

N-Channel MOSFETS

DESCRIPTION

The OGFD 3205TR is the N-Channel logic enhancement mode Power field effect transistors are produced using high cell density trench technology. This high density process is especially tailored to minimize on-state resistance.

These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management and other battery powered circuits where high-side switching and low in-line power loss are needed in a very small outline surface mount package.

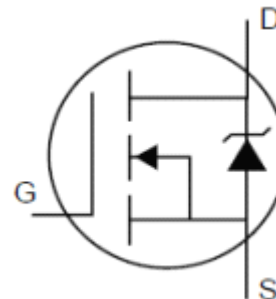
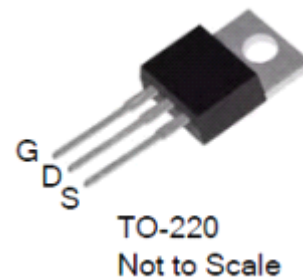
Features:

- RoHS Compliant
- Low ON Resistance
- Low Gate Charge
- Peak Current vs Pulse Width Curve
- Inductive Switching Curves

Applications

- Switching Application Systems
- Inverter systems
- DC Motor Control

V_{DS}	$R_{DS(ON)}$	I_D
55V	6.6m Ω	108A



Ordering Information

PART NUMBER	PACKAGE	BRAND
3205TR	TO-220	OGFD

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

Symbol	Parameter	3205TR	Units
V _{DSS}	Drain-to-Source Voltage	55	V
I _D	Continuous Drain Current	108	A
I _{DM}	Pulsed Drain Current@VG=10V	450	
P _D	Power Dissipation	150	W
	Derating Factor above 25°C	1.00	W/°C
V _{GS}	Gate-to-Source Voltage	± 20	V
E _{AS}	Single Pulse Avalanche Energy (L=1mH, I _{AS} =40A)C	780	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 175	°C

Thermal Resistance

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
R _{θJC}	Junction-to-Case	--	--	0.65	°C/W	Water cooled heatsink, P _D adjusted for a peak junction temperature of +175°C.
R _{θJA}	Junction-to-Ambient	--	--	62		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	5	--	--	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	--	6.6	8	mΩ	V _{GS} =10V, I _D =62A
V _{GS(TH)}	Gate Threshold Voltage, Figure 12.	3	--	5	V	V _{DS} =V _{GS} , I _D =250uA
G _{fs}	Forward Transconductance	--	81	--	V	V _{DS} =15V, I _D =58A

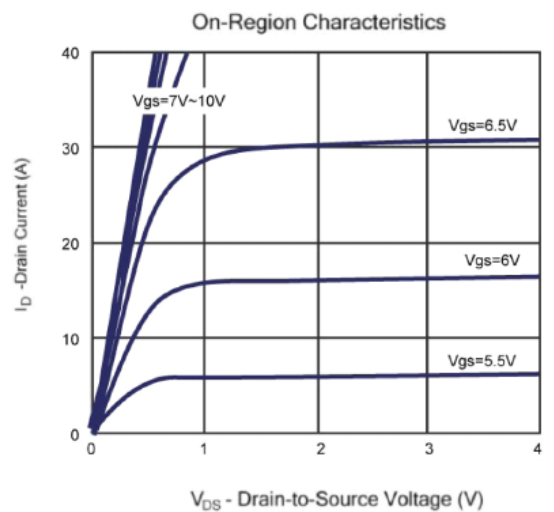
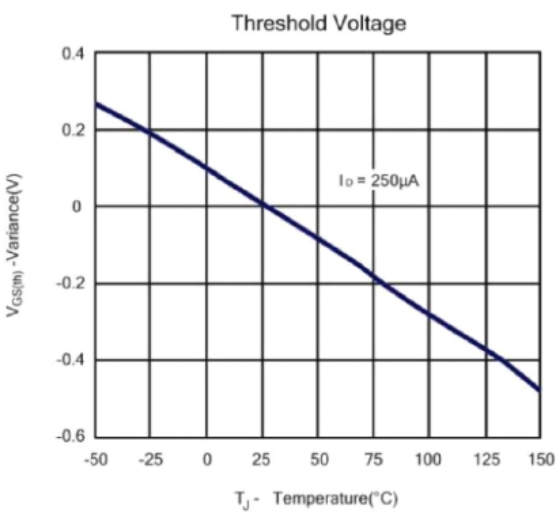
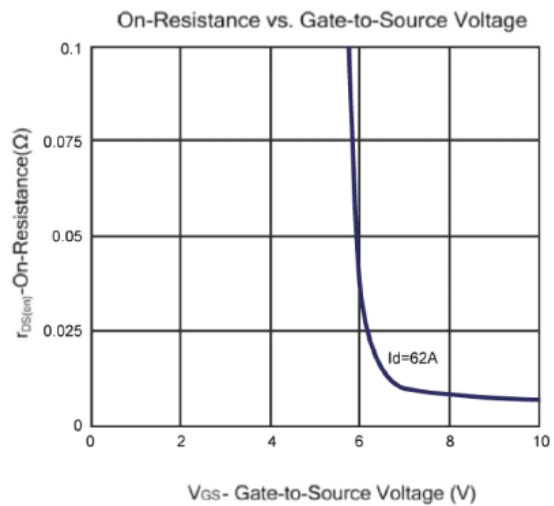
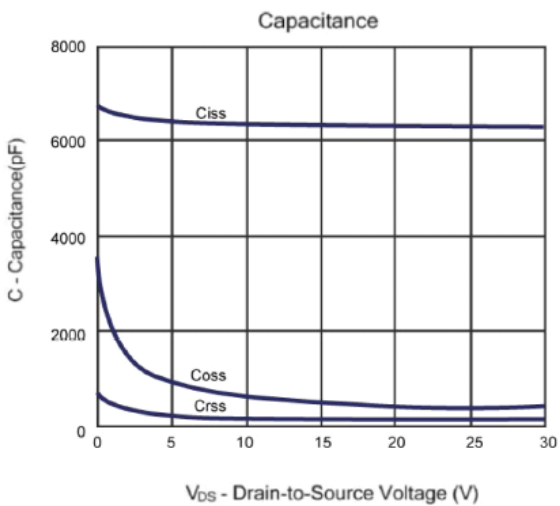
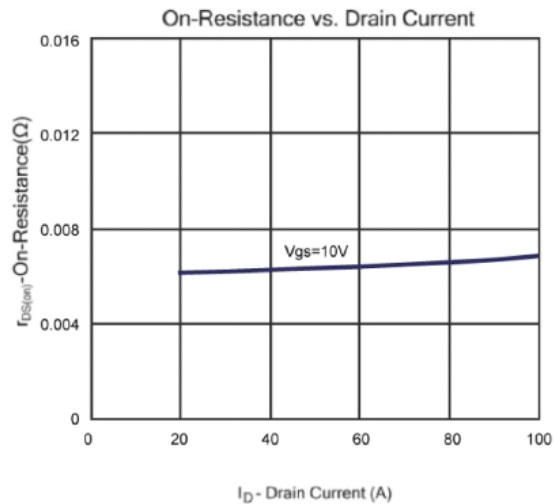
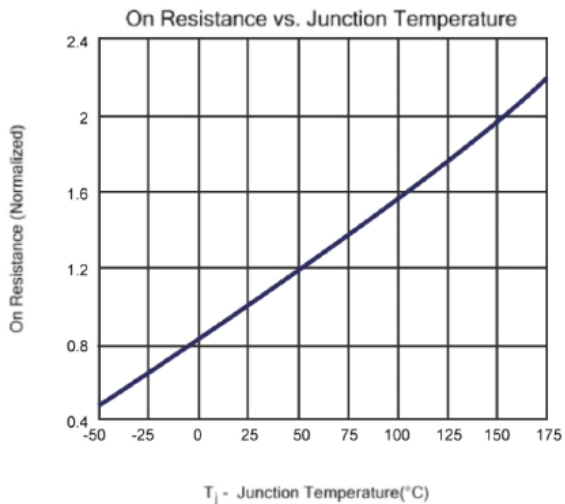
Dynamic Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
C _{iss}	Input Capacitance	--	6330	--	pF	V _{DS} =15V, V _{GS} =0V, f=1MHZ
C _{oss}	Output Capacitance	--	495	--		
C _{rss}	Reverse Transfer Capacitance	--	154	--		
Q _g	Total Gate Charge	--	28	--	nC	V _{DS} =44V, V _{GS} =4.5V, I _D =62A
Q _{gs}	Gate-to-Source Charge	--	41	--		
Q _{gd}	Gate-to-Drain ("Miller") Charge	--	18	--		

Resistive Switching Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
T _{d(ON)}	Turn-on Delay Time		55		ns	V _{DS} =28V, R _L =28Ω V _{GS} =10V, R _G =6Ω
T _{rise}	Rise Time		12			
T _{d(OFF)}	Turn-Off Delay Time		90			
T _{fall}	Fall Time		16			

Typical Characteristics (T_J = 25°C Noted)



Typical Characteristics (T_J =25°C Noted)

