The GreenMOS® high voltage MOSFET utilizes charge balance technology to achieve outstanding low on-resistance and lower gate charge. It is engineered to minimize conduction loss, provide superior switching performance and robust avalanche capability.

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Parameter	Value	Unit
$V_{DS,\ min}$ @ $T_{j(max)}$	700	V
$I_{D,\ pulse}$	96	A
$R_{DS(ON),\ max}$ @ V_{GS}=10V	99	m
Q_g	66.6	nC

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		3988.2		pF	V_{GS}=0 V, V_{DS}=50 V, 00 kHz
Output capacitance	C_{oss}		210.4		pF	
Reverse transfer capacitance	C_{rss}		7.4		pF	
Turn-on delay time	$t_{d(on)}$		46.0		ns	V_{GS}=10 V, V_{DS}=400 V, R_G I_D=20 A
Rise time	t_r		60.3		ns	
Turn-off delay time	$t_{d(off)}$		93.0		ns	
Fall time	t_f		3.7		ns	

Gate Charge Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Total gate charge	Q_g		66.6		nC	V_{GS}=10 V, V_{DS}=400 V, I_D=20 A
Gate-source charge	Q_{gs}		20.6		nC	
Gate-drain charge	Q_{gd}		24.8		nC	
Gate plateau voltage	$V_{plateau}$		6.7		V	

Body Diode Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Diode forward voltage	V_{SD}			1.3	V	I_S=32 A, V_{GS}=0 V
Reverse recovery time	t_{rr}		151.7		ns	I_S=20 A, di/dt=100
Reverse recovery charge	Q_{rr}		1.0		C	
Peak reverse recovery current	I_{rrm}		12.3		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=80 mH, starting T_j=25 °C.

Electrical Characteristics Diagrams

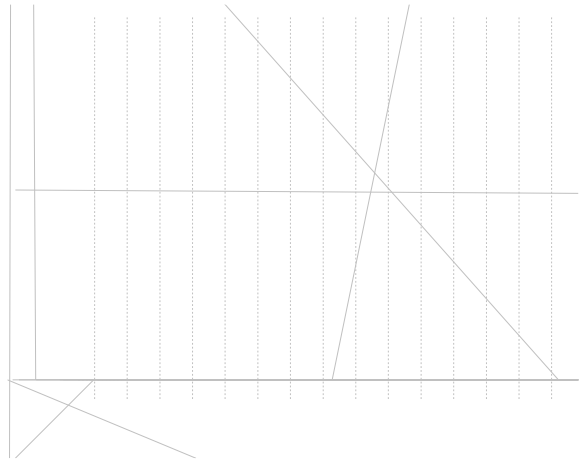

Figure 1. Typ. output characteristics

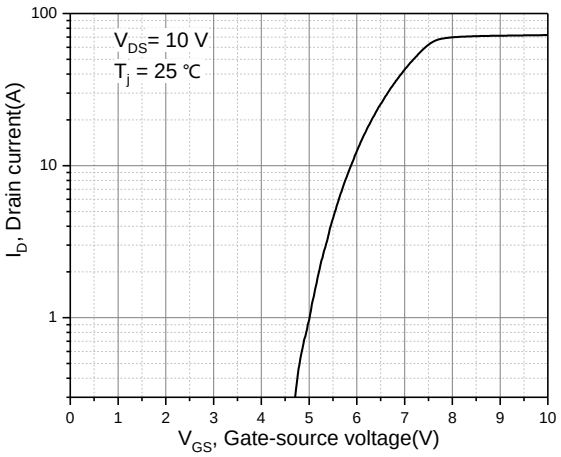

Figure 2. Typ. transfer characteristics

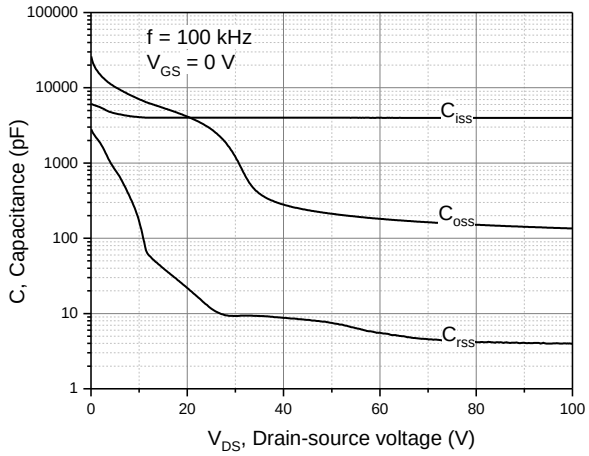

Figure 3. Typ. capacitances

Figure 4. Typ. gate charge

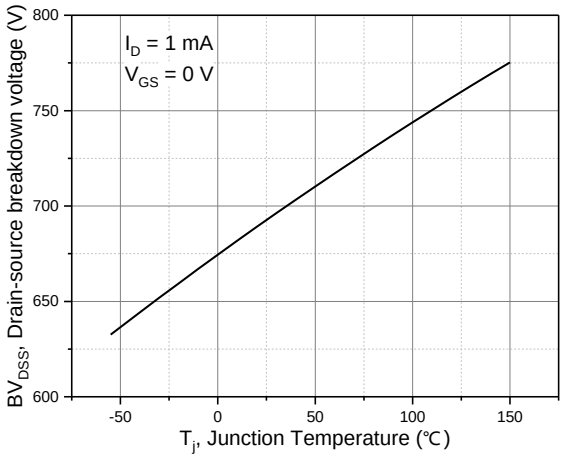

Figure 5. Drain-source breakdown voltage

Figure 6. Drain-source on-state resistance

Figure 7. Forward characteristic of body diode

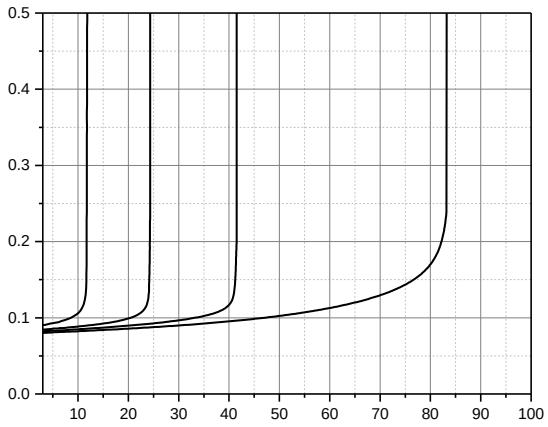

Figure 8. Drain-source on-state resistance

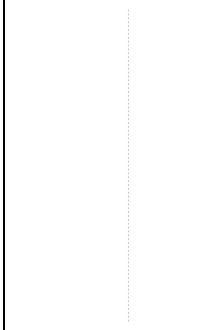

Figure 9. Drain current

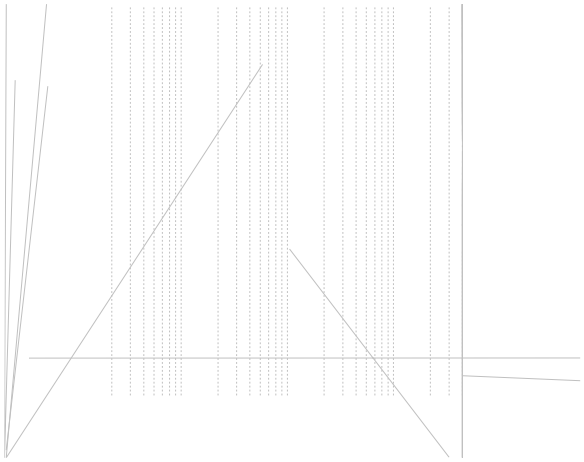

Figure 10. Safe operation area T_C=25 °C

Test circuits and waveforms

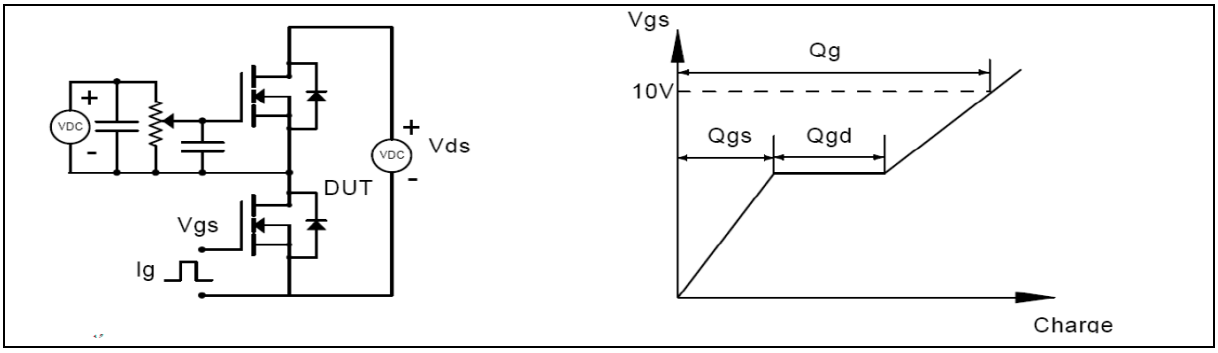

Figure 1. Gate charge test circuit & waveform

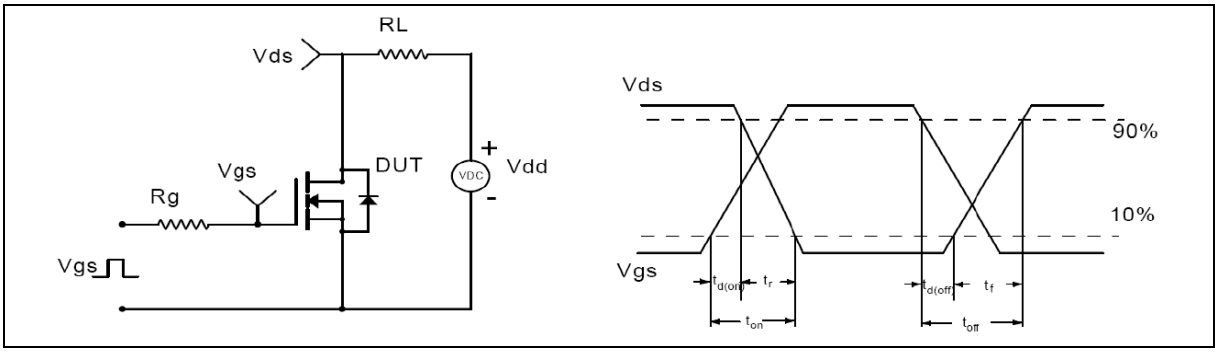

Figure 2. Switching time test circuit & waveforms

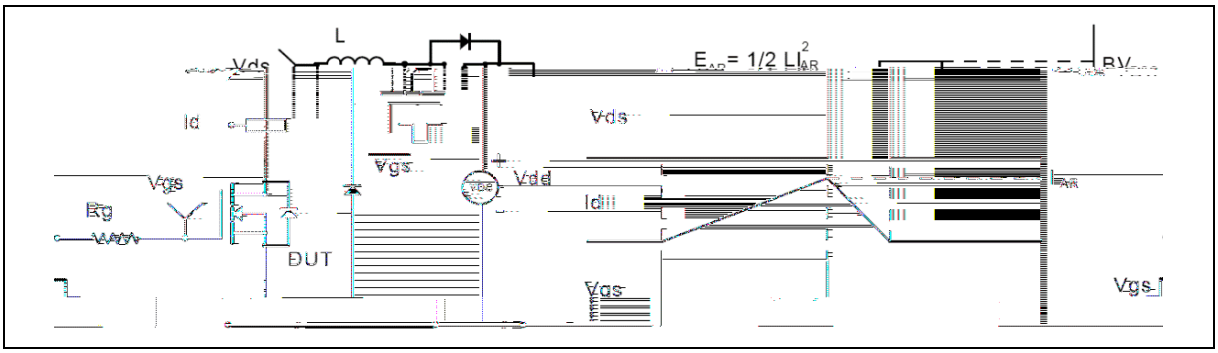

Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

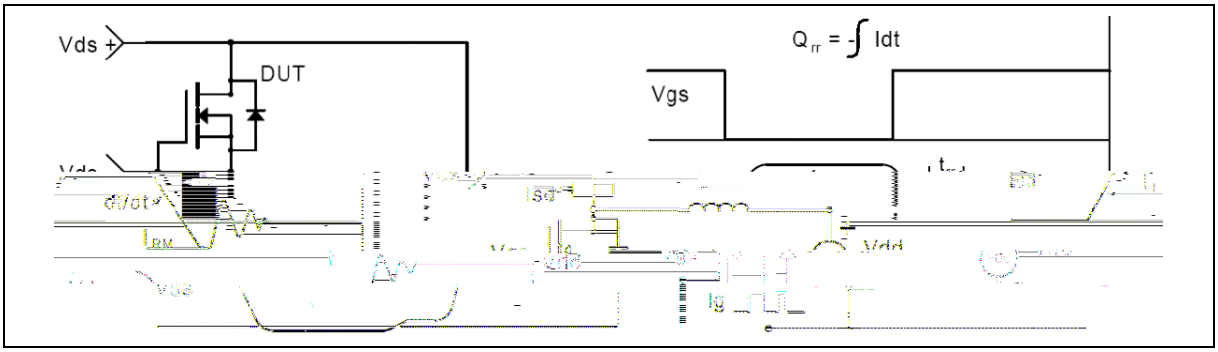

Figure 4. Diode reverse recovery test circuit & waveforms

Package Information

Symbol	mm		
	Min	Nom	Max
A	4.80	5.00	5.20
A1	2.21	2.41	2.59
A2	1.85	2.00	2.15
b	1.11	1.21	1.36

Ordering Information

Package Type	Units/ Tube	Tubes/ Inner Box	Units/ Inner Box	Inner Boxes/ Carton Box	Units/ Carton Box
TO247-C	30	11	330	6	1980

Product Information

Product	Package	Pb Free	RoHS	Halogen Free
OSG65R099HSZF	TO247	yes	yes	yes