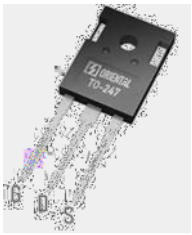
The GreenMOS® high voltage MOSFET utilizes charge balance technology to achieve outstanding low on-resistance and lower gate charge. It is engineered to minimize conduction loss, provide superior switching performance and robust avalanche capability.
The GreenMOS® Z series is integrated with fast recovery diode (FRD) to minimize reverse recovery time. It is suitable for resonant switching topologies to reach higher efficiency, higher reliability and smaller form factor.

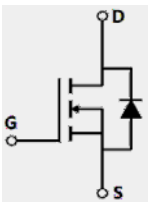
- Low $R_{DS(ON)}$ & FOM
- Extremely low switching loss
- Excellent stability and uniformity
- Ultra-fast and robust body diode

- PC power
- Telecom power
- Server power
- EV Charger
- Motor driver

$V_{DS,\ min}$ @ $T_{j(max)}$	650	V
$I_{D,\ pulse}$	159	A
$R_{DS(ON),\ max}$ @ V_{GS}=10V	69	mΩ
Q_g	60.2	nC

OSG60R069HZF	TO247	OSG60R069HZ





at T_j=25°C unless otherwise noted

Drain-source voltage	V_{DS}	600	V
Gate-source voltage	V_{GS}	±30	V
Continuous drain current[1], T_C=25 °C	I_D	53	A
Continuous drain current[1], T_C=100 °C		33.3	
Pulsed drain current[2], T_C=25 °C	$I_{D, pulse}$	159	A
Continuous diode forward current[1], T_C=25 °C	I_S	53	A
Diode pulsed current[2], T_C=25 °C	$I_{S, pulse}$	159	A
Power dissipation[3], T_C=25 °C	P_D	390	W
Single pulsed avalanche energy[5]	E_{AS}	1200	mJ
MOSFET dv/dt ruggedness, V_{DS}=0…480 V	dv/dt	100	V/ns
Reverse diode dv/dt, V_{DS}=0…480 V, I_{SD}≤I_D	dv/dt	50	V/ns
Operation and storage temperature	T_{stg}, T_j	-55 to 150	°C

Thermal resistance, junction-case	$R_{θJC}$	0.32	°C/W
Thermal resistance, junction-ambient[4]	$R_{θJA}$	62	°C/W

at T_j=25°C unless otherwise specified

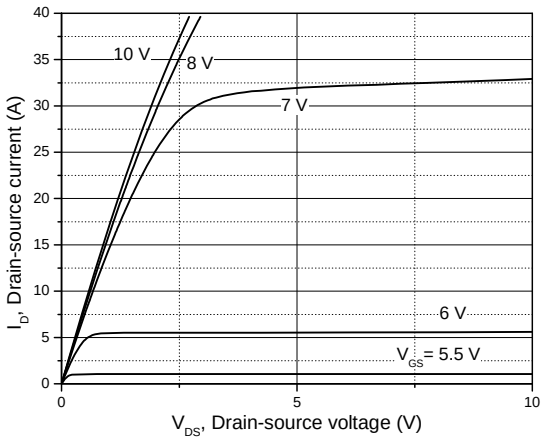
Drain-source breakdown voltage	BV_{DSS}	600			V	V_{GS}=0 V, I_D=1 mA
		650				V_{GS}=0 V, I_D=1 mA, T_j=150 °C
Gate threshold voltage	$V_{GS(th)}$	3.5		4.5	V	V_{DS}=V_{GS}, I_D=1 mA
Drain-source on-state resistance	$R_{DS(ON)}$		0.06	0.069	Ω	V_{GS}=10 V, I_D=26.5 A
			0.15			V_{GS}=10 V, I_D=26.5 A, 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}			10	μA	V_{DS}=600 V, V_{GS}=0 V

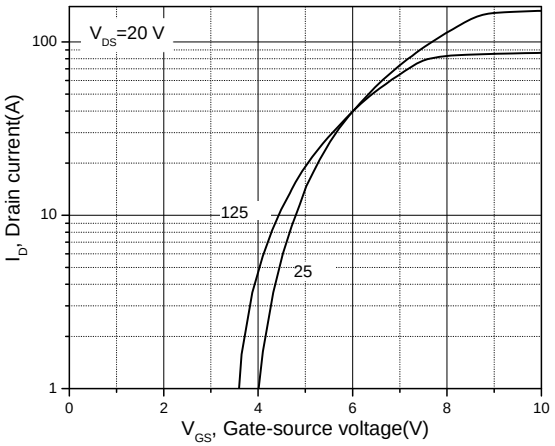
Input capacitance	C_{iss}		4652.2		pF	V_{GS}=0 V, V_{DS}=50 V, f=100 KHz
Output capacitance	C_{oss}		283.6		pF	
Reverse transfer capacitance	C_{rss}		8.6		pF	
Turn-on delay time	td(on)		41		ns	V_{GS}=10 V, V_{DS}=400 V, R_G=25 Ω, I_D=30 A
Rise time	t_r		114.4		ns	
Turn-off delay time	$t_{d(off)}$		41.9		ns	
Fall time	t_f		2.8		ns	

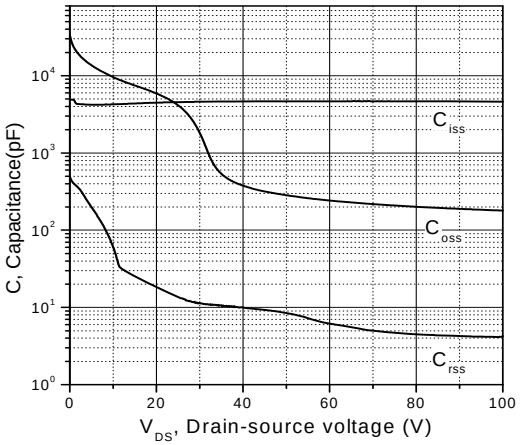
Total gate charge	Q_g		60.2		nC	V_{GS}=10 V, V_{DS}=400 V, I_D=30 A
Gate-source charge	Q_{gs}		24.5		nC	
Gate-drain charge	Q_{gd}		18.7		nC	
Gate plateau voltage	$V_{plateau}$		6.0		V	

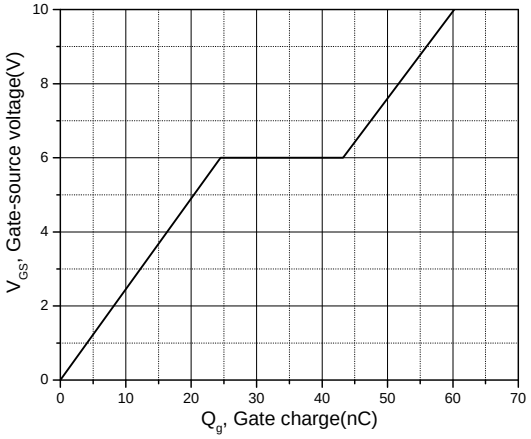
Diode forward voltage	V_{SD}			1.4	V	I_S=53 A, V_{GS}=0 V
Reverse recovery time	t_{rr}		174		ns	I_S=30 A, di/dt=100 A/μs
Reverse recovery charge	Q_{rr}		1.05		uC	
Peak reverse recovery current	I_{rrm}		11.32		A	

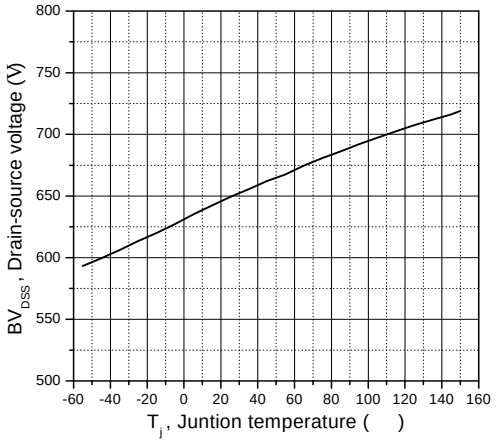
1) Calculated continuous current based on maximum allowable junction temperature.
2) Repetitive rating; pulse width limited by max. junction temperature.
3) Pd is based on max. junction temperature, using junction-case thermal resistance.
4) The value of $R_{\theta JA}$ is measured with the device mounted 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.

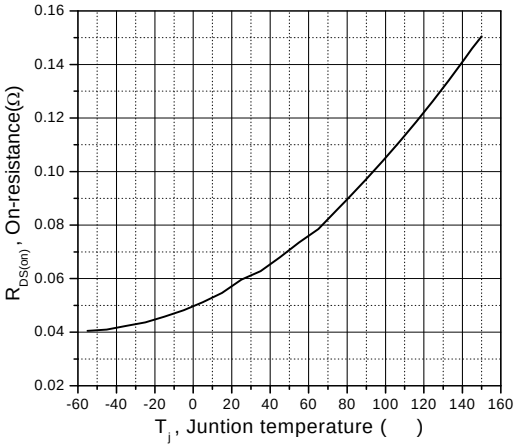


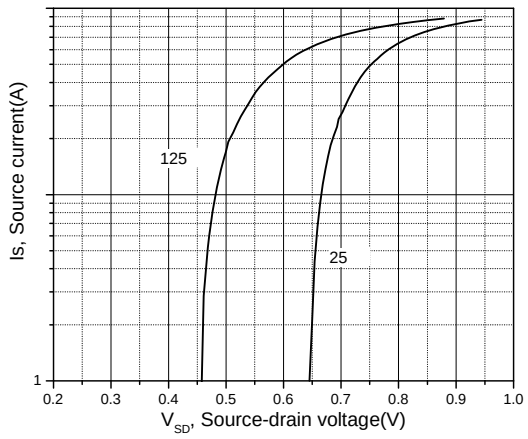


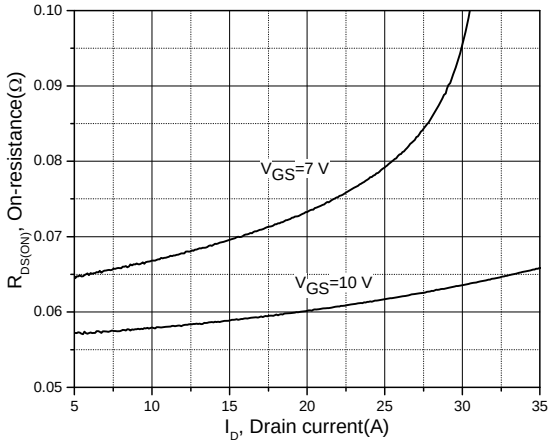


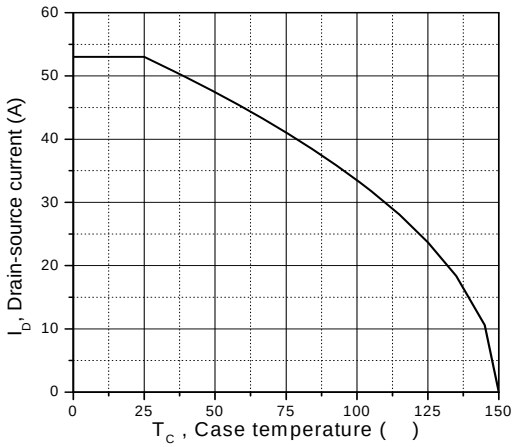


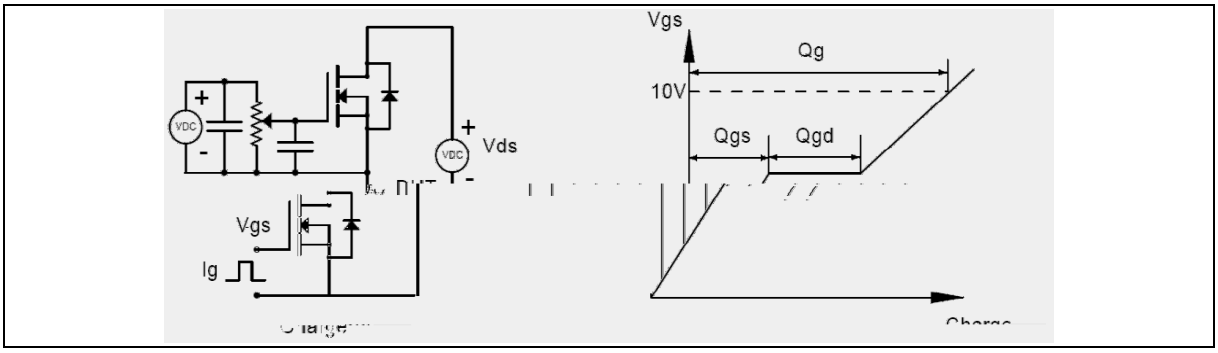


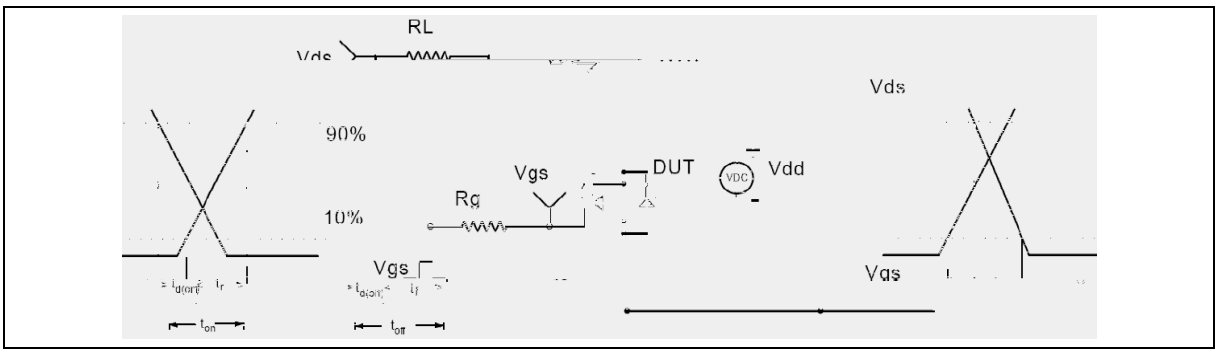


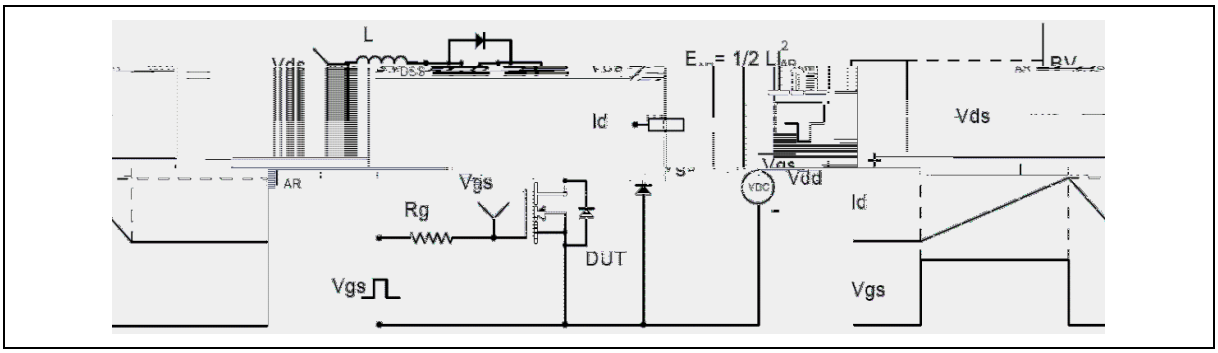


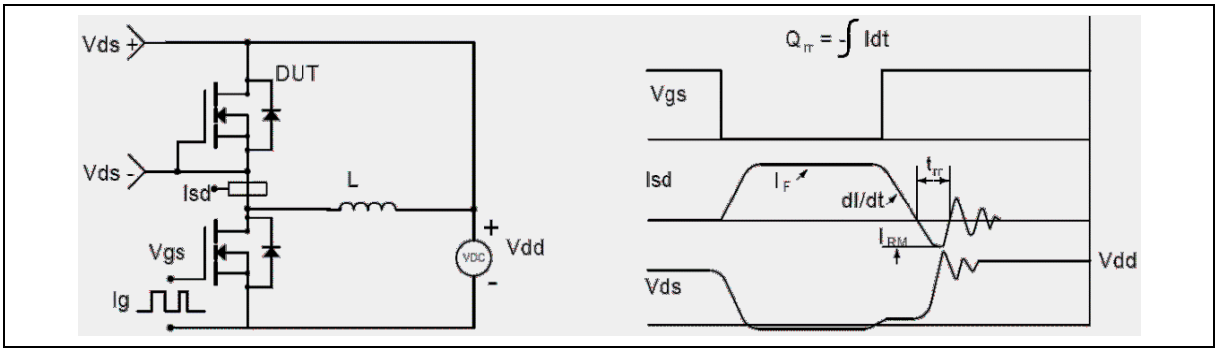












Symbol	mm		
	Min	Nom	Max
A	4.80	5.00	5.20
A1	2.21	2.41	2.59
A2	1.85	2.00	2.15
b	1.11	1.21	1.36
b2	1.91	2.01	2.21
b4	2.91	3.01	3.21
c	0.51	0.61	0.75
D	20.80	21.00	21.30
D1	16.25	16.55	16.85
E	15.50	15.80	16.10
E1	13.00	13.30	13.60
E2	4.80	5.00	5.20
E3	2.30	2.50	2.70
e	5.44 BSC		
L	19.82	19.92	20.22
L1	-	-	4.30

TO247-C	30	11	330	6	1980

OSG60R069HZF	TO247	yes	yes	yes

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