reverse Transfer Capacitance	--	56	--		
Q _g	Total Gate Charge	--	31.6	--	nC	V _{GS} = 0 to 10V, V _{DS} = 50V, I _D = 20A
Q _{gs}	Gate-to-Source Charge	--	4.1	--		
Q _{gd}	Gate-to-Drain (Miller) Charge	--	7.2	--		

Resistive Switching Characteristics

T_A = 25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
t _{d(on)}	Turn-on Delay Time	--	11	--	ns	V _{GS} = 10V, V _{DD} = 50V, I _D = 40A, R _G = 2Ω
t _r	Rise Time	--	8	--		
t _{d(off)}	Turn-off Delay Time	--	31	--		
t _f	Fall Time	--	6	--		



FTF068N10G

Provisional Datasheet

Source-Drain Diode Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Min	Typ.	Max.	Unit	Test Conditions
V_{SD}	Diode Forward Voltage	--	--	1.2	V	$I_{SD} = 40\text{A}$, $V_{GS} = 0\text{V}$

NOTE:

[1] $T_J = +25^\circ\text{C}$ to $+150^\circ\text{C}$.

[2] $T_C = +25^\circ\text{C}$.

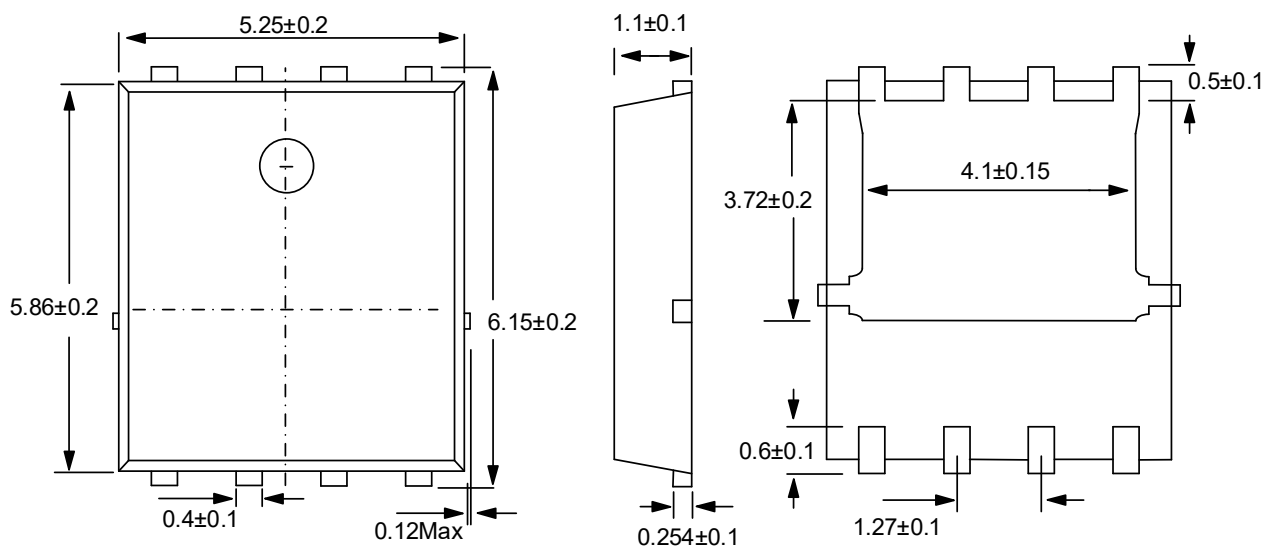
[3] Repetitive rating, pulse width limited by maximum junction temperature.

[4] $T_C = +25^\circ\text{C}$.

[5] Pulse width $\leq 380\mu\text{s}$, duty cycle $\leq 2\%$.

Package Dimensions

PDFN5×6



Unit: mm



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