Absolute Maximum Ratings at T_j=25 unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	650	V
Gate-source voltage	V_{GS}	±30	V
Continuous drain current[1], T_C=25 °C	I_D	20	A
Continuous drain current[1], T_C=100 °C		12.5	
Pulsed drain current[2], T_C=25 °C	$I_{D,\ pulse}$	60	A

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		1433		pF	V_{GS}=0 V, V_{DS}=50 V, 00 kHz
Output capacitance	C_{oss}		92.5		pF	
Reverse transfer capacitance	C_{rss}		3.9		pF	
Turn-on delay time	$t_{d(on)}$		40.1		ns	V_{GS}=10 V, V_{DS}=520 V, R_G=25 I_D=20 A
Rise time	t_r		49.8		ns	
Turn-off delay time	$t_{d(off)}$		57.3		ns	
Fall time	t_f		63.7		ns	

Gate Charge Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Total gate charge	Q_g		24.8		nC	V_{GS}=10 V, V_{DS}=520 V, I_D=20 A
Gate-source charge	Q_{gs}		7.2		nC	
Gate-drain charge	Q_{gd}		8.2		nC	
Gate plateau voltage	$V_{plateau}$		5.6		V	

Body Diode Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Diode forward voltage	V_{SD}			1.4	V	I_S=20 A, V_{GS}=0 V
Reverse recovery time	t_{rr}		380		ns	I_S=20 A,
Reverse recovery charge	Q_{rr}		5.3		C	
Peak reverse recovery current	I_{rrm}		25.7		A	

Note

1) Calculated continuous current based on maximum allowable junction temperature.
2) Repetitive rating; pulse width limited by max. junction temperature.
3) Pd is based on max. junction temperature, using junction-case thermal resistance.
4) The value of R is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with T_a=25 °C.
5) V_{DD}=150 V, V_{GS}=10 V, L=10.8 mH, starting T_j=25 °C.

Electrical Characteristics Diagrams

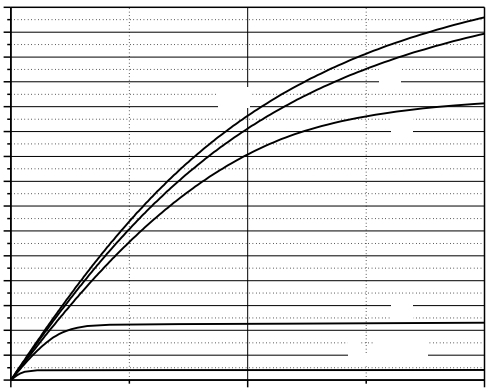

Figure 1. Typ. output characteristics

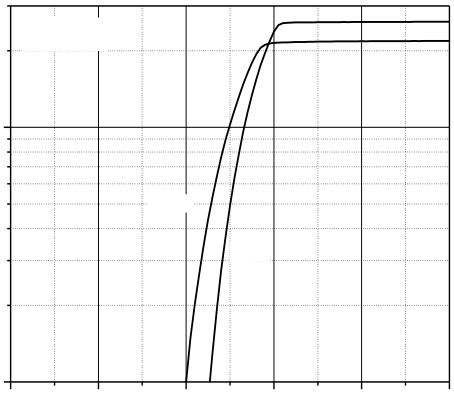

Figure 2. Typ. transfer characteristics

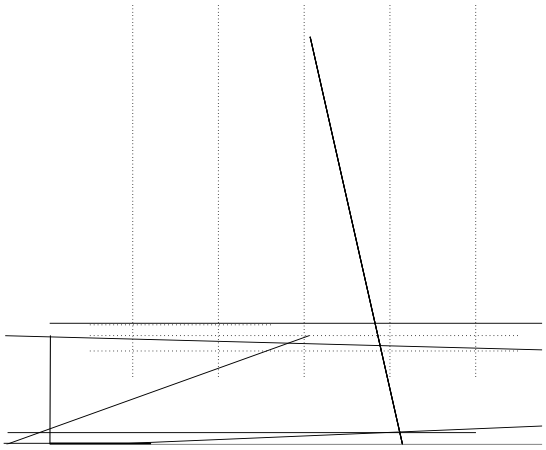

Figure 3. Typ. capacitances

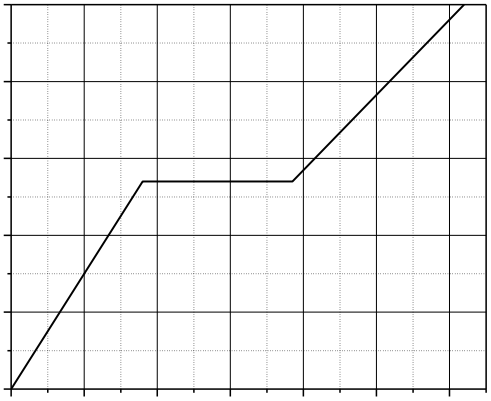

Figure 4. Typ. gate charge

Figure 5. Drain-source breakdown voltage

Figure 6. Drain-source on-state resistance

Figure 7. Threshold voltage	**Figure 8. Forward characteristic of body diode**
Figure 9. Drain-source on-state resistance	**Figure 10. Drain current**

Ordering Information

Package Type	Units/ Tube	Tubes/ Inner Box	Units/ Inner Box	Inner Boxes/ Carton Box	Units/ Carton Box
TO220-P	50	20	1000	6	6000

Product Information

Product	Package	Pb Free	RoHS	Halogen Free
OSG65R200PF	TO220	yes	yes	yes