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.

The GreenMOS® Generic series is optimized for extreme switching performance to minimize switching loss. It is tailored for high power density applications to meet the highest efficiency standards.

GreenMOS®

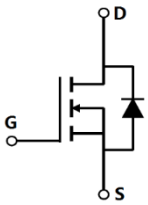
RoHS

- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Excellent stability and uniformity

- PC power
- LED lighting
- Telecom power
- Server power
- EV Charger
- Solar/UPS

Parameter	Value	Unit
$V_{DS,\ min}$ @ $T_{j(max)}$	650	V
$I_{D,\ pulse}$	21	A
$R_{DS(ON)\ ,\ max}$ @ V_{GS}=10V	670	mΩ
Q_g	7.8	nC

Product Name	Package	Marking
OSG60R670AF	TO251	OSG60R670A



Absolute Maximum Ratings at T_j=25°C unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	600	V
Gate-source voltage	V_{GS}	±30	V
Continuous drain current[1], T_C=25 °C	I_D	7	A
Continuous drain current[1], T_C=100 °C		4.4	
Pulsed drain current[2], T_C=25 °C	$I_{D,\ pulse}$	21	A
Continuous diode forward current[1], T_C=25 °C	I_S	7	A
Diode pulsed current[2], T_C=25 °C	$I_{S,\ pulse}$	21	A
Power dissipation[3] for TO251, TO252, TO220,TO262,TO263, T_C=25 °C	P_D	37	W
Single pulsed avalanche energy[5]	E_{AS}	130	mJ
MOSFET dv/dt ruggedness, V_{DS}=0…480 V	dv/dt	50	V/ns
Reverse diode dv/dt, V_{DS}=0…480 V, I_{SD}≤I_D	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	$R_{\theta JC}$	3.4	°C/W
Thermal resistance, junction-ambient[4]	$R_{\theta JA}$	62	°C/W

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		353		pF	V_{GS}=0 V, V_{DS}=50 V, f=1 MHz
Output capacitance	C_{oss}		46.9		pF	
Reverse transfer capacitance	C_{rss}		1.9		pF	
			16.9		ns	V_{GS}=10 V, V_{DS}=400 V, R_G=25 Ω, I_D=3 A

Electrical Characteristics Diagrams

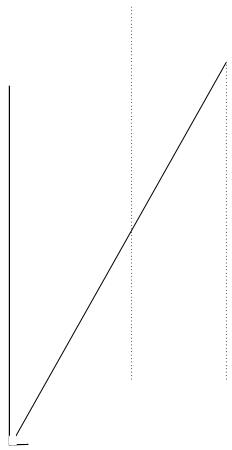


Figure 1. Typ. output characteristics

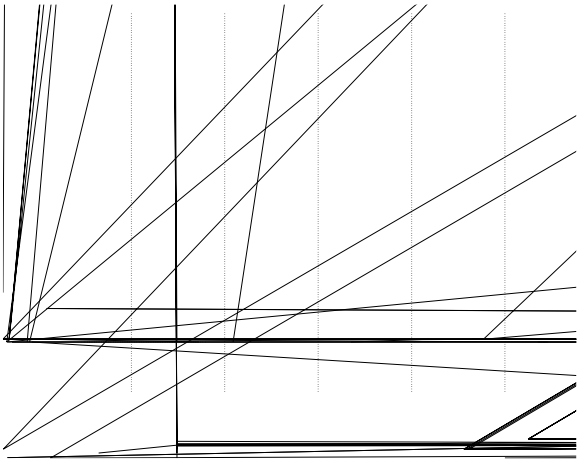


Figure 2. Typ. transfer characteristics

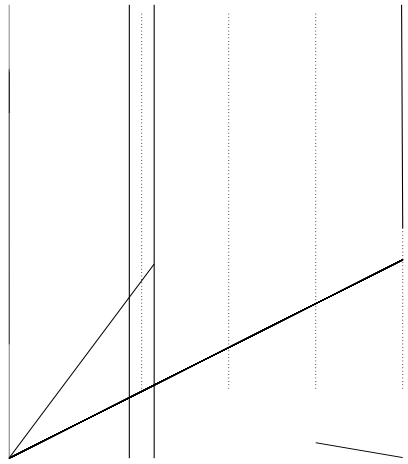


Figure 3. Typ. capacitances

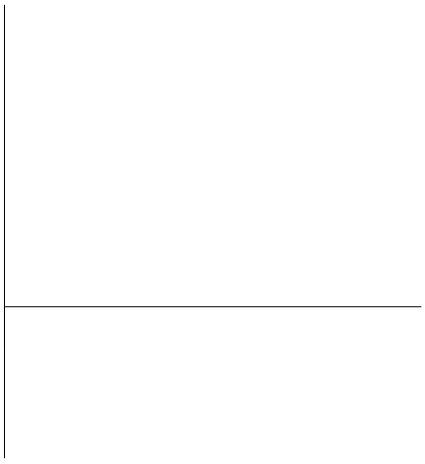


Figure 4. Typ. gate charge

Figure 5. Drain-source breakdown voltage

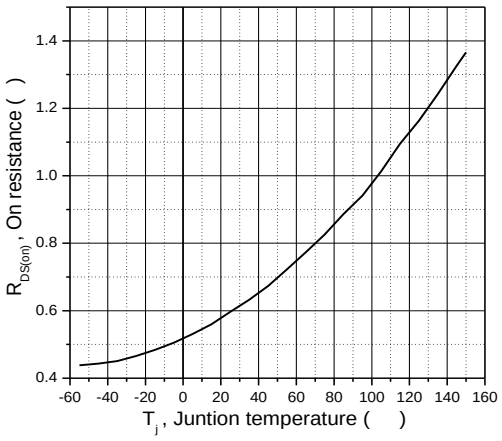


Figure 6. Drain-source on-state resistance

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

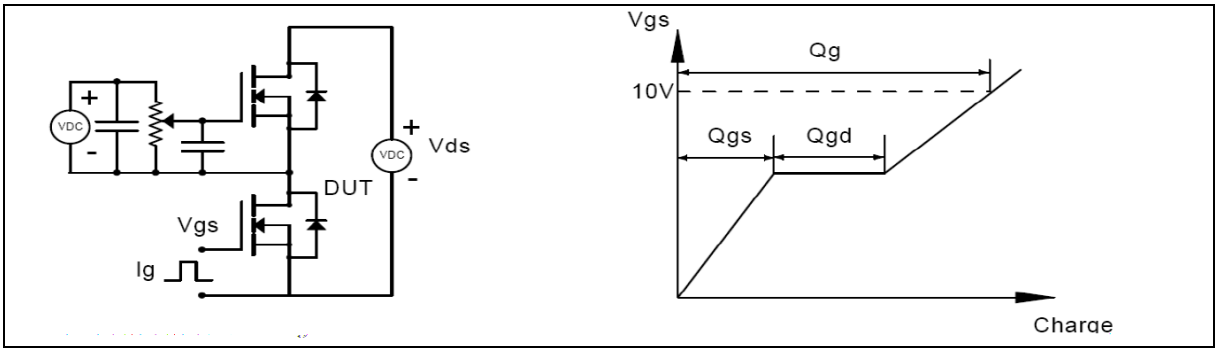


Figure 1. Gate charge test circuit & waveform

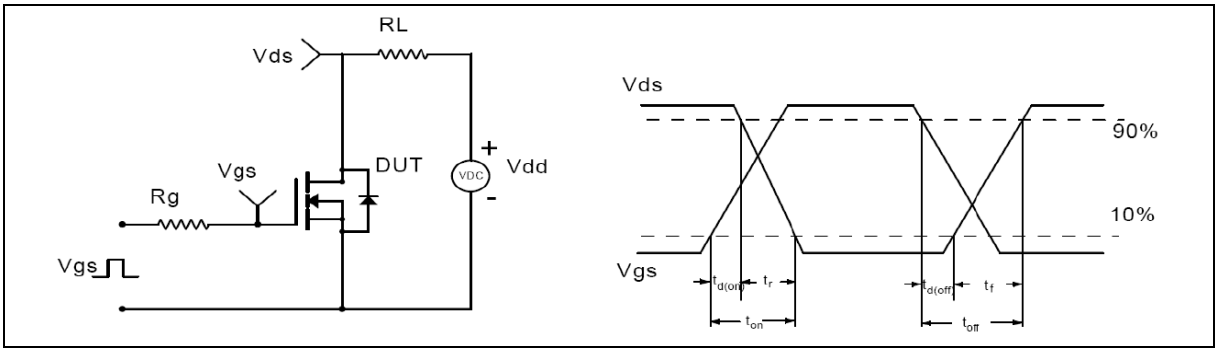


Figure 2. Switching time test circuit & waveforms

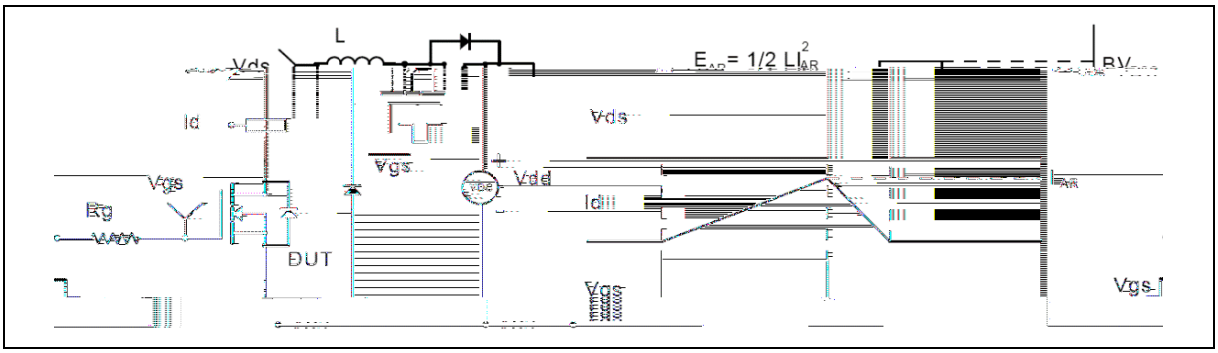


Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

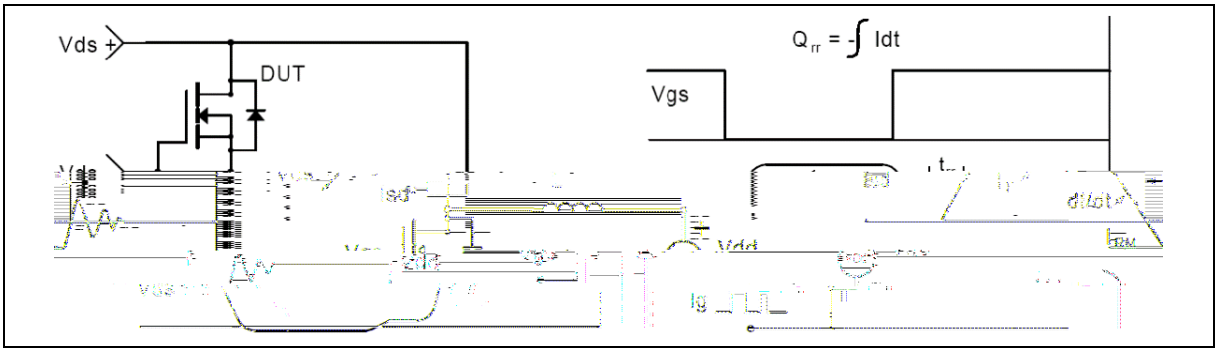


Figure 4. Diode reverse recovery test circuit & waveforms

Package Information

Symbol	mm		
	Min	Nom	Max
A	2.20	2.30	2.40
A2	0.97	1.07	1.17
b	0.68	0.78	0.90
b2	0.00	0.0497 75.	

Ordering Information

Package Type	Units/ Tube	Tubes/ Inner Box	Units/ Inner Box	Inner Boxes/ Carton Box	Units/ Carton Box
TO251-C	75	66	4950	6	29700

Product Information

Product	Package	Pb Free	RoHS	Halogen Free
OSG60R670AF	TO251	yes	yes	yes

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical value