

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.

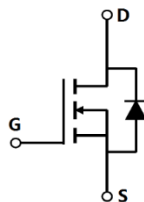
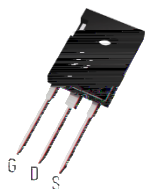
GreenMOS[®]



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Parameter	Value	Unit
$V_{DS, min} @ T_{j(max)}$	700	V
$I_{D, pulse}$	120	A
$R_{DS(ON), max} @ V_{GS}=10V$	99	
Q_g	43.6	nC

Product Name	Package	Marking
OSG65R099HF	TO247	OSG65R099H



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	40	A
Continuous drain current ¹⁾ , $T_C=100$ °C		25	
Pulsed drain current ²⁾ , $T_C=25$ °C	$I_{D, pulse}$	120	A
Continuous diode forward current ¹⁾ , $T_C=25$ °C	I_S	40	A
Diode pulsed current ²⁾ , $T_C=25$ °C	$I_{S, pulse}$	120	A
Power dissipation ³⁾ , $T_C=25$ °C	P_D	278	W
Single pulsed avalanche energy ⁵⁾	E_{AS}	1000	mJ
MOSFET dv/dt ruggedness, V_{DS}	dv/dt	50	V/ns
Reverse diode dv/dt, V_{DS}	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	0.45	°C/W
Thermal resistance, junction-ambient ⁴⁾	R	62	°C/W

Electrical Characteristics at $T_j=25$ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Drain-source breakdown voltage	BV_{DSS}	650			V	$V_{GS}=0$ V, $I_D=1$ mA
		700	770			$V_{GS}=0$ V, $I_D=1$ mA, $T_j=150$ °C
Gate threshold voltage	$V_{GS(th)}$	3.0		4.0	V	$V_{DS}=V_{GS}$, $I_D=1$ mA
Drain-source on-state resistance	$R_{DS(on)}$		0.08	0.099		$V_{GS}=10$ V, $I_D=20$ A
			0.205			$V_{GS}=10$ V, $I_D=20$ 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

OSG65R099HF 
Enhancement Mode N-Channel Power MOSFET

Electrical Characteristics Diagrams



Figure 1. Typ. output characteristics

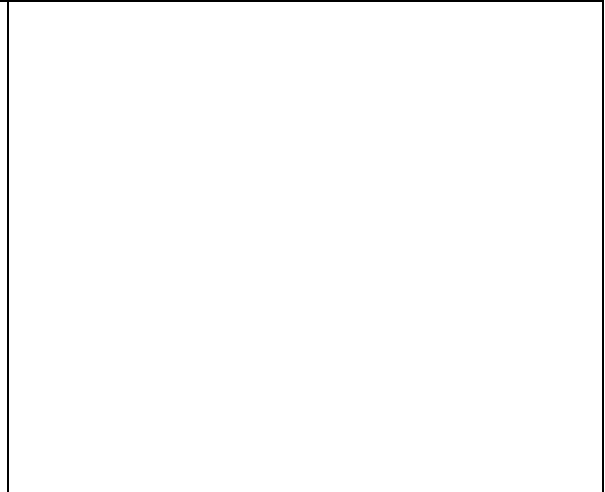


Figure 2. Typ. transfer characteristics

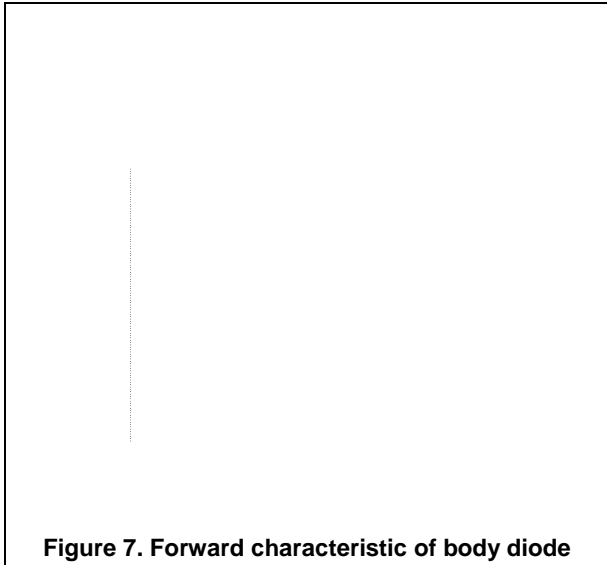


Figure 7. Forward characteristic of body diode

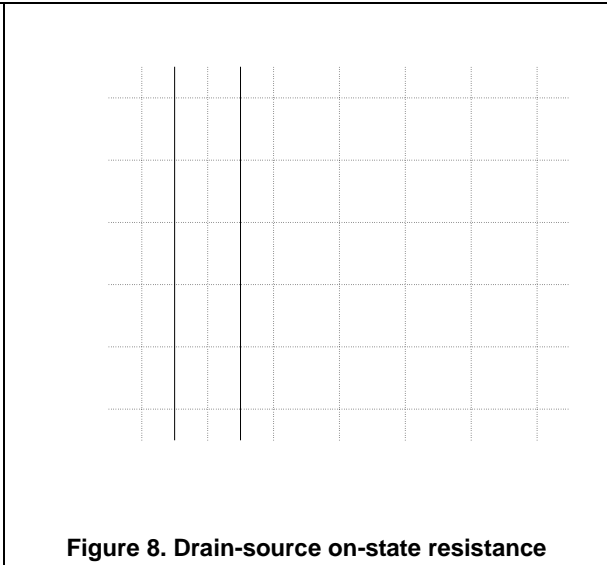


Figure 8. Drain-source on-state resistance

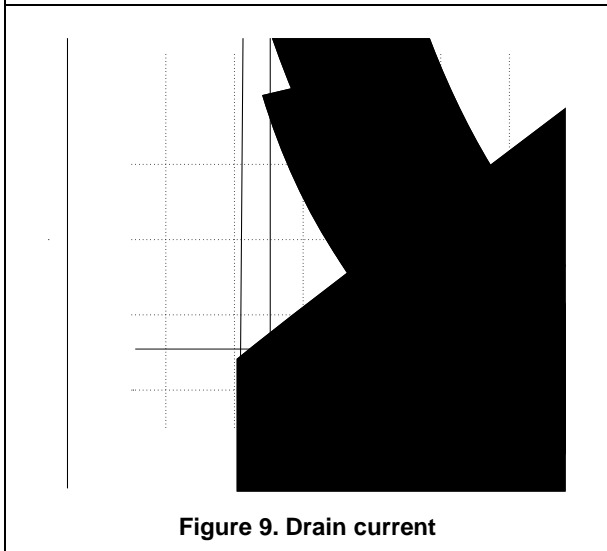


Figure 9. Drain current

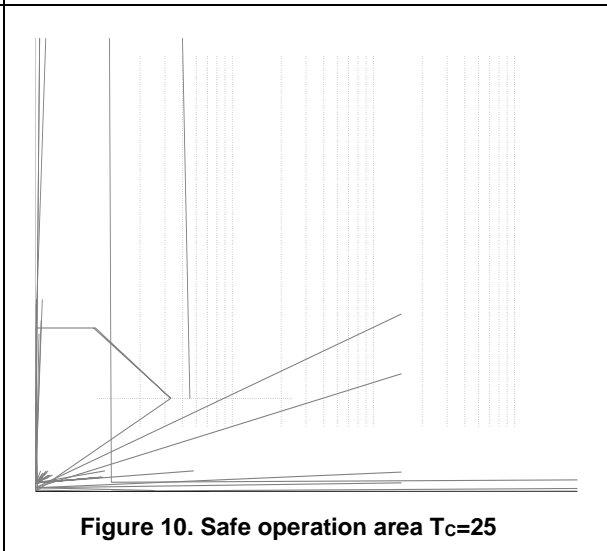


Figure 10. Safe operation area T_c=25

Test circuits and waveforms

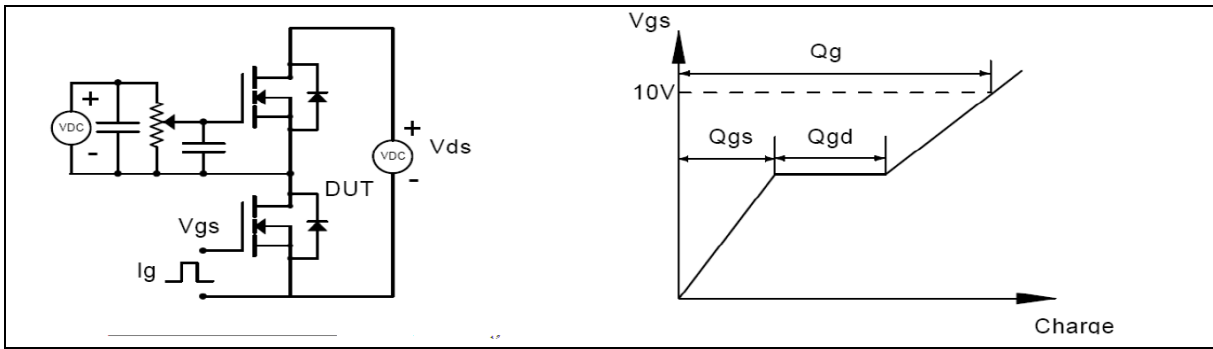


Figure 1. Gate charge test circuit & waveform

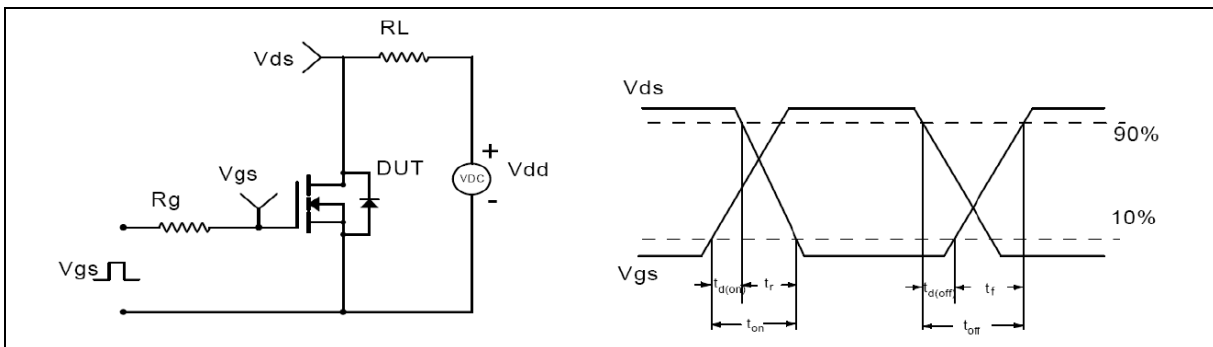


Figure 2. Switching time test circuit & waveforms

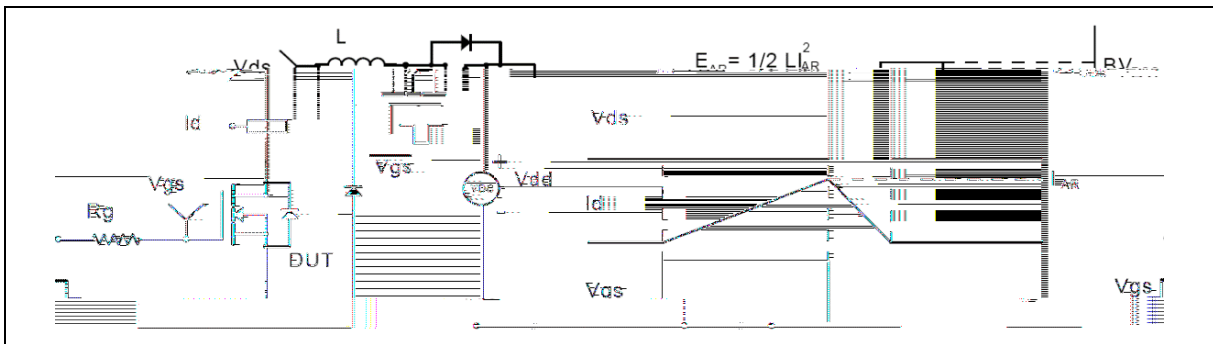


Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms



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		

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
OSG65R099HF	TO247	yes	yes	yes

