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.

GreenMOS®

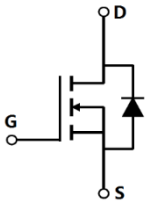
RoHS

-
-
-
-

-
-
-
-
-

Parameter	Value	Unit
$V_{DS,\ min}$ @ $T_{j(max)}$	700	V
$I_{D,\ pulse}$	54	A
$R_{DS(ON),\ max}$ @ V_{GS}=10V	220	m
Q_g	21.7	nC

Product Name	Package	Marking
OSG65R220HZF	TO247	OSG65R220HZ



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	18	A
Continuous drain current[1], T_C=100 °C		11.5	
Pulsed drain current[2], T_C=25 °C	$I_{D,\ pulse}$	54	A
Continuous diode forward current[1], T_C=25 °C	I_S	18	A
Diode pulsed current[2], T_C=25 °C	$I_{S,\ pulse}$	54	A
Power dissipation[3] ,T_C=25 °C	P_D	151	W
Single pulsed avalanche energy[5]	E_{AS}	272	mJ
MOSFET dv/dt ruggedness, V_{DS}	dv/dt	100	V/ns
Reverse diode dv/dt, V_{DS} $_{SD}$ $_{D}$	dv/dt	50	V/ns

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		1493		pF	V_{GS}=0 V, V_{DS}=50 V, MHz
Output capacitance	C_{oss}		101		pF	
Reverse transfer capacitance	C_{rss}		2.05		pF	
Turn-on delay time	$t_{d(on)}$		45.28		ns	V_{GS}=10 V, V_{DS}=400 V, R_G=20 I_D=18 A
Rise time	t_r		82.64		ns	
Turn-off delay time	$t_{d(off)}$					

Electrical Characteristics Diagrams

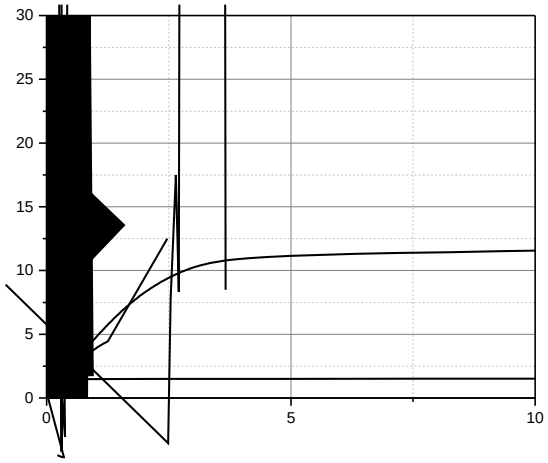


Figure 1. Typ. output characteristics

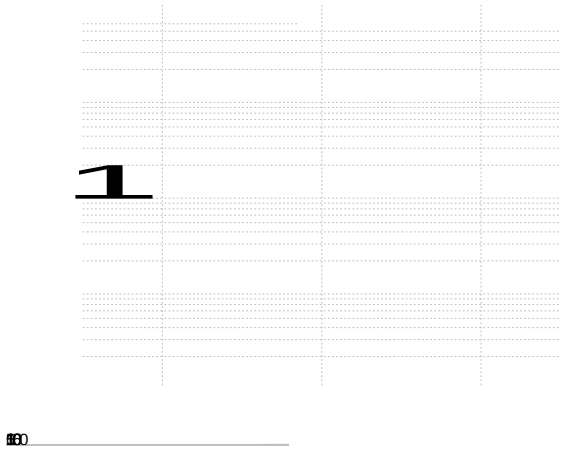


Figure 2. Typ. transfer characteristics

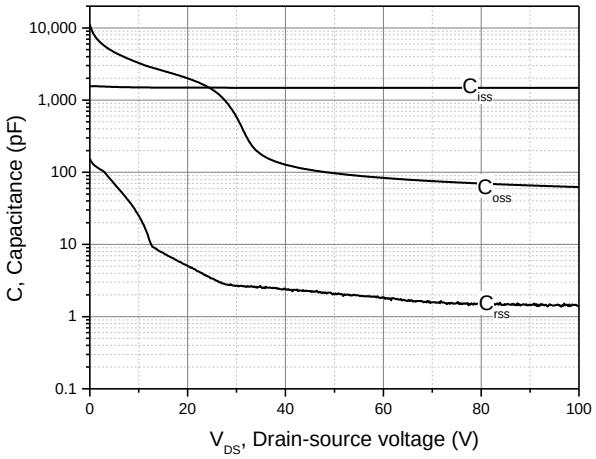


Figure 3. Typ. capacitances

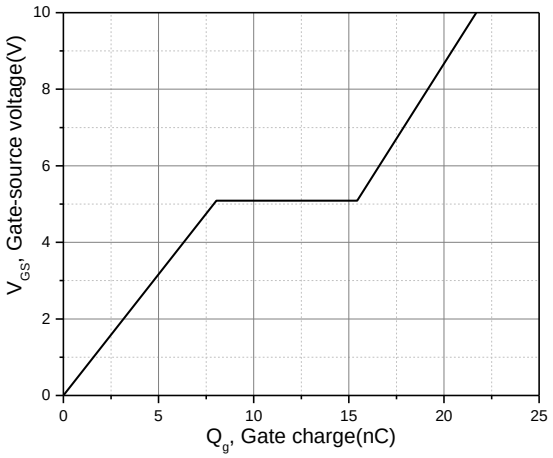


Figure 4. Typ. gate charge

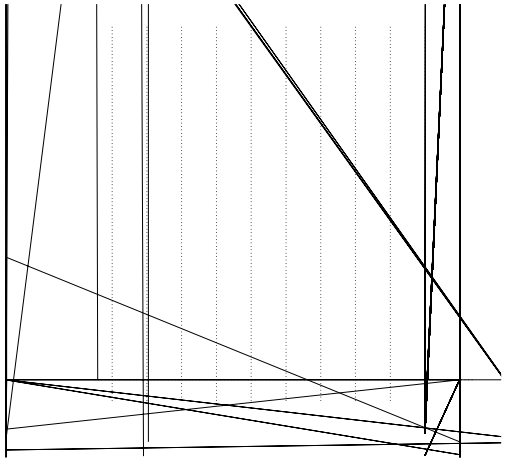


Figure 5. Drain-source breakdown voltage

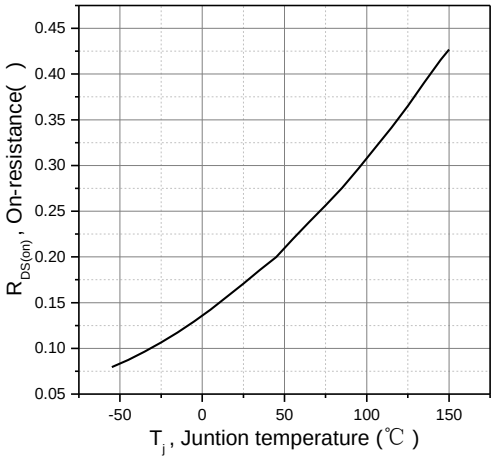


Figure 6. Drain-source on-state resistance

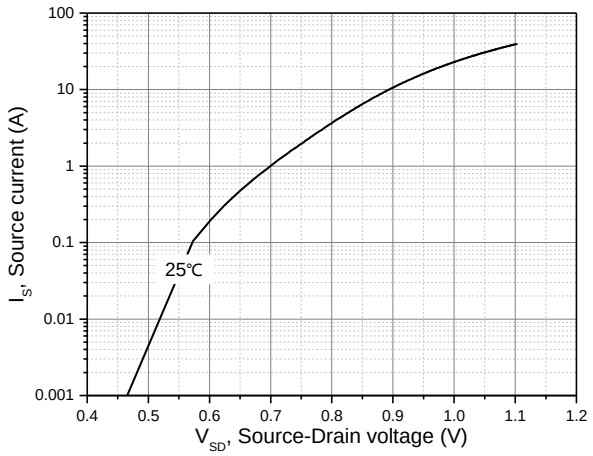


Figure 7. Forward characteristic of body diode

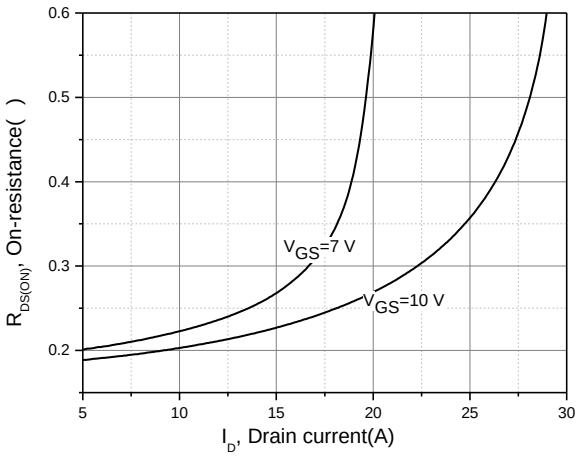


Figure 8. Drain-source on-state resistance

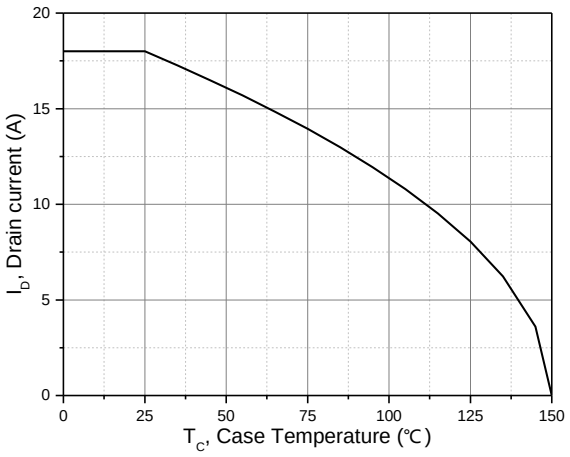


Figure 9. Drain current

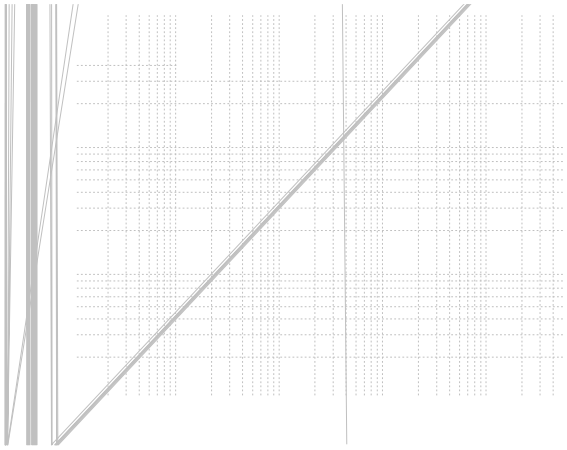


Figure 10. Safe operation area T_C=25 °C

Test circuits and waveforms

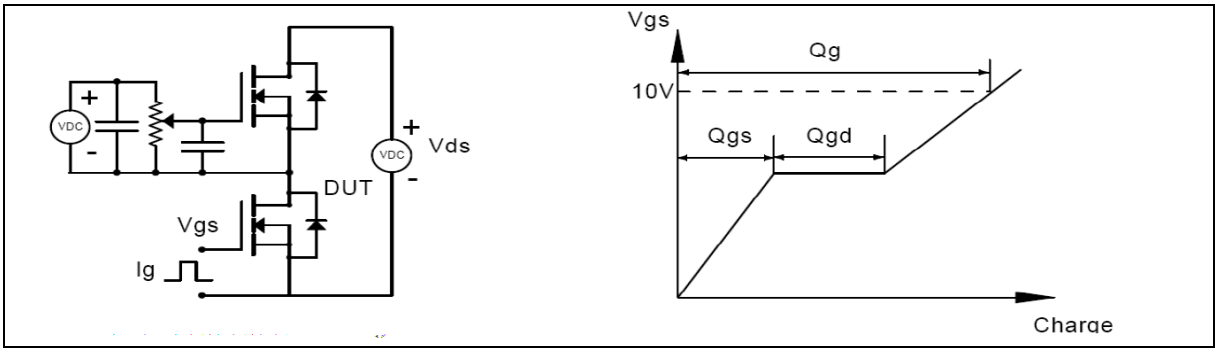


Figure 1. Gate charge test circuit & waveform

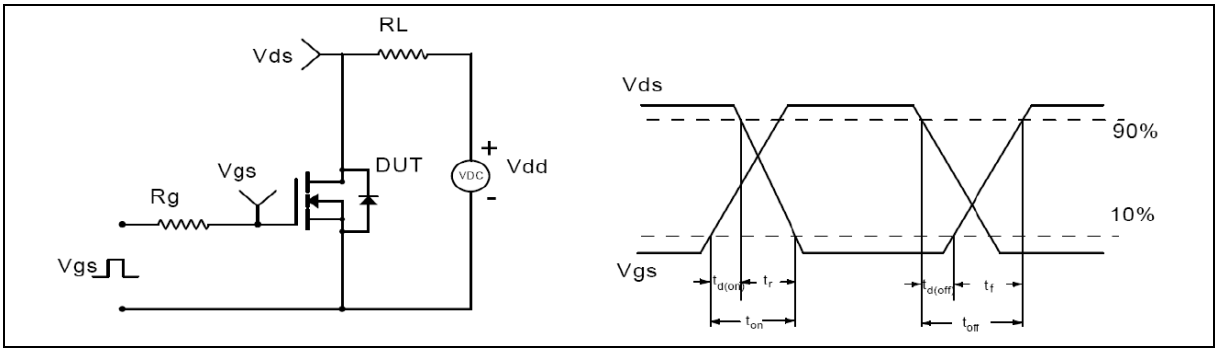


Figure 2. Switching time test circuit & waveforms

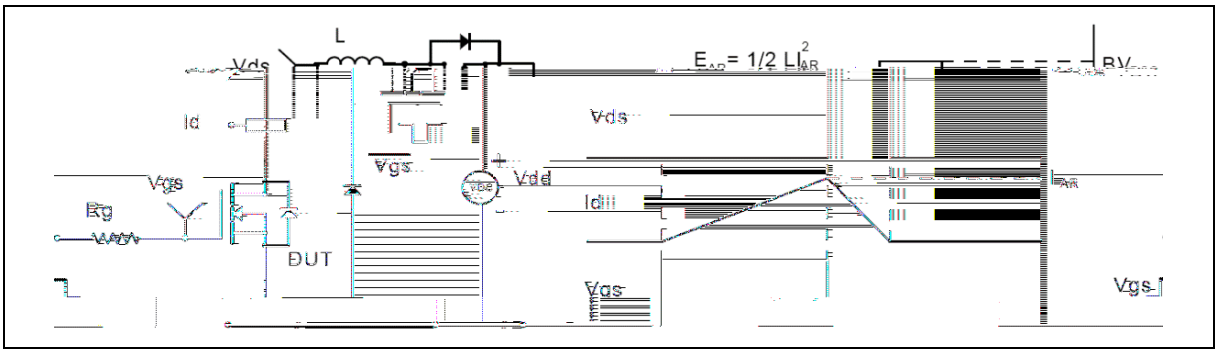


Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

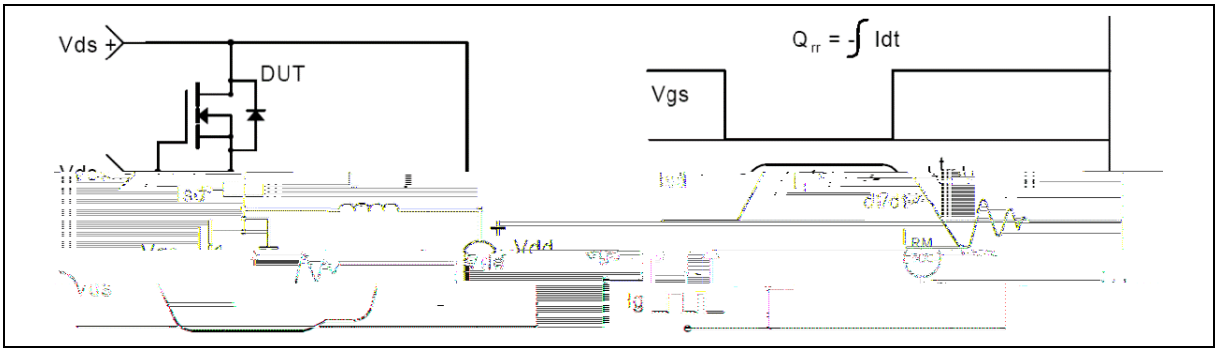
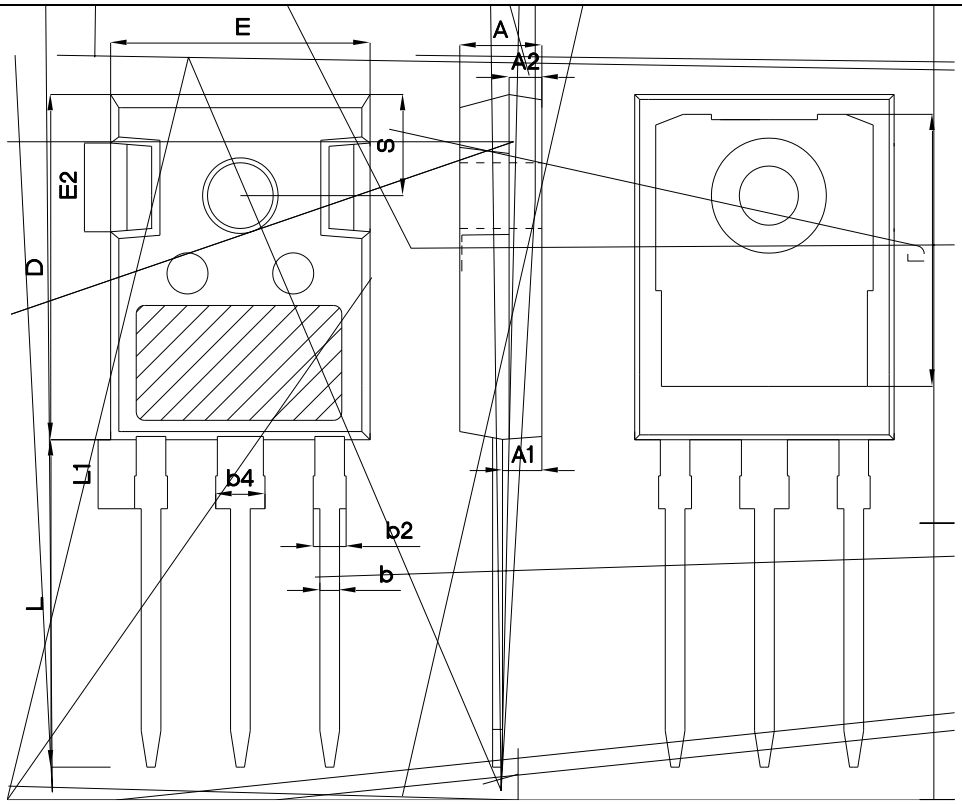


Figure 4. Diode reverse recovery test circuit & waveforms

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
b2	1.91	2.01	2.21
b4	2.91	3.01	3.21
c	0.51	0.61	0.75
D	20.80	21.00	21.30
D1	16.25	16.55	16.85
E	15.50	15.80	16.10
E1	13.00	13.30	13.60
E2	4.80	5.00	5.20
E3	2.30	2.50	2.70
e	5.44 BSC		
L	19.82	19.92	20.22
L1	-	-	4.30
	3.40	3.60	3.80
	-	-	7.30
S	6.15 BSC		

Version1: TO247-C package outline dimension

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
OSG65R220HZF	TO247	yes	yes	yes