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 compliant

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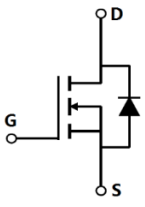
Parameter	Value	Unit
$V_{DS,\ min}$ @ $T_{j(max)}$	650	V
$I_{D,\ pulse}$	33	A
$R_{DS(ON),\ max}$ @ V_{GS}=10V	0.36	
Q_g	20	nC

Product Name	Package	Marking
OSG60R360FSF	TO220F	OSG60R360FS



Absolute Maximum Ratings at T_j=25 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	11	A
Continuous drain current[1], T_C=100 °C		7	
Pulsed drain current[2], T_C=25 °C			

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		846.8		pF	V_{GS}=0 V, V_{DS}=50 V, 00 KHz
Output capacitance	C_{oss}		71.1		pF	
Reverse transfer capacitance	C_{rss}		3.9		pF	
Turn-on delay time	$t_{d(on)}$		26.4		ns	V_{GS}=10 V, V_{DS}=400 V, R_G I_D=11 A
Rise time	t_r		18		ns	
Turn-off delay time	$t_{d(off)}$		60.7		ns	
Fall time	t_f		25.1		ns	

Gate Charge Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Total gate charge	Q_g		20		nC	V_{GS}=11 V, V_{DS}=400 V, I_D=10 A
Gate-source charge	Q_{gs}		5.9		nC	
Gate-drain charge	Q_{gd}		7.1		nC	
Gate plateau voltage	$V_{plateau}$		5.5		V	

Body Diode Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Diode forward voltage	V_{SD}			1.4	V	I_S=11 A, V_{GS}=0 V
Reverse recovery time	t_{rr}		310.9		ns	V_R=400 V, I_S=11 A, di/dt=10
Reverse recovery charge	Q_{rr}		3.8		C	
Peak reverse recovery current	I_{rrm}		22.1		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.

Figure 7. Threshold voltage

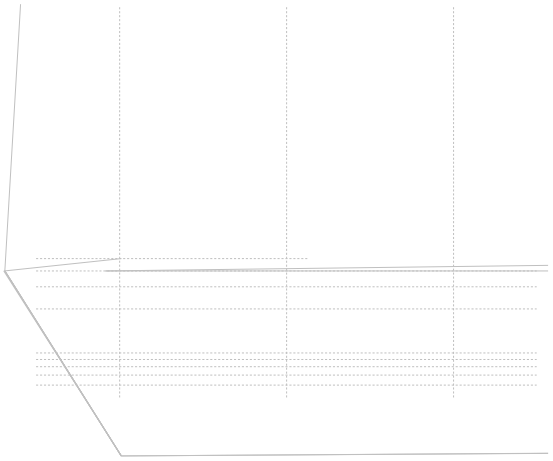


Figure 8. Forward characteristic of body diode

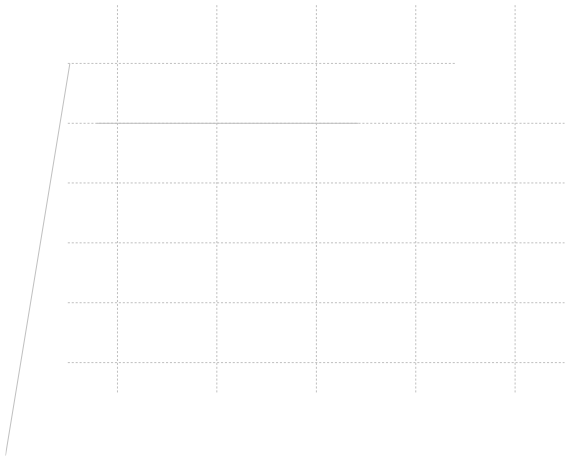


Figure 9. Drain-source on-state resistance

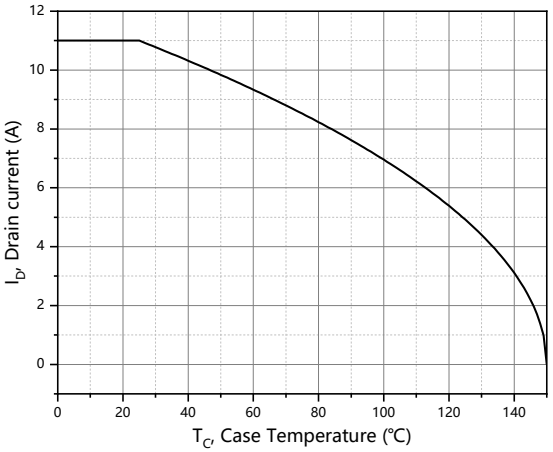


Figure 10. Drain current

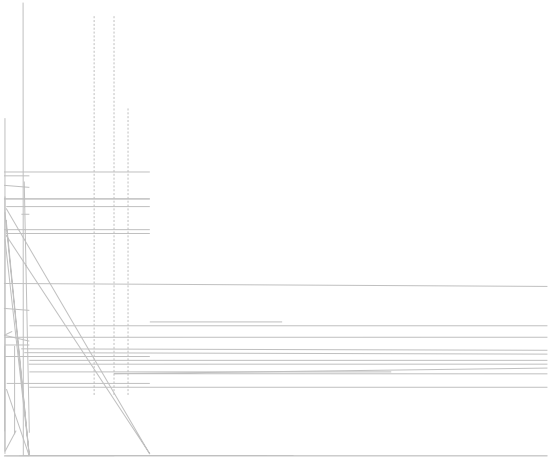


Figure 11. Safe operation area for T_C=25 °C

Test circuits and waveforms

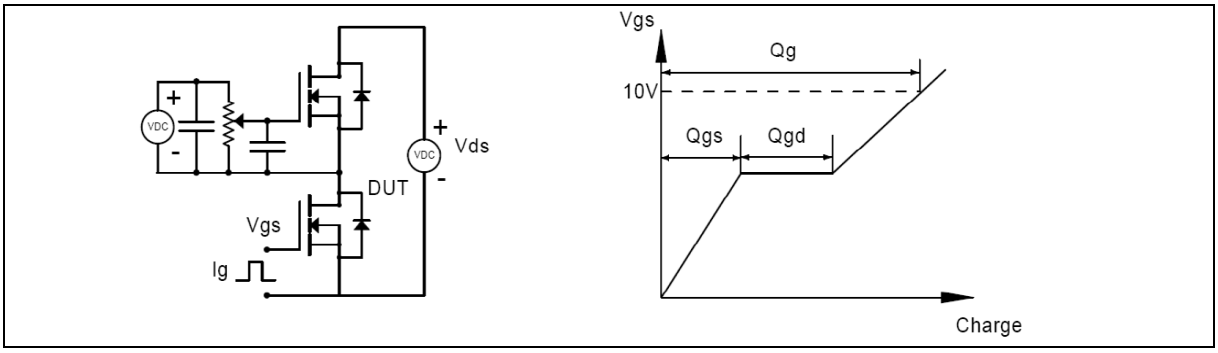


Figure 1. Gate charge test circuit & waveform

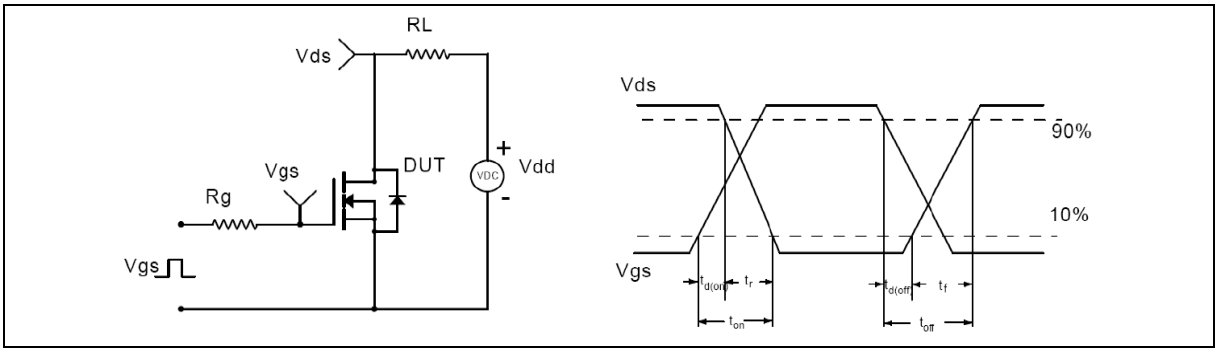


Figure 2. Switching time test circuit & waveforms

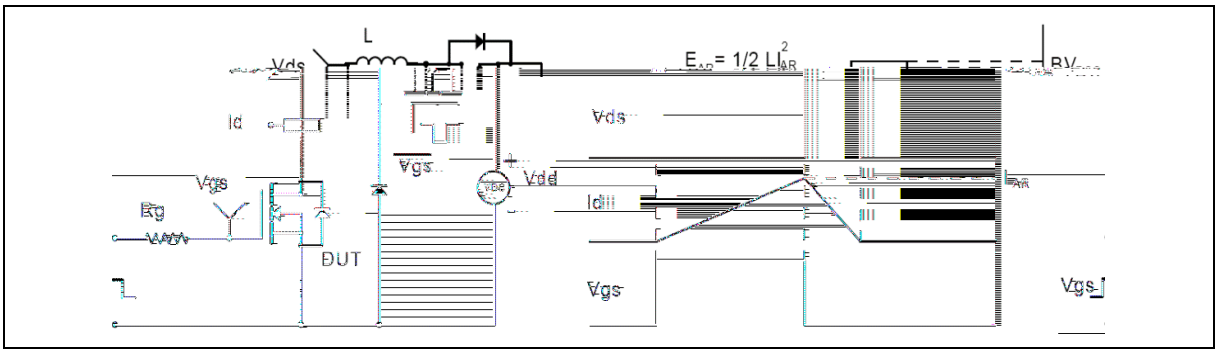


Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

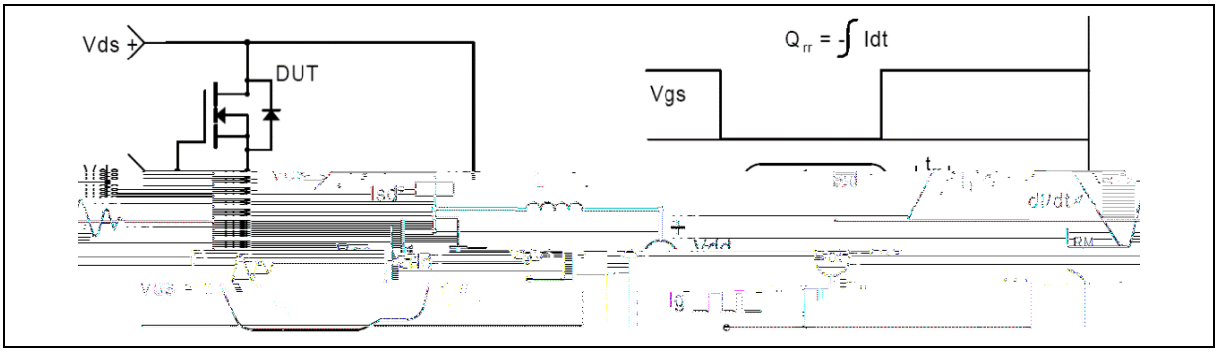


Figure 4. Diode reverse recovery test circuit & waveforms

Ordering Information

Package Type	Units/ Tube	Tubes / Inner Box	Units/ Inner Box	Inner Boxes/ Carton Box	Units/ Carton Box
TO220F-J	50	20	1000	5	5000

Product Information

Product	Package	Pb Free	RoHS	Halogen Free
OSG60R360FSF	TO220F	yes	yes	yes