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.

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GreenMOS®

RoHS

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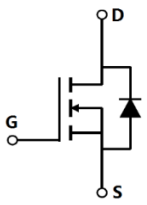
Parameter	Value	Unit
$V_{DS,\ min}$ @ $T_{j(max)}$	600	V
$I_{D,\ pulse}$	69	A
$R_{DS(ON),\ max}$ @ V_{GS}=10V	160	
Q_g	21.3	nC

Product Name	Package	Marking
OSG55R160PZF	TO220	OSG55R160PZ



Absolute Maximum Ratings at T_j=25 unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	550	V
Gate-source voltage	V_{GS}	±30	V
Continuous drain current[1], T_C=25 °C	I_D	23	A
Continuous drain current[1], T_C=100 °C		14.5	
Pulsed drain current[2], T_C=25 °C	$I_{D, pulse}$	69	A
Continuous diode forward current[1], T_C=25 °C	I_S	23	A
Diode pulsed current[2], T_C=25 °C	$I_{S, pulse}$	69	A
Power dissipation[3], T_C=25 °C	P_D	151	W
Single pulsed avalanche energy[5]	E_{AS}	250	mJ
MOSFET dv/dt ruggedness, V_{DS}	dv/dt	50	V/ns
Reverse diode dv/dt, V_{DS} SD D	dv/dt	50	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	0.82	°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

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		1511		pF	V_{GS}=0 V, V_{DS}=50 V, Hz
Output capacitance	C_{oss}		145.8		pF	
Reverse transfer capacitance	C_{rss}		2.9		pF	
Turn-on delay time	$t_{d(on)}$		28		ns	V_{GS}=10 V, V_{DS}=400 V, R_G I_D=10 A
Rise time	t_r		8.8		ns	
Turn-off delay time	$t_{d(off)}$		37.9		ns	
Fall time	t_f		4.3		ns	

Gate Charge Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Total gate charge	Q_g		21.3		nC	V_{GS}=10 V, V_{DS}=400 V, I_D=10 A

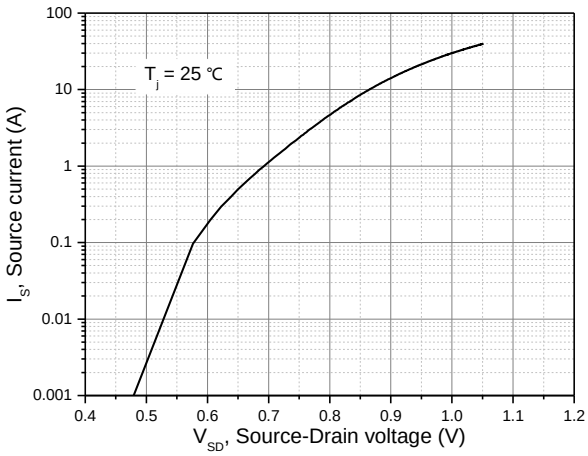


Figure 7. Forward characteristic of body diode

Figure 8. Drain-source on-state resistance

Figure 9. Drain current

Figure 10. Safe operation area for T_C=25 °C

Test circuits and waveforms

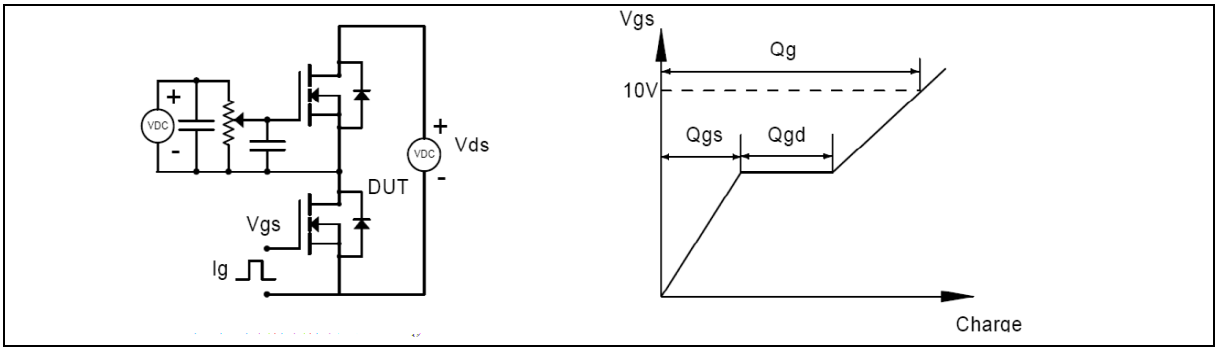


Figure 1. Gate charge test circuit & waveform

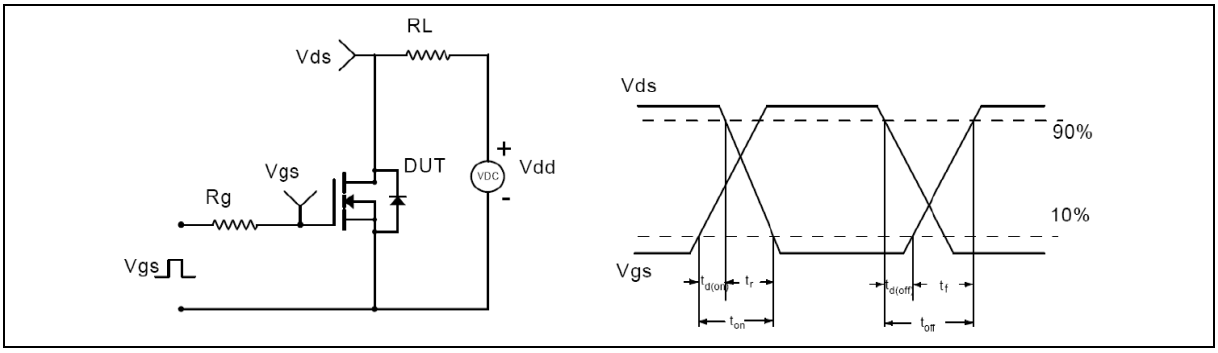


Figure 2. Switching time test circuit & waveforms

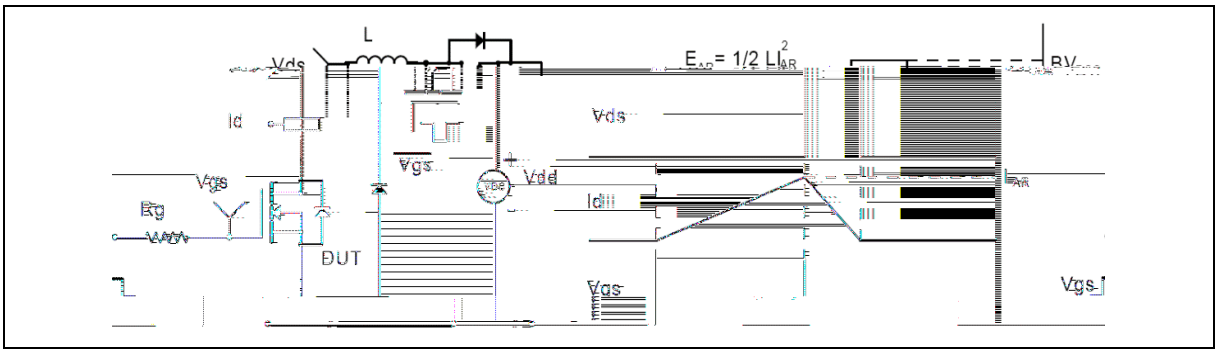


Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

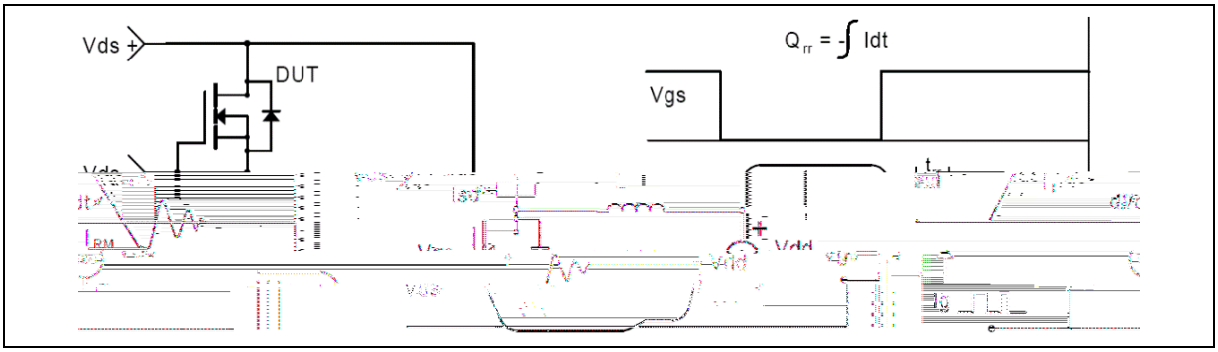


Figure 4. Diode reverse recovery test circuit & waveforms

Ordering Information

Package Type	Units/ Reel	Reels/ Inner Box	Units/ Inner Box	Inner Box/ Carton Box	Units/ Carton Box
TO220-C	50	20	1000	6	6000

Product Information

Product	Package	Pb Free	RoHS	Halogen Free
OSG55R160PZF	TO220	yes	yes	yes