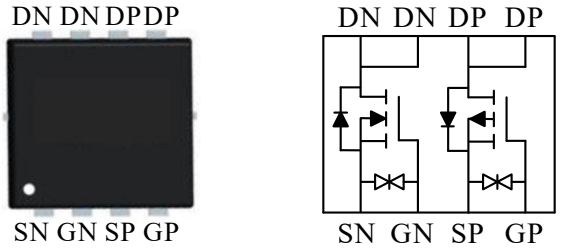
350V N-Channel and P-Channel Enhancement-Mode MOSFETs

General Features

- Proprietary Advanced Planar Technology
- Rugged Polysilicon Gate Cell Structure
- Fast Switching Speed
- RoHS Compliant
- Halogen-free available

BV_{DSS}	$R_{DS(on)(Max.)}$	I_D
350V	**15Ω**	**200mA**
-350V	**30Ω**	**-200mA**

PDFN3×3



Applications

- Power Management
- Load Switch
- General Purpose Line Drivers
- High Voltage Pulsers
- Amplifiers
- Buffers

Ordering Information

Part Number	Package	Marking	Remark
FTF15C35G	PDFN3×3	15C35	Halogen Free

Absolute Maximum Ratings

T_A=25℃ unless otherwise specified

Symbol	Parameter	N-Channel	P-Channel	Unit
V_{DSS}	Drain-to-Source Voltage [1]	350	-350	V
V_{GS}	Gate-to-Source Voltage	±20	±20	V
I_D	Continuous Drain Current	200	-200	mA
I_{DP}	300us Pulsed Drain Current Tested [2]	800	-800	mA
P_D	Power Dissipation	2.5		W
T_J and T_{STG}	Operating and Storage Temperature Range	-55 to 150		℃

**Drain Current limited by Maximum Junction Temperature.*
Caution: Stresses beyond those listed in the "Absolute Maximum Ratings" may cause permanent damage to the device.

Thermal Characteristics

Symbol	Parameter	FTF15C35G	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	45	℃/W

Electrical Characteristics

N-Channel

OFF Characteristics

T_A=25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
BV_{DSS}	Drain-to-Source Breakdown Voltage	350	--	--	V	V_{GS} = 0V, I_D = 250μA
I_{DSS}	Drain-to-Source Leakage Current	--	--	1	μA	V_{DS} = 350V, V_{GS} = 0V
		--	--	100	μA	V_{DS} = 350V, V_{GS} = 0V T_J = 125℃
I_{GSS}	Gate-to-Source Leakage Current	--	--	20	μA	V_{GS} = +20V, V_{DS} = 0V
		--	--	-20	μA	V_{GS} = -20V, V_{DS} = 0V

ON Characteristics

T_A=25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	--	8	15	Ω	V_{GS} = 10V, I_D = 300mA [3]
$V_{GS(th)}$	Gate Threshold Voltage	1	--	3	V	V_{GD} = 0V, I_D = 250μA

Dynamic Characteristics

Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
C_{iss}	Input Capacitance	--	32.58	--	pF	V_{GS} = 0V V_{DS} = 25V f = 1.0MHz
C_{oss}	Output Capacitance	--	5.36	--		
C_{rss}	Reverse Transfer Capacitance	--	0.75	--		
$t_{d(on)}$	Turn-on Delay Time	--	14	--	ns	V_{DD} = 25V, I_D = 80mA R_G = 25Ω V_{GS} = 10V ~ 0V
t_r	Rise Time	--	10	--		
$t_{d(off)}$	Turn-off Delay Time	--	24	--		
t_f	Fall Time	--	36	--		

Source-Drain Diode Characteristics

T_A=25℃ unless otherwise specified

Symbol	Parameter	Min	Typ.	Max.	Units	Test Conditions
V_{SD}	Diode Forward Voltage	--	--	1.2	V	I_{SD} = 300mA, V_{GS} = 0V

P-Channel

OFF Characteristics

T_A=25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
BV_{DSS}	Drain-to-Source Breakdown Voltage	-350	--	--	V	V_{GS} = 0V, I_D = -250μA
I_{DSS}	Drain-to-Source Leakage Current	--	--	-1	μA	V_{DS} = -350V, V_{GS} = 0V
		--	--	-100	μA	V_{DS} = -350V, V_{GS} = 0V T_J = 125℃
I_{GSS}	Gate-to-Source Leakage Current	--	--	20	μA	V_{GS} = +20V, V_{DS} = 0V
		--	--	-20	μA	V_{GS} = -20V, V_{DS} = 0V

ON Characteristics

T_A=25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	--	18	30	Ω	V_{GS} = -10V, I_D = -200mA [3]
$V_{GS(th)}$	Gate Threshold Voltage	-3	--	-1	V	V_{GD} = 0V, I_D = -250μA

Dynamic Characteristics

Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
C_{iss}	Input Capacitance	--	43.39	--	pF	V_{GS} = 0V V_{DS} = -25V f = 1.0MHz
C_{oss}	Output Capacitance	--	6.94	--		
C_{rss}	Reverse Transfer Capacitance	--	0.84	--		
$t_{d(on)}$	Turn-on Delay Time	--	12	--	ns	V_{DD} = -25V I_D = -80mA R_G = 25 Ω V_{GS} = -10V ~ 0V
t_r	Rise Time	--	60	--		
$t_{d(off)}$	Turn-off Delay Time	--	136	--		
t_f	Fall Time	--	320	--		

Source-Drain Diode Characteristics

T_A=25℃ unless otherwise specified

Symbol	Parameter	Min	Typ.	Max.	Units	Test Conditions
V_{SD}	Diode Forward Voltage	--	--	-1.2	V	I_{SD} = -200mA, V_{GS} = 0V

NOTE:

[1] T_J = +25℃ to +150℃
[2] Repetitive rating, pulse width limited by maximum junction temperature.
[3] Pulse width ≤ 380μs; duty cycle ≤ 2%.

Typical Characteristics

Figure 1. Maximum Power Dissipation vs. Case Trmprature

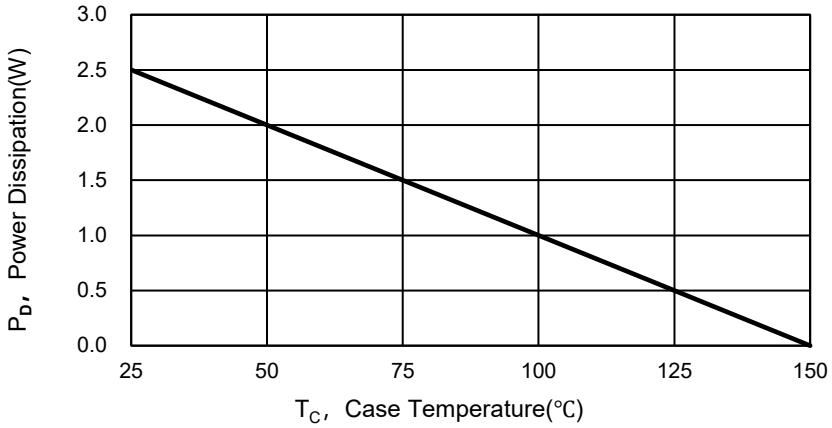


Figure 2. N channel Maximum Continuous Drain Current vs. Case Temperature

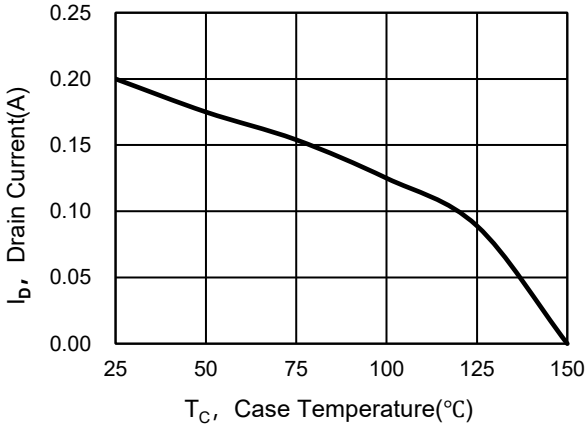


Figure 3. P channel Maximum Continuous Drain Current vs. Case Temperature

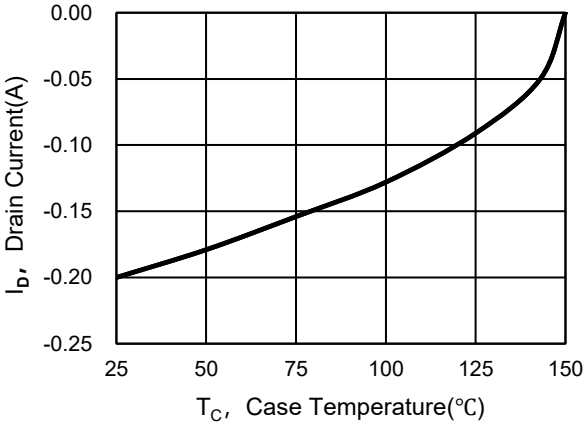


Figure 4. N channel Typical Capacitance vs. Drain-to-Source Voltage

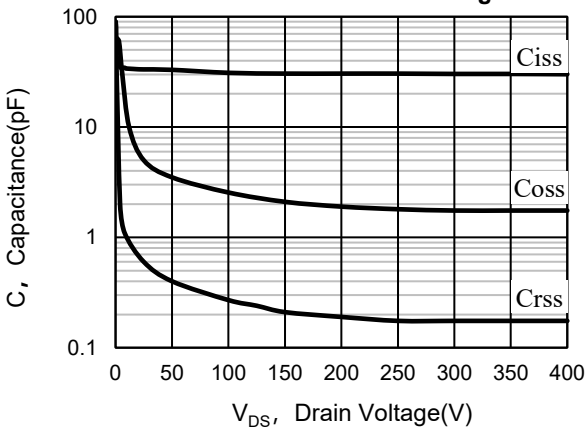
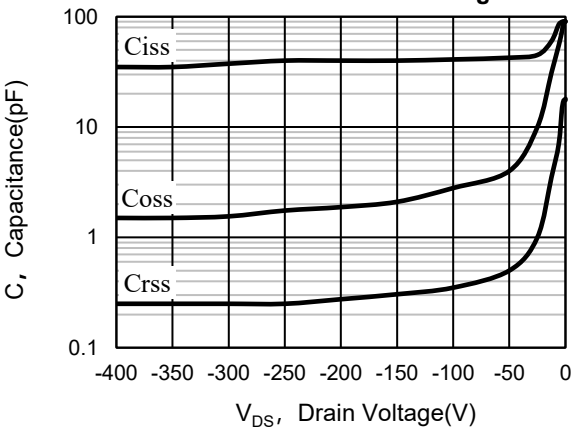
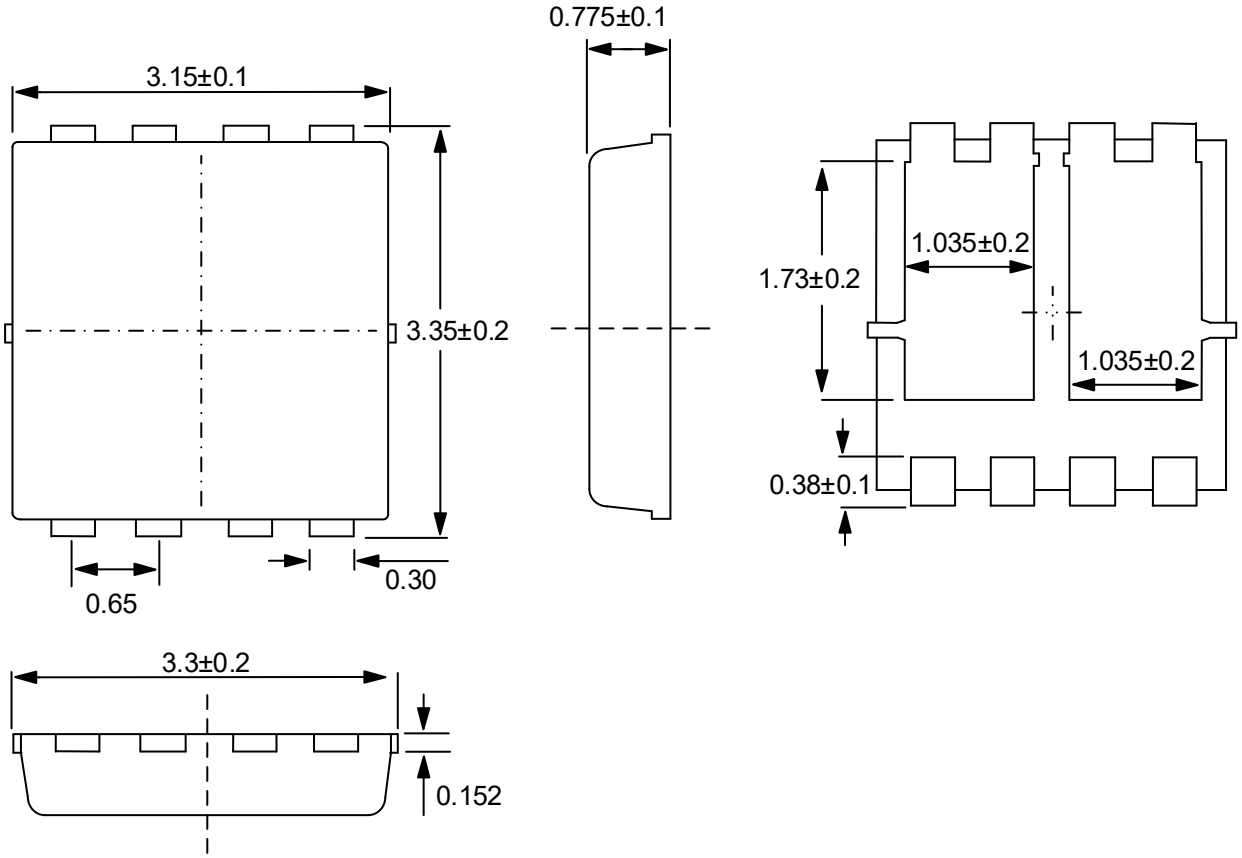


Figure 5. P channel Typical Capacitance vs. Drain-to-Source Voltage



Package Dimensions

PDFN3×3



Unit：mm

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