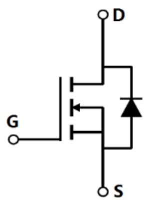
The GreenMOS® high voltage MOSFET utilizes charge balance technology to achieve outstanding low on-resistance and lower gate charge. It is engineered to minimize conduction loss, provide superior switching performance and robust avalanche capability.
Sgd F ddmLNR R rd hdr hr nosh hydc en hsr r v hsbghmf bg   bsd hrshbr sn bghdud f f drrhud DL H rs mc cr-Hshr d rxsn trd en rl   kkd onv d rtookx rxrsdl r sn l ddssgd ansg deehbhdmbx mc DL H rs mc cr-

- Knv QCR NM(ENL
- Dws dl dkx knv r v hsbghmf knr r
- Dwbdkkdmsr s ahkhsx mc t mhen l hsx

- KDC khf gshmf
- Bg f d
- @c osd
- Sdkdbnl   onv d
- Rd ud onv d
- Rnk .TOR

Parameter	Value	Unit
$V_{DS, min}$ @ $T_{j(max)}$	700	V
$I_{D, pulse}$	24	A
$R_{DS(ON), max}$ @ V_{GS}=10V	600	I
Q_g	12.7	nC

Product Name	Package	Marking
OSG65R600DSF	TO252	OSG65R600DS



Absolute Maximum Ratings at T_j=25 B 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	8	A
Continuous drain current[1], T_C=100 °C		4.5	
Pulsed drain current[2], T_C=25 °C	$I_{D,\ pulse}$	24	A
Continuous diode forward current[1], T_C=25 °C	I_S	8	A
Diode pulsed current[2], T_C=25 °C	$I_{S,\ pulse}$	24	A
Power dissipation[3], T_C=25 °C	P_D	65	W
Single pulsed avalanche energy[5]	E_{AS}	129	mJ
MOSFET dv/dt ruggedness, V_{DS} / 37/ U	dv/dt	50	V/ns
Reverse diode dv/dt, V_{DS} / 37/ U HSD±Hd	dv/dt	15	V/ns
Operation and storage temperature	T_{stg}, T_j	-55 to 150	°C

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal resistance, junction-case	R I B	1.92	°C/W
Thermal resistance, junction-ambient[4]	R I @	62	°C/W

Electrical Characteristics at T_j=25 B unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Drain-source breakdown voltage	BV_{DSS}	650			V	V_{GS}=0 V, I_D=250 A
		700				V_{GS}=0 V, I_D 14/ @ T_j=150 °C
Gate threshold voltage	$V_{GS(th)}$	2.9		3.9	V	V_{DS}=V_{GS}, I_D=250 A
Drain-source on-state resistance	$R_{DS(ON)}$		0.54	0.6		V_{GS}=10 V, I_D=4 A
			1.34			V_{GS}=10 V, I_D=4 A, T_j=150 °C
Gate-source leakage current	I_{GSS}			100	nA	V_{GS}=30 V
				-100		V_{GS}=-30 V
Drain-source leakage current	I_{DSS}			1	A	V_{DS}=650 V, V_{GS}=0 V
Gate resistance	R_G		10.3			=1 MHz, Open drain

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		551		pF	V_{GS}=0 V, V_{DS}=50 V, 000 kHz
Output capacitance	C_{oss}		41		pF	
Reverse transfer capacitance	C_{rss}		1.6		pF	
Turn-on delay time	$t_{d(on)}$		20.9		ns	V_{GS}=10 V, V_{DS}=400 V, R_G=2 I_D=4 A
Rise time	t_r		7.6		ns	
Turn-off delay time	$t_{d(off)}$					

Electrical Characteristics Diagrams

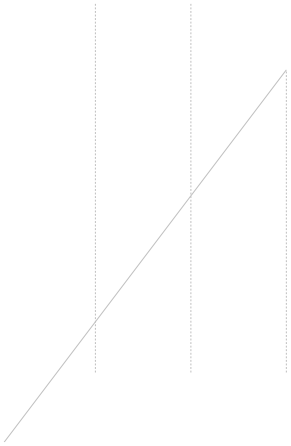


Figure 1. Typ. output characteristics

Figure 2. Typ. transfer characteristics

Figure 3. Typ. capacitances

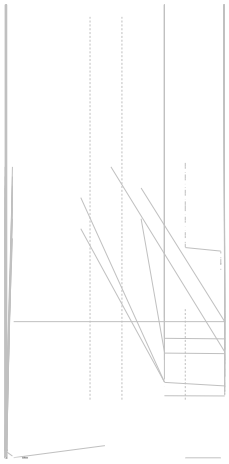


Figure 4. Typ. gate charge

Figure 5. Drain-source breakdown voltage

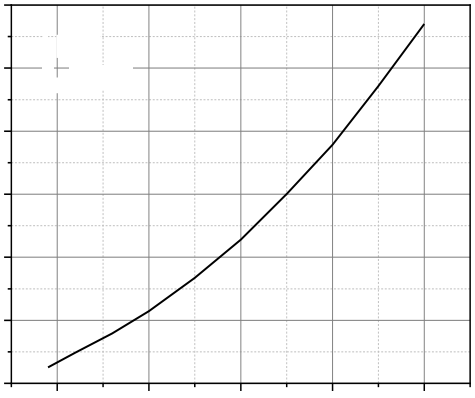


Figure 6. Drain-source on-state resistance

Figure 7. Threshold voltage

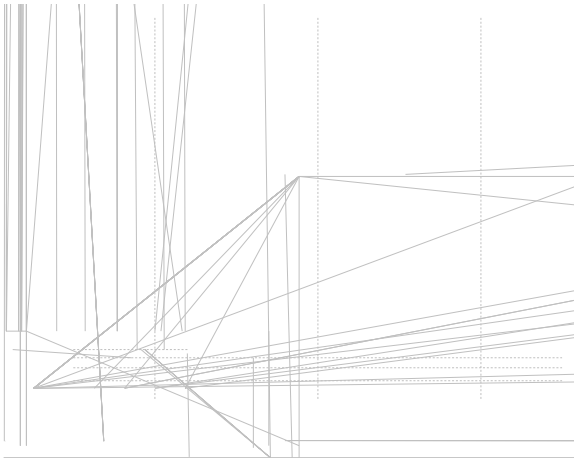


Figure 8. Forward characteristic of body diode

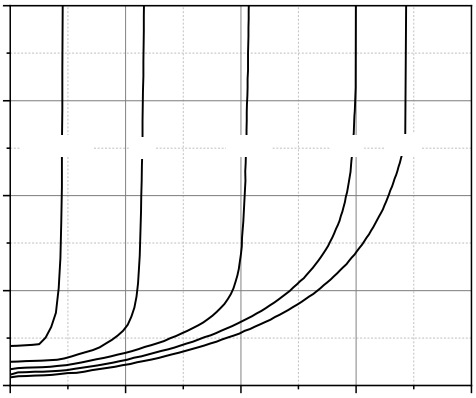


Figure 9. Drain-source on-state resistance

Figure 10. Drain current

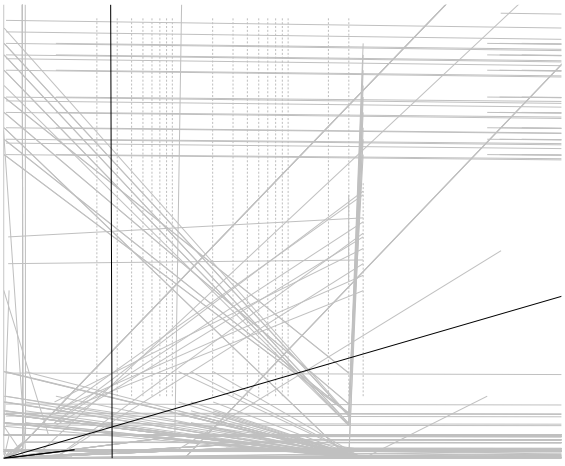


Figure 11. Safe operation area T_C=25 °C

Figure 12. Max. transient thermal impedance

Test circuits and waveforms

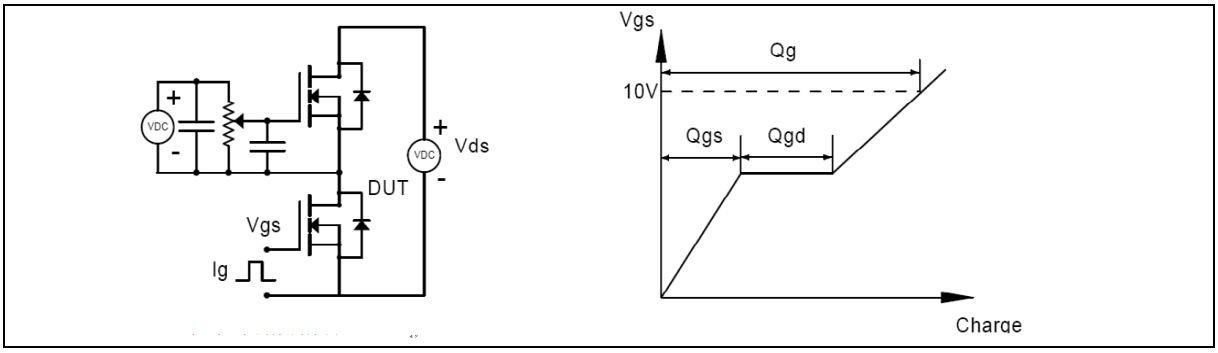


Figure 1. Gate charge test circuit & waveform

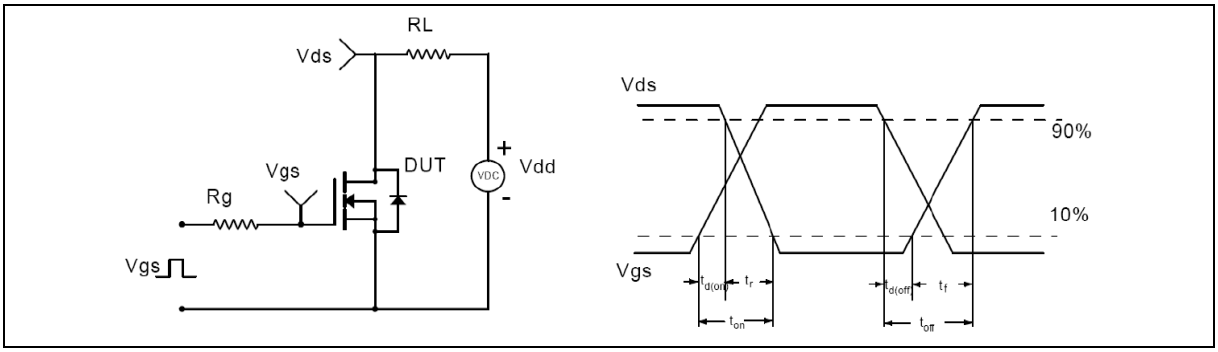


Figure 2. Switching time test circuit & waveforms

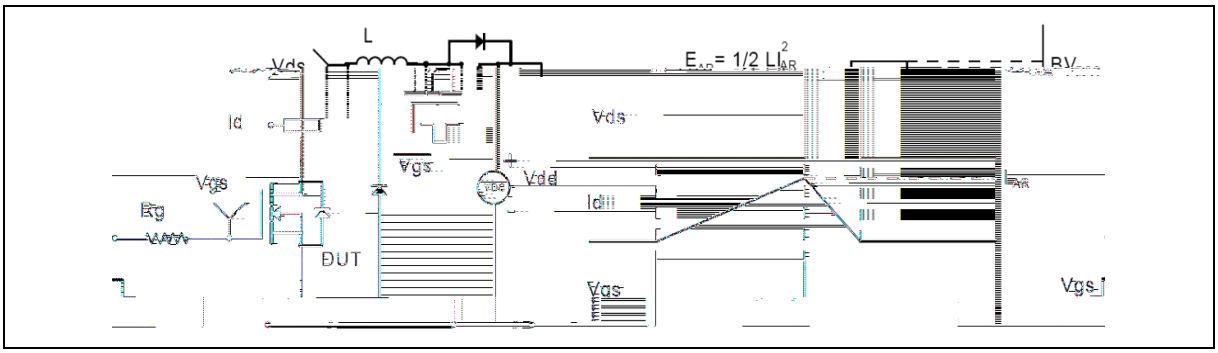


Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

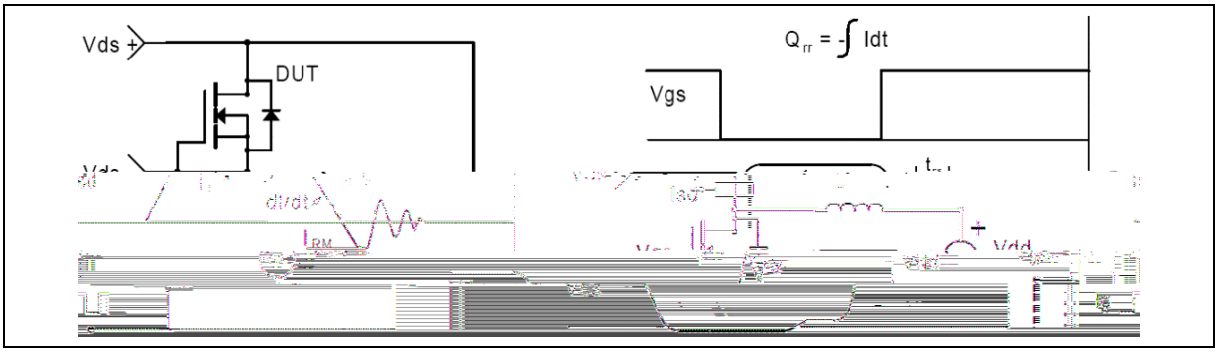
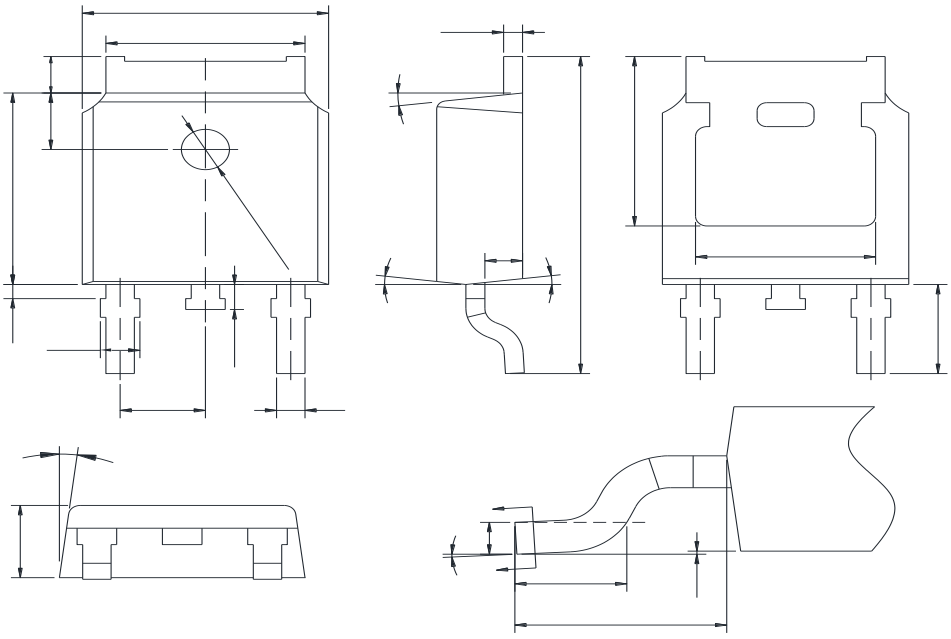


Figure 4. Diode reverse recovery test circuit & waveforms

Package Information



Symbol	mm		
	Min	Nom	Max
A	2.20	2.30	2.38
A1	0.00	-	0.10
A2	0.90	1.01	1.10
b	0.72	-	0.85
b1	0.71	0.76	0.81
b2	0.72	-	0.90
b3	5.13	5.33	5.46
c	0.47	-	0.60
c1	0.46	0.51	0.56
c2	0.47	-	0.60
D	6.00	6.10	6.20
D1	5.25	-	-
E	6.50	6.60	6.70
E1	4.70	-	-
e	2.186	2.286	2.386
H	9.80	10.10	10.40
L	1.40	1.50	1.70
L1	2.90REF		
L2	0.508BSC		
L3	0.90	-	1.25
L4	0.60	0.80	1.00
L5	0.15	-	0.75
L6	1.80REF		
	0°	-	7°
0	4°	6°	8°
1	4°	6°	8°

Version 1: TO252-J package outline dimension

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
OSG65R600DSF	TO252	yes	yes	yes

Sgd hmen l shmmf hudmhmsghm cnbtl dmsrg kkhmmm dudmsad df cdc r f t msddne bnmchshmmr n bg bsd hrshbr-V hsg dr odbssn mx dw l okdr n ghmsr f hudmgd dhm mx sxohb k u kt dr r s sdc gd dhm mc.n mx hmen l shmm df chmf sgd ookbb shmmnesgd cduhbd N hdms k Rdl hbnmctbsn gd dax chmbk h r mx mc kkv msbdr mc kh ahkshdr ne mx jhmc hmbkt chmf v hsgnt skh hs shmm v msbdr nemmm,hmehmf dl dmsnehmsdkkdbst ko nod sx hfigsr ne mx sghc o sx-

En et sgd hmen l shmmnmsdbgmmknf x cdkhud x sd l r mc bnmchshmmr mc o hbdr okd r d bnms bssgd N hdms kRdl hbnmctbsn r kdr do dr dms shudr v v v-n hdms k dl hbnl (-