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	15	A
Continuous drain current[1], T_C=100 °C		9.5	
Pulsed drain current[2], T_C=25 °C	$I_{D, pulse}$	45	A
Continuous diode forward current[1], T_C=25 °C	I_S	15	A
Diode pulsed current[2], T_C=25 °C	$I_{S, pulse}$	45	A
Power dissipation[3], T_C=25 °C	P_D	123	W
Single pulsed avalanche energy[5]	E_{AS}	360	mJ
MOSFET dv/dt ruggedness, V_{DS}))	dv/dt	50	V/ns
Reverse diode dv/dt, V_{DS})) SD D	dv/dt	15	V/ns
Operation and storage temperature	T_{stg}, T_j	-55 to 150	°C

Thermal Characteristics

PWBT/F3 9.96 841.92 reWBT/F4 9

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° C8302.15 61.8 0.440903ref337.75 481.87 61.8 0.480903ref399.55 482.35 0.48001 19.0903ref400.03 481.87 67.584 0.480903ref467.

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		1227		pF	V_{GS}=0 V, V_{DS}=50 V, 00 kHz
Output capacitance	C_{oss}		100.2		pF	
Reverse transfer capacitance	C_{rss}		7.1		pF	
Turn-on delay time	$t_{d(on)}$		24.7		ns	V_{GS}=10 V, V_{DS}=400 V, R_G=2 I_D=8 A
Rise time	t_r		7.3		ns	
Turn-off delay time	$t_{d(off)}$		56.3		ns	
Fall time	t_f		9.5		ns	

Gate Charge Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Total gate charge	Q_g		26.4		nC	V_{GS}=10 V, V_{DS}=400 V, I_D=8 A
Gate-source charge	Q_{gs}		7.8		nC	
Gate-drain charge	Q_{gd}		7.9		nC	
Gate plateau voltage	$V_{plateau}$		5.3		V	

Body Diode Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Diode forward voltage	V_{SD}			1.4	V	I_S=15 A, V_{GS}=0 V
Reverse recovery time	t_{rr}		292		ns	, I_S=8 A, di/dt=10) (
Reverse recovery charge	Q_{rr}		3.5		C	
Peak reverse recovery current	I_{rrm}		21.8		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}=100 V, V_{GS}=10 V, L=79.9 mH, starting T_j=25 °C.

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Electrical Characteristics Diagrams

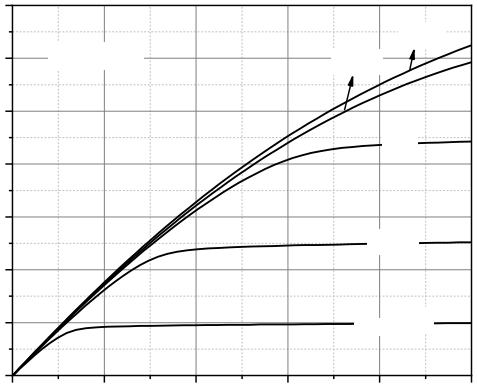

Figure 1. Typ. output characteristics

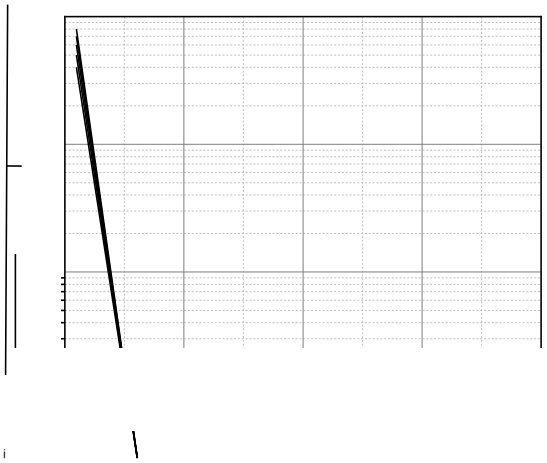

Figure 2. Typ. transfer characteristics

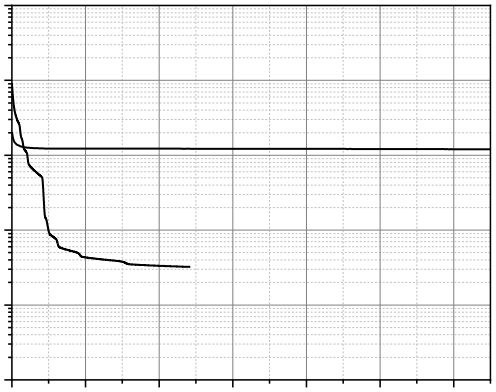

Figure 3. Typ. capacitances

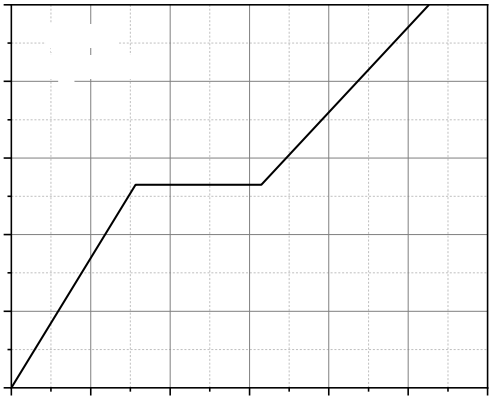

Figure 4. Typ. gate charge

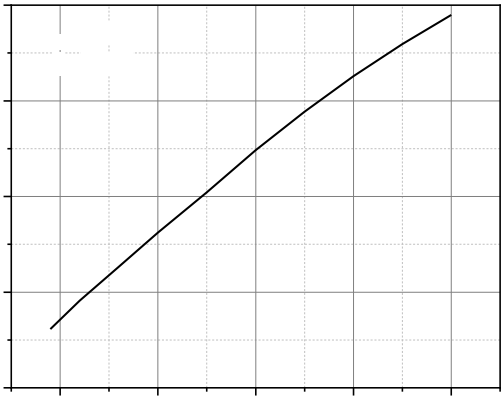

Figure 5. Drain-source breakdown voltage

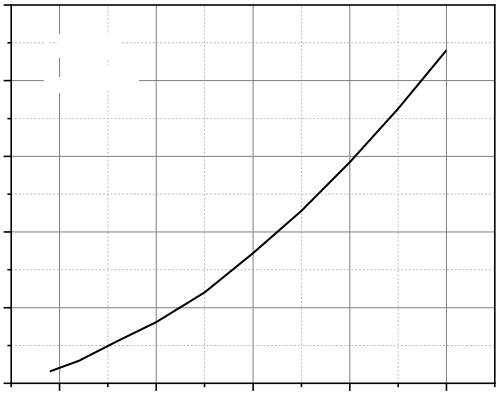

Figure 6. Drain-source on-state resistance

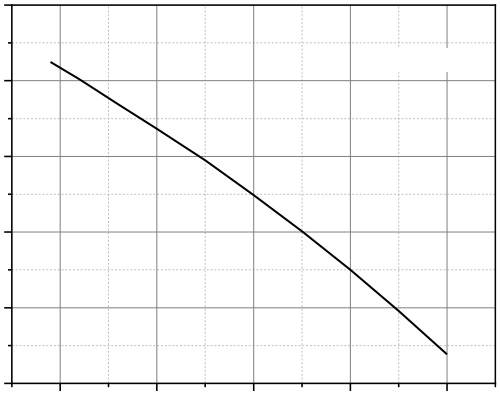

Figure 7. Threshold voltage

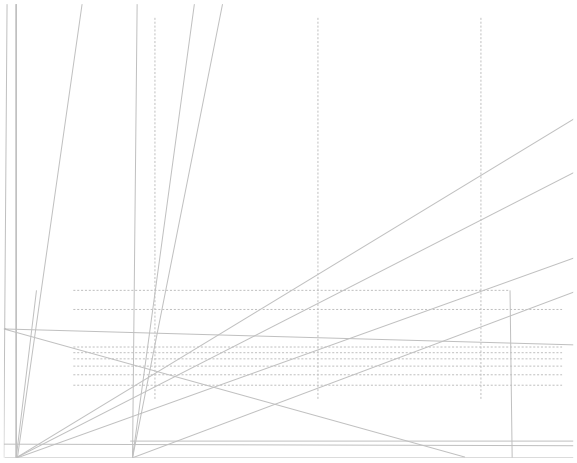

Figure 8. Forward characteristic of body diode

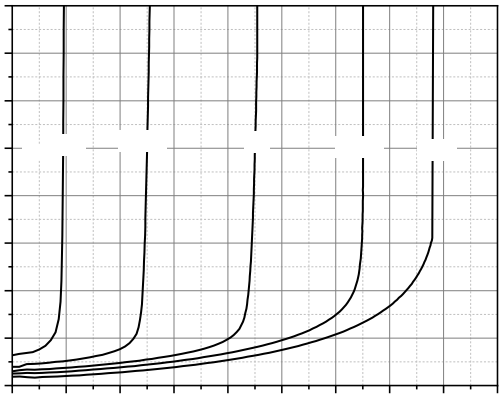

Figure 9. Drain-source on-state resistance

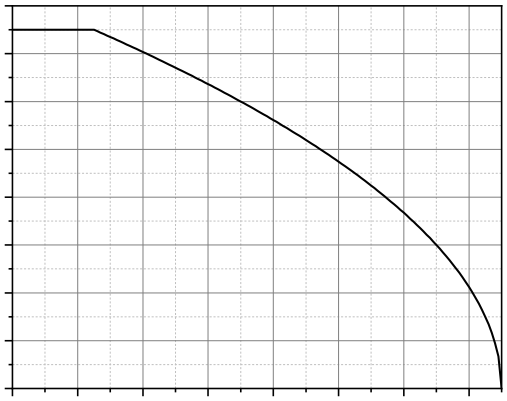

Figure 10. Drain current

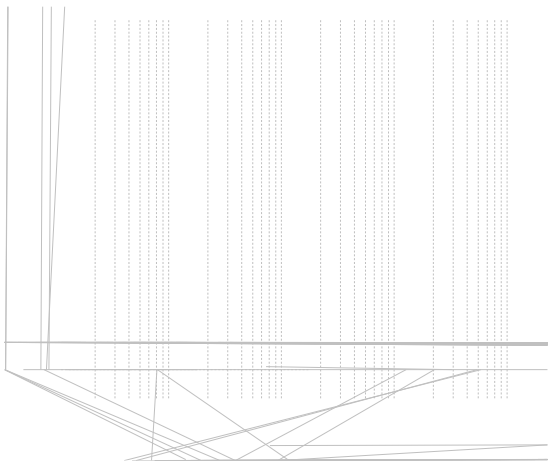

Figure 11. Safe operation area T_C=25 °C

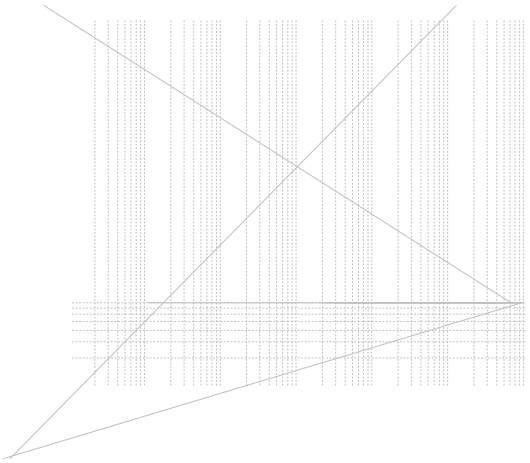

Figure 12. Max. transient thermal impedance

Test circuits and waveforms

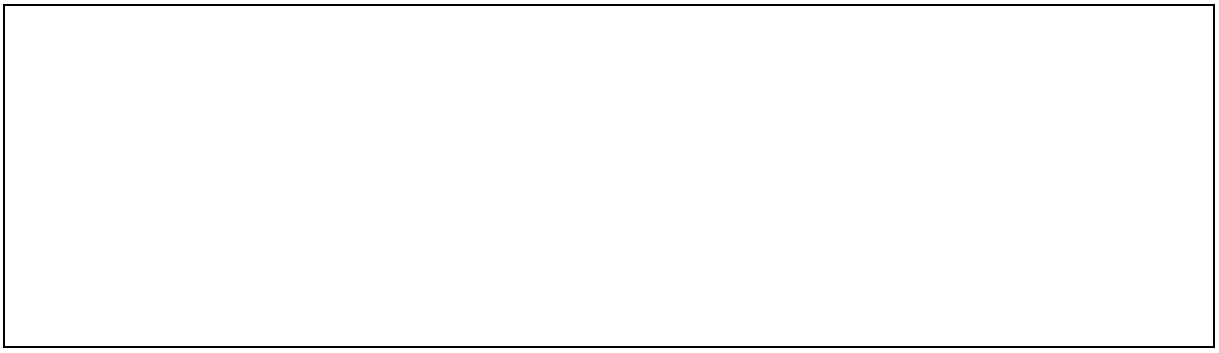

Figure 1. Gate charge test circuit & waveform

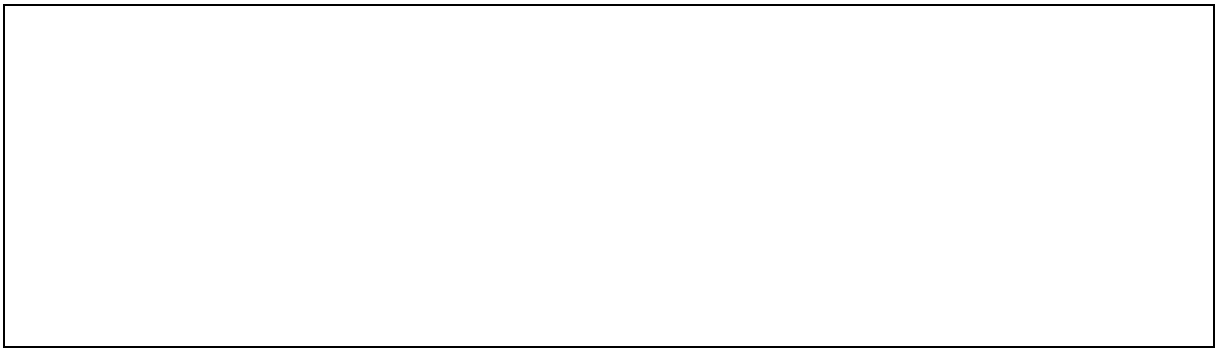

Figure 2. Switching time test circuit & waveforms

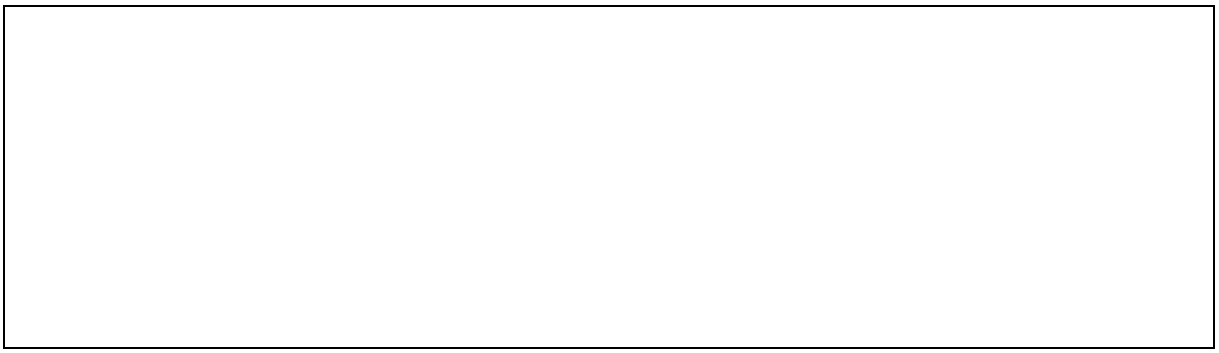

Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

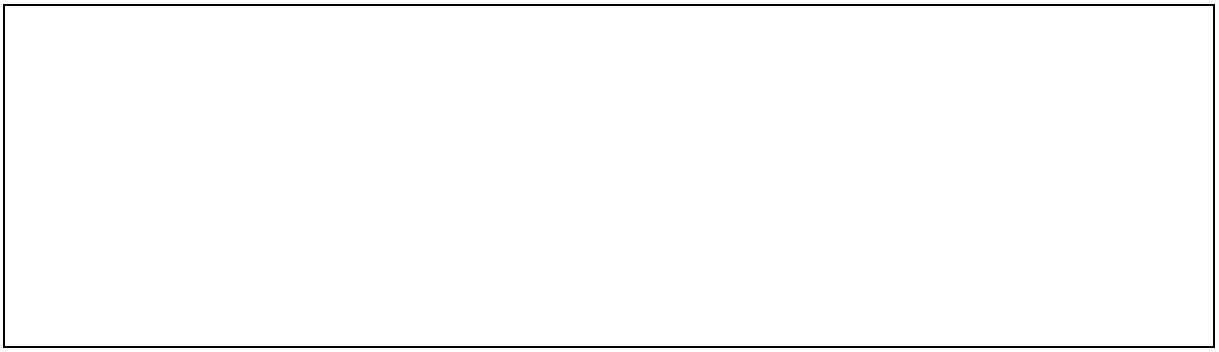

Figure 4. Diode reverse recovery test circuit & waveforms

Ordering Information

Package Type	Units/ Reel	Reels/ Inner Box	Units/ Inner Box	Inner Boxes/ Carton Box	Units/ Carton Box
TO252-J	2500	2	5000	5	25000

Product Information

Product	Package	Pb Free	RoHS	Halogen Free
OSG65R260DSF	TO252	yes	yes	yes

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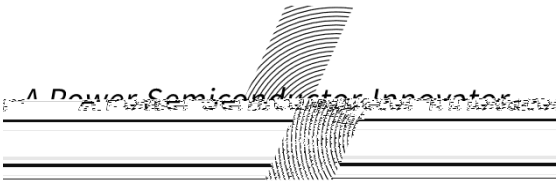

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