General Description

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® S series is optimized for its switching characteristics to achieve aggressive EMI standards. It is easy to use for smaller power supply systems to meet the both efficiency and EMI standards.

Features

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

Applications

- LED lighting
- Charger
- Adapter
- Telecom power
- Server power
- Solar/UPS

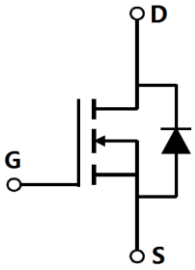
Key Performance Parameters

Parameter	Value	Unit
$V_{DS,\ min}$ @ $T_{j(max)}$	650	V
$I_{D,\ pulse}$	60	A
$R_{DS(ON),\ max}$ @ V_{GS}=10V	200	
Q_g	72.9	nC

Marking Information

Product Name	Package	Marking
OSG60R200FSZF	TO220F	OSG60R200FSZ

Package & Pin Information



Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		1920		pF	V_{GS}=0 V, V_{DS}=50 V, - 100 kHz
Output capacitance	C_{oss}		98.6		pF	
Reverse transfer capacitance	C_{rss}		2.3		pF	
Turn-on delay time	$t_{d(on)}$		41.9		ns	V_{GS}=10 V, V_{DS}=400 V, R_G=2 I_D=10 A
Rise time	t_r		68.2		ns	
Turn-off delay time	$t_{d(off)}$		77.7		ns	
Fall time	t_f		33.9		ns	

Gate Charge Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Total gate charge	Q_g		72.9		nC	V_{GS}=10 V, V_{DS}=400 V, I_D=10 A
Gate-source charge	Q_{gs}		17.2		nC	
Gate-drain charge	Q_{gd}		14		nC	
Gate plateau voltage	$V_{plateau}$		6.5		V	

Body Diode Characteristics (V_{GS}

Parameter	[redacted]	dition
Diode forward voltage	V_{SD}	

Electrical Characteristics Diagrams

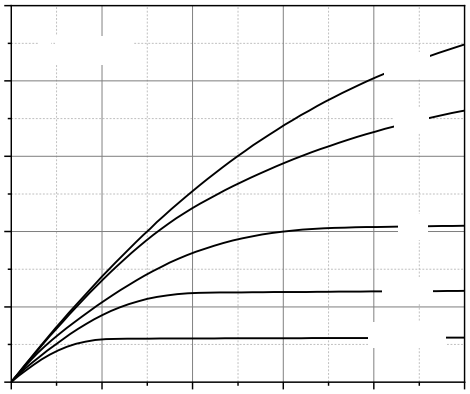


Figure 1. Typ. output characteristics

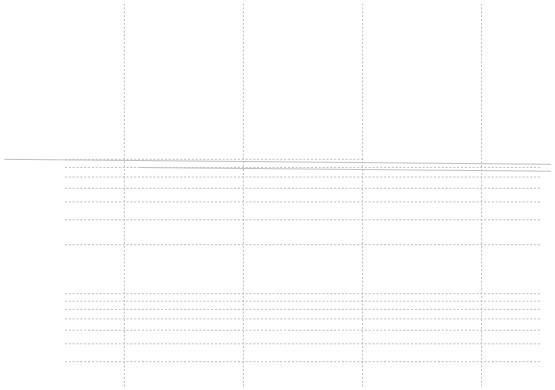


Figure 2. Typ. transfer characteristics

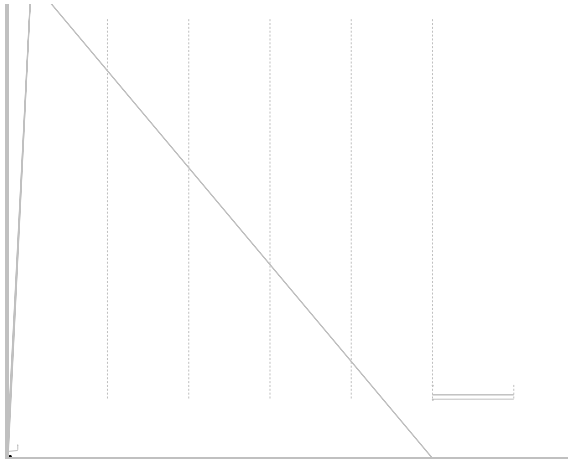


Figure 3. Typ. capacitances

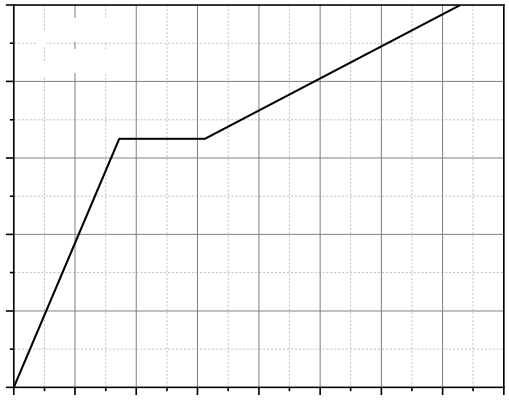


Figure 4. Typ. gate charge

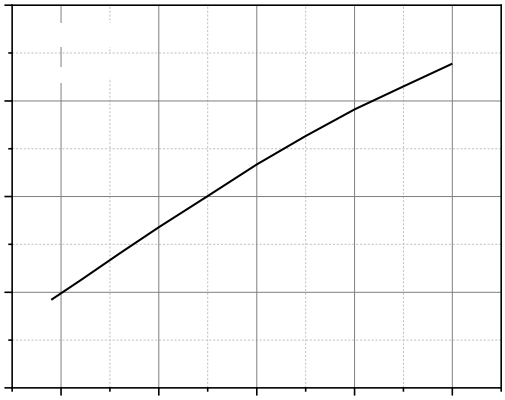


Figure 5. Drain-source breakdown voltage

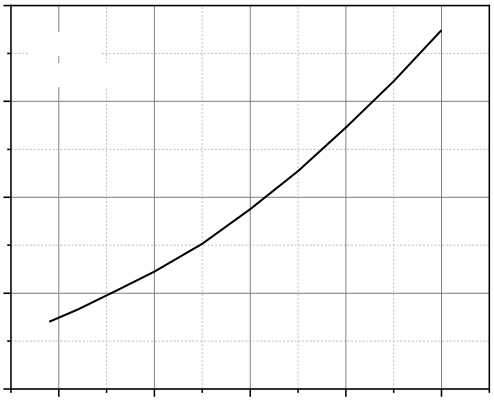


Figure 6. Drain-source on-state resistance

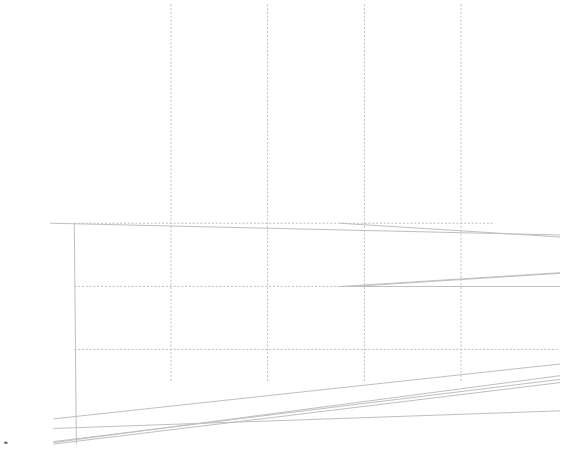


Figure 7. Threshold voltage

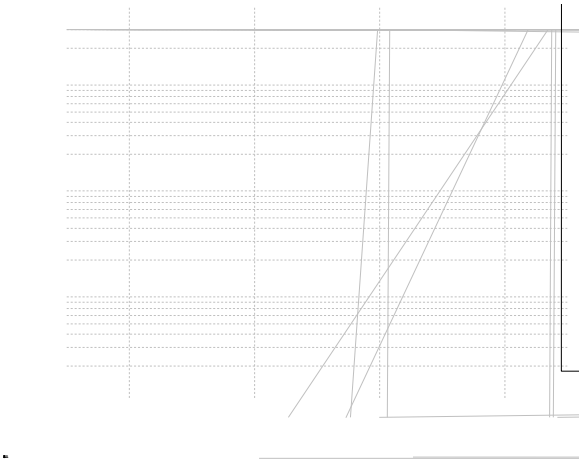


Figure 8. Forward characteristic of body diode

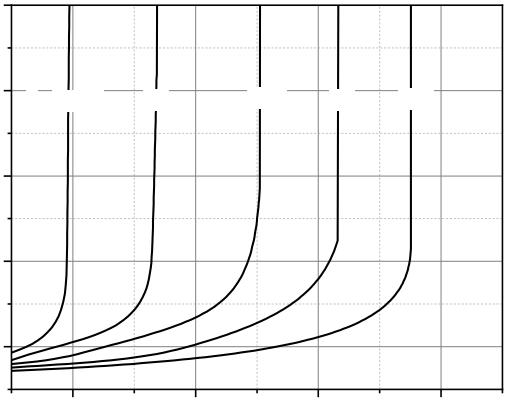


Figure 9. Drain-source on-state resistance

Figure 10. Drain current

Figure 11. Safe operation area T_C=25 °C

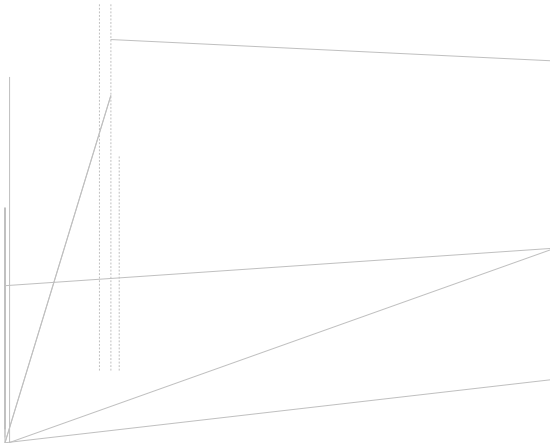
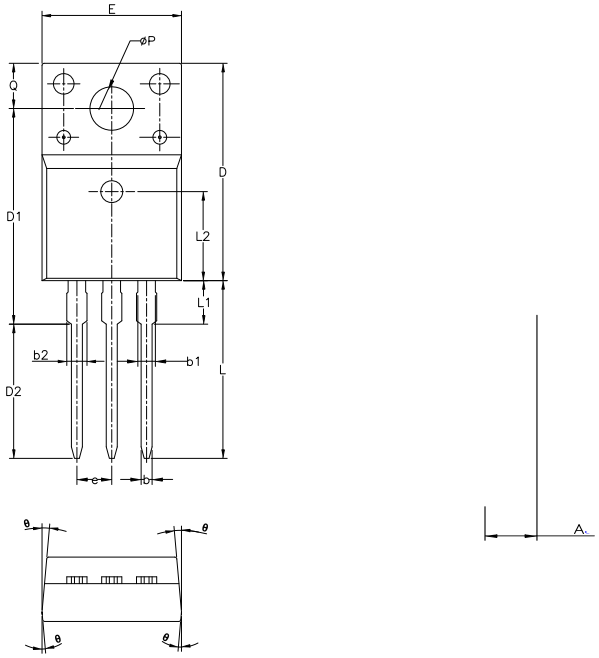


Figure 12. Max. transient thermal impedance

Package Information



Symbol	mm		
	Min	Nom	Max
A	4.50	4.70	4.83
A1	2.34	2.54	2.74
A2		0.70 REF	
A3	2.56	2.76	2.93
b	0.70	-	0.90
b1	1.18	-	1.38
b2	-	-	1.47
c	0.45	0.50	0.60
D	15.67	15.87	16.07
D1	15.55	15.75	15.95
D2	9.60	9.80	10.00
E	9.96	10.16	10.36
e		2.54 BSC	
H1	6.48	6.68	6.88
L	12.68	12.98	13.28
L1	-	-	3.50
L2		6.50 REF	
	3.08	3.18	3.28
Q	3.20	-	3.40
	1º	3º	5º

Version 1: TO220F-J package outline dimension

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
OSG60R200FSZF	TO220F	yes	yes	yes

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