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

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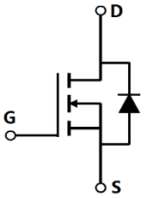
Parameter	Value	Unit
$V_{DS,\ min}$ @ $T_{j(max)}$	850	V
$I_{D,\ pulse}$	51	A
$R_{DS(ON)\ ,\ max}$ @ V_{GS}=10V	250	
Q_g	41.2	nC

Product Name	Package	Marking
OSG80R250FF	TO220F	OSG80R250F



Absolute Maximum Ratings at T_j=25 unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	800	V
Gate-source voltage	V_{GS}	±30	V
Continuous drain current[1], T_C=25 °C	I_D	17	A
Continuous drain current[1], T_C=100 °C		10.8	
Pulsed drain current[2], T_C=25 °C	$I_{D, pulse}$	51	A
Continuous diode forward current[1], T_C=25 °C	I_S	17	A
Diode pulsed current[2], T_C=25 °C	$I_{S, pulse}$	51	A
Power dissipation[3], T_C=25 °C	P_D	34	W
Single pulsed avalanche energy[5]	E_{AS}	640	mJ
MOSFET dv/dt ruggedness, V_{DS}			

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}				pF	V_{GS}=0 V, V_{DS}=50 V, 00 kHz
Output capacitance	C_{oss}		136.0		pF	
Reverse transfer capacitance	C_{rss}		3.0		pF	
Turn-on delay time	$t_{d(on)}$		32.6		ns	V_{GS}=10 V, V_{DS}=400 V, R_G I_D=8 A
Rise time	t_r		15.9		ns	
Turn-off delay time	$t_{d(off)}$		70.2		ns	
Fall time	t_f		6.9		ns	

Gate Charge Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Total gate charge	Q_g		41.2		nC	V_{GS}=10 V, V_{DS}=400 V, I_D=8 A
Gate-source charge	Q_{gs}		10.8		nC	
Gate-drain charge	Q_{gd}		12.4		nC	
Gate plateau voltage	$V_{plateau}$		5.4		V	

Body Diode Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition

Electrical Characteristics Diagrams

Figure 1. Typ. output characteristics

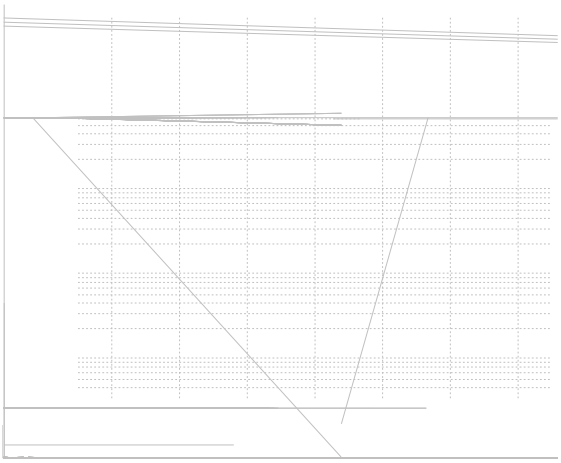


Figure 2. Typ. transfer characteristics

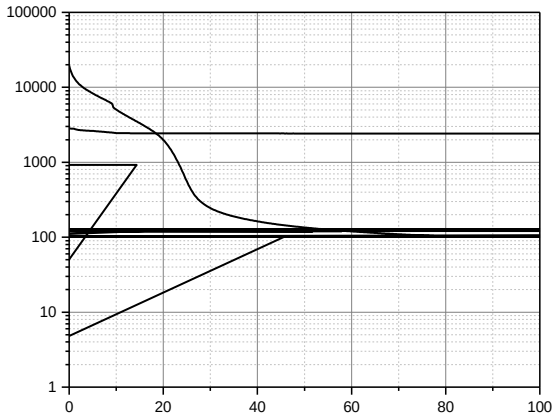


Figure 3. Typ. capacitances

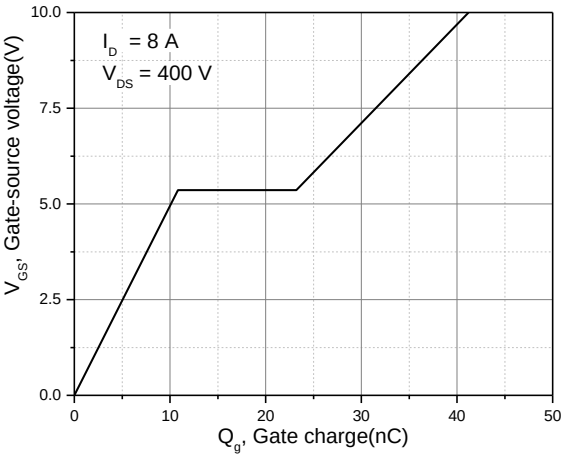


Figure 4. Typ. gate charge

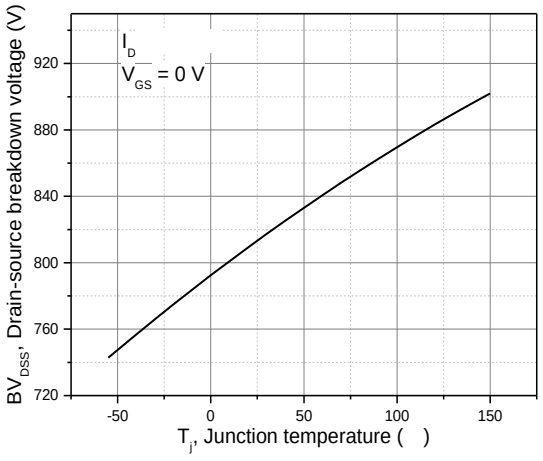


Figure 5. Drain-source breakdown voltage

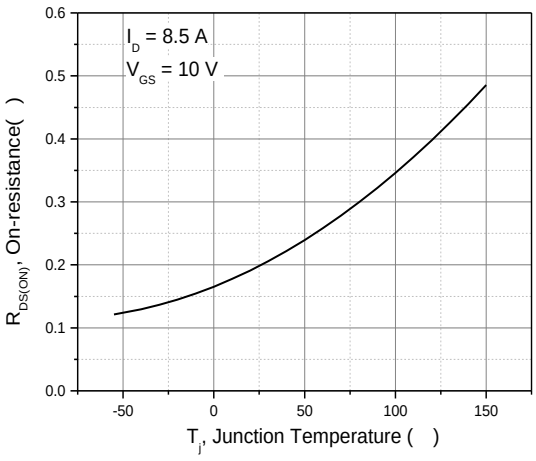


Figure 6. Drain-source on-state resistance

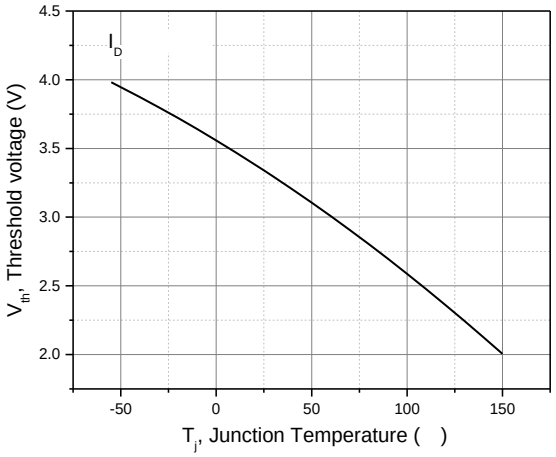


Figure 7. Threshold voltage

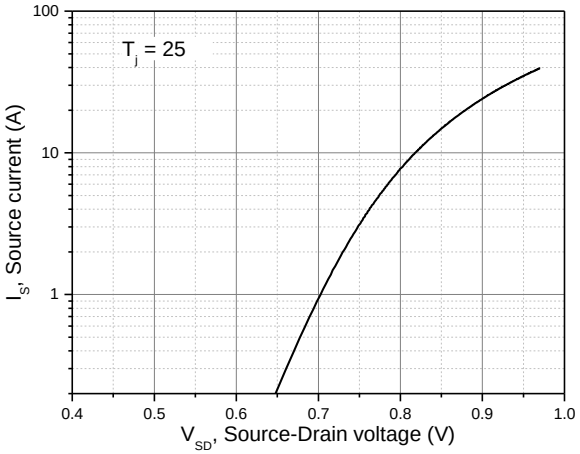


Figure 8. Forward characteristic of body diode

Figure 9. Drain-source on-state resistance

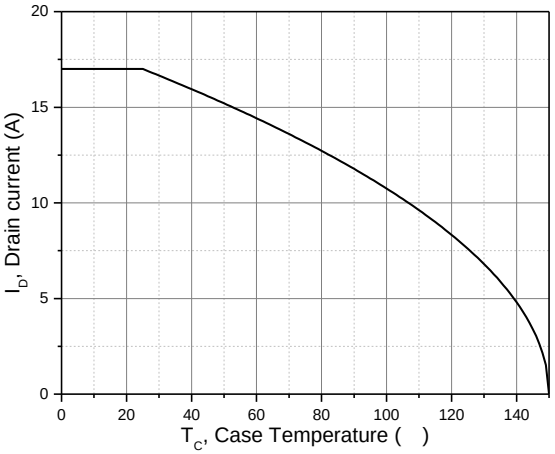


Figure 10. Drain current

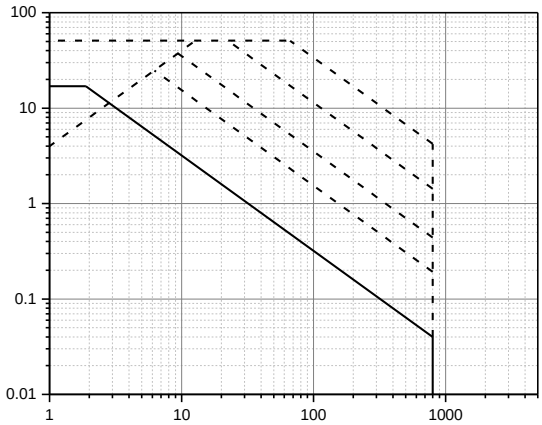
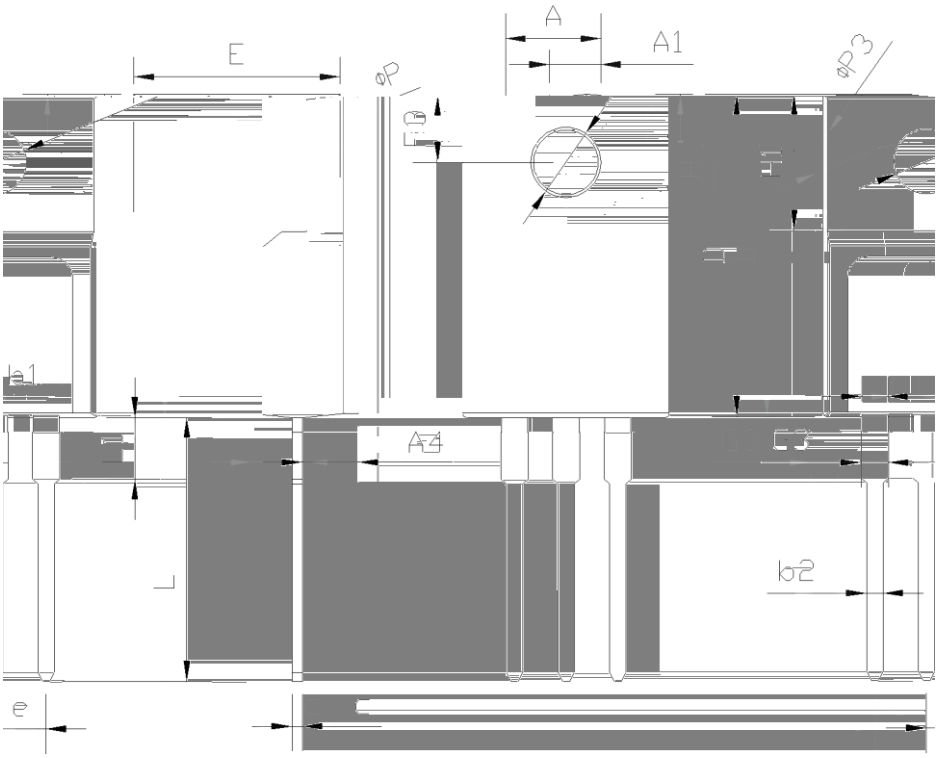


Figure 11. Safe operation area T_C=25 °C

Package Information



Symbol	mm		
	Min	Nom	Max
E	9.96	10.16	10.36
A	4.50	4.70	4.90
A1	2.34	2.54	2.74
A4	2.56	2.76	2.96
c	0.40	0.50	0.65
D	15.57	15.87	16.17
H1	6.70REF		
e	2.54BSC		
L	12.68	12.98	13.28
L1	2.88	3.03	3.18
	3.03	3.18	3.38
	3.15	3.45	3.65
F3	3.15	3.30	3.45
G3	1.25	1.35	1.55
b1	1.18	1.28	1.43
b2	0.70	0.80	0.95

Version 1: TO220F-C package outline dimension

Ordering Information

Package Type	Units/ Tube	Tubes/ Inner Box	Units/ Inner Box	Inner Boxes/ Carton Box	Units/ Carton Box
TO220F-C	50	20	1000	6	6000

Product Information

Product	Package	Pb Free	RoHS	Halogen Free
OSG80R250FF	TO220F	yes	yes	yes

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