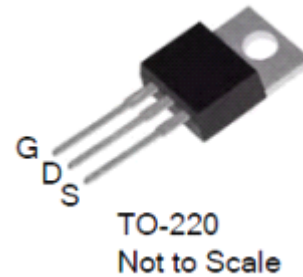


N-Channel MOSFETS

DESCRIPTION

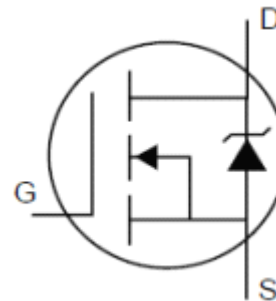
The OGFD 3205PL is produced using advanced planar stripe DMOS technology. The advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency switched mode power supplies, active power factor correction based on half bridge topology.

BV_{DSS}	$R_{DS(ON)}$	I_D
55V	0.008 Ω	110A



Features:

- RoHS Compliant
- Low $R_{DS(ON)}$ (Max 0.008 Ω) $V_{GS}=10V$
- Low Gate Charge
- 100% avalanche tested
- Fast switching
- Improved dv/dt capability.
- Fast switching



Applications

- Switching Application Systems
- Inverter systems
- DC Motor Control

Ordering Information

PART NUMBER	PACKAGE	BRAND
3205PL	TO-220	OGFD

Absolute Maximum Ratings (TC=25°C, unless otherwise noted)

Symbol	Parameter	3205PL	Units
V _{DSS}	Drain-to-Source Voltage	55	V
I _D	Continuous Drain Current	110	A
I _{DM}	Pulsed Drain Current@VG=10V	350	
P _D	Power Dissipation	200	W
	Derating Factor above 25°C	1.30	W/°C
V _{GS}	Gate-to-Source Voltage	± 20	V
E _{AS}	Single Pulse Avalanche Energy (L=1mH, I _{AS} =40A)C	519	mJ
dv/dt	Peak Diode Recovery dv/dt	5.0	V/ns
T _J and T _{STG}	Operating Junction and Storage Temperature Range	-55 to 150	°C

Thermal Resistance

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
R _{θJC}	Junction-to-Case	--	--	0.75	°C/W	Water cooled heatsink, PD adjusted for a peak junction temperature of +175°C.
R _{θJA}	Junction-to-Ambient	--	--	40		1 cubic foot chamber, free air.

OFF Characteristics T_J=25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
B _V DSS	Drain-to-Source Breakdown Voltage	55	--	--	V	V _{GS} =0, I _D =250uA
I _{GSS}	Gate-to-Source Forward Leakage	--	--	±100	nA	V _{DS} =0V, V _{GS} =±20V
I _{DSS}	Zero Gate Voltage Drain Current	--	--	1	uA	V _{DS} =55V, V _{GS} =0V

ON Characteristics T_J=25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max	Units	Test Conditions
R _{DS(ON)}	Static Drain-to-Source On-Resistance	--	--	0.008	Ω	V _{GS} =10V, I _D =59A
V _{GS(TH)}	Gate Threshold Voltage, Figure 12.	2.0	--	4.0	V	V _{DS} =10V, I _D =250uA
G _{fs}	Forward Transconductance	106	---	--	V	V _{DS} =25V, I _D =60A

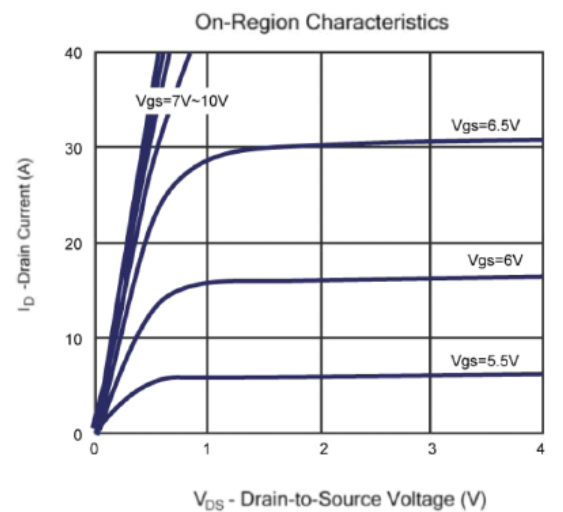
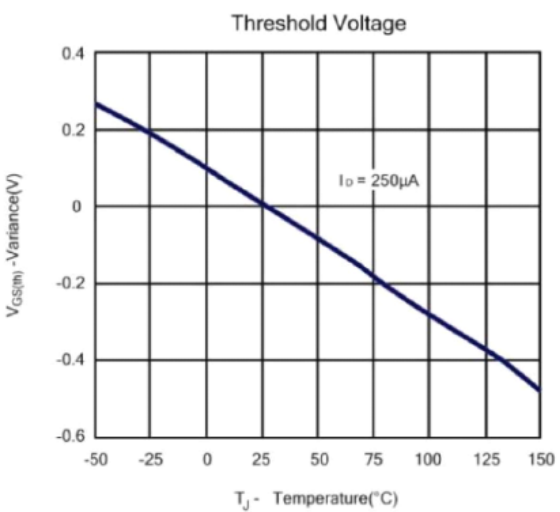
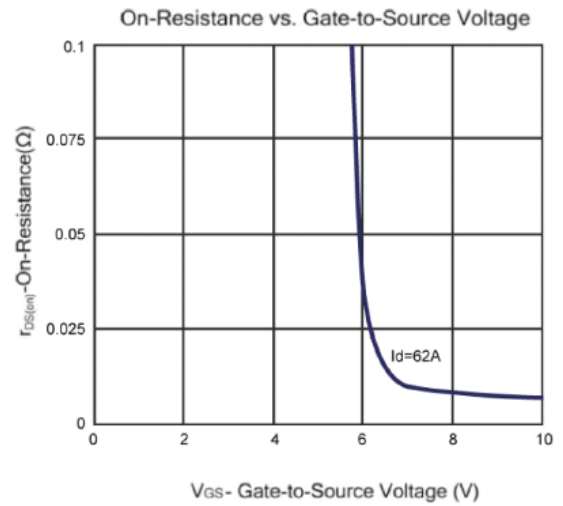
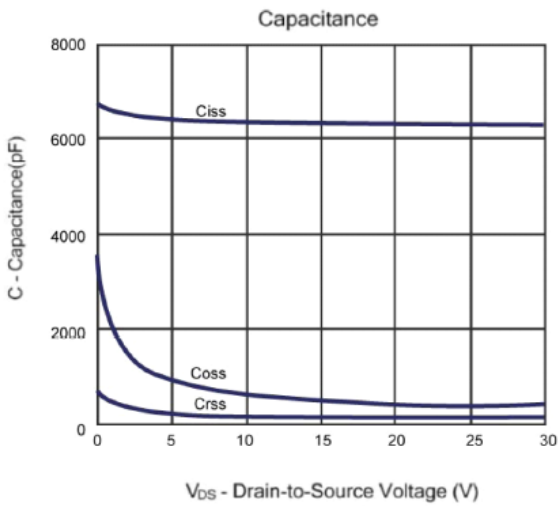
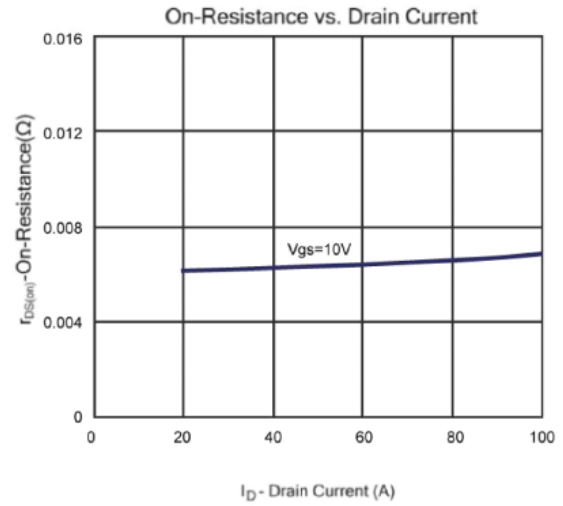
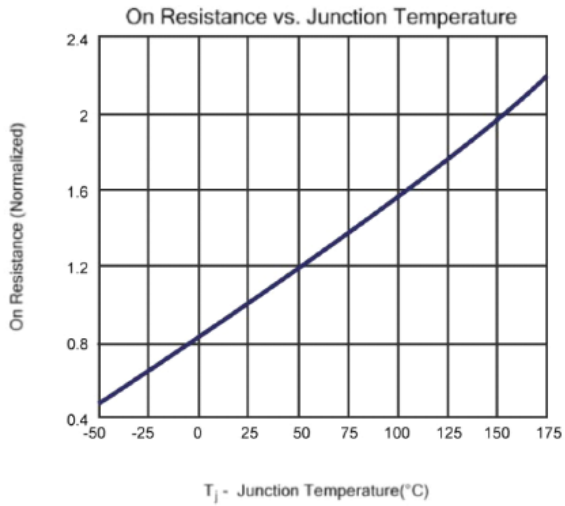
Dynamic Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
C _{iss}	Input Capacitance	--	3000	4250	pF	V _{DS} =25V, V _{GS} =0V, f=1.0MHZ
C _{oss}	Output Capacitance	--	800	1650		
C _{rss}	Reverse Transfer Capacitance	--	200	340		
Q _g	Total Gate Charge	--	100	125	nC	V _{DS} =48V, V _{GS} =10V, I _D =110A
Q _{gs}	Gate-to-Source Charge	--	23	--		
Q _{gd}	Gate-to-Drain ("Miller") Charge	--	36	--		

Resistive Switching Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
T _{d(ON)}	Turn-on Delay Time		37	75	ns	V _{DS} =38V, R _L =25Ω V _{GS} =10V, R _G =6Ω
T _{rise}	Rise Time		18	45		
T _{d(OFF)}	Turn-Off Delay Time		67	120		
T _{fall}	Fall Time		16	40		

Typical Characteristics (T_J = 25°C Noted)



Typical Characteristics (T_J =25°C Noted)

