

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.

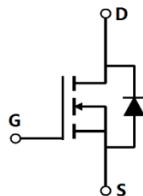
GreenMOS[®]



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Parameter	Value	Unit
$V_{DS, min} @ T_{j(max)}$	750	V
$I_D, pulse$	33	A
$R_{DS(ON), max} @ V_{GS}=10V$	360	
Q_g	13.3	nC

Product Name	Package	Marking
OSG70R360FTF	TO220F	OSG70R360FT



Absolute Maximum Ratings at $T_j=25$ unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	700	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	$I_{D, pulse}$	33	A
Continuous diode forward current ¹⁾ , $T_C=25$ °C	I_S	11	A
Diode pulsed current ²⁾ , $T_C=25$ °C	$I_{S, pulse}$	33	A
Power dissipation ³⁾ , $T_C=25$ °C	P_D	28	W
Single pulsed avalanche energy ⁵⁾	E_{AS}	150	mJ
MOSFET dv/dt ruggedness, $V_{DS} = 480$ V	dv/dt	50	V/ns
Reverse diode dv/dt, $V_{DS} = 480$ V, $I_{SD} = 0$	dv/dt	15	V/ns
Operation and storage temperature	T_{stg}, T_j	-55 to 150	°C

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}				pF	$V_{GS}=0\text{ V}$, $V_{DS}=50\text{ V}$, 00 kHz
Output capacitance	C_{oss}		62.7		pF	
Reverse transfer capacitance	C_{rss}		2.2		pF	
Turn-on delay time	$t_{d(on)}$		30.7		ns	$V_{GS}=10\text{ V}$, $V_{DS}=400\text{ V}$, R_G $I_D=6\text{ A}$
Rise time	t_r		33.9		ns	
Turn-off delay time	$t_{d(off)}$		61.3		ns	
Fall time	t_f		25		ns	

Gate Charge Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
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Electrical Characteristics Diagrams

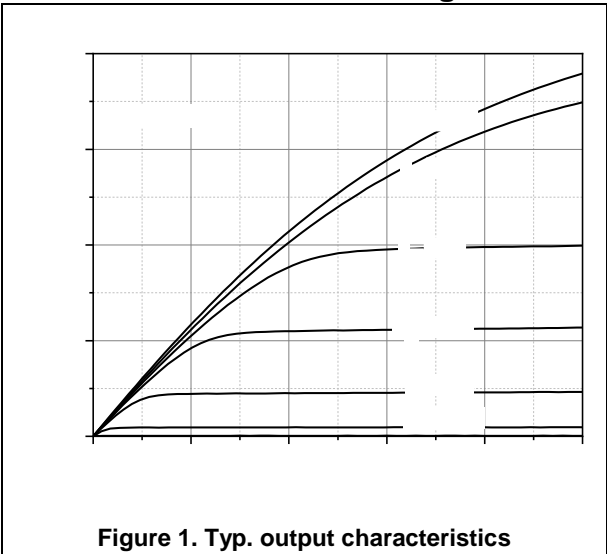


Figure 1. Typ. output characteristics

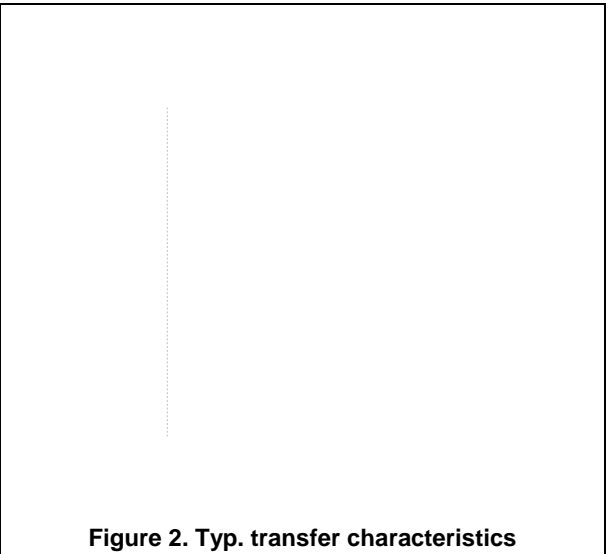


Figure 2. Typ. transfer characteristics

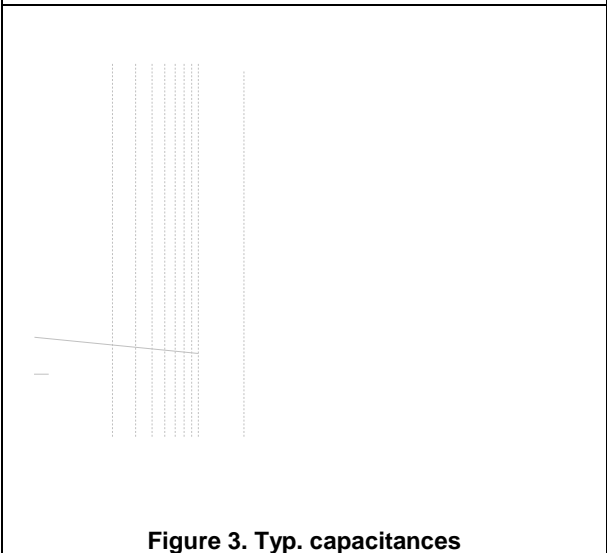


Figure 3. Typ. capacitances

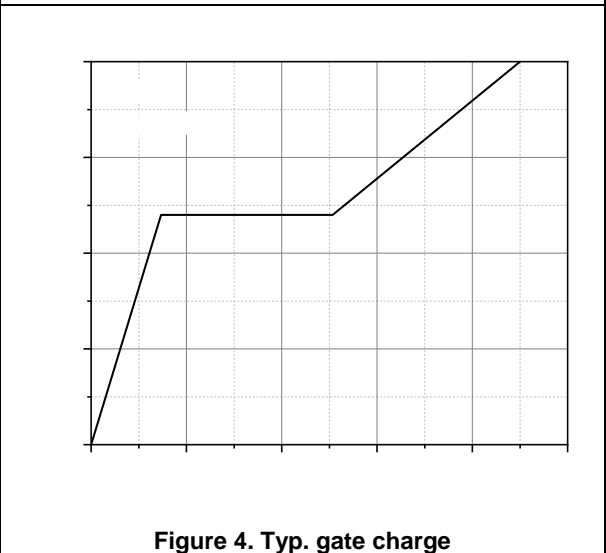


Figure 4. Typ. gate charge

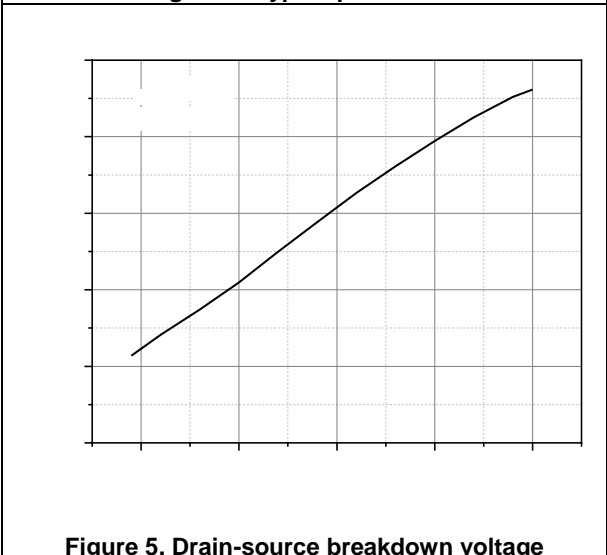


Figure 5. Drain-source breakdown voltage

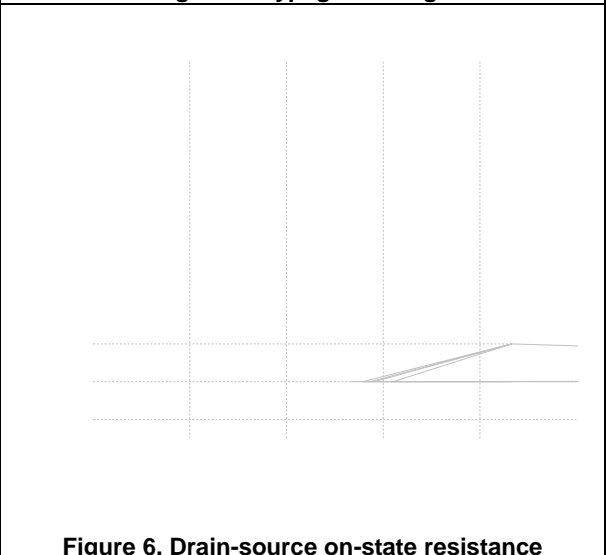


Figure 6. Drain-source on-state resistance

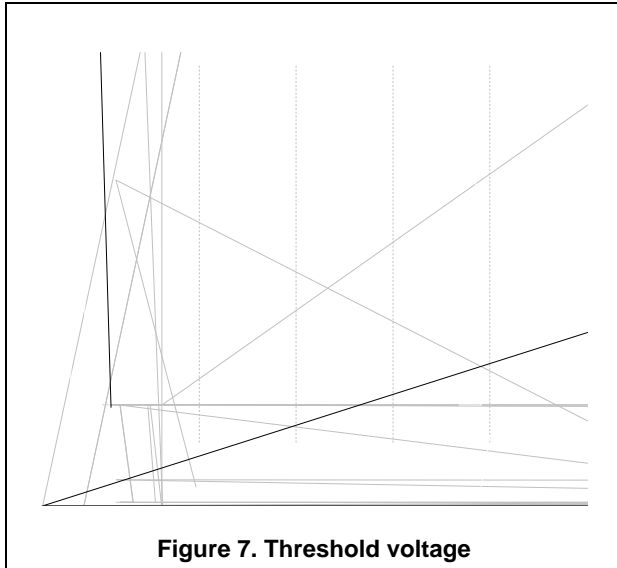


Figure 7. Threshold voltage

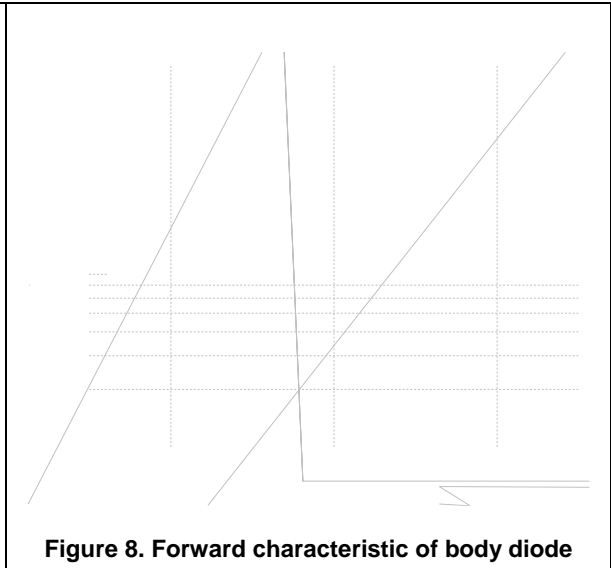


Figure 8. Forward characteristic of body diode

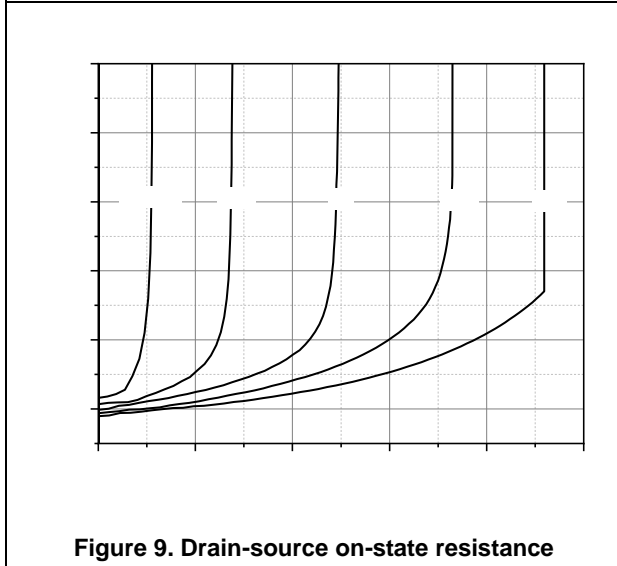


Figure 9. Drain-source on-state resistance

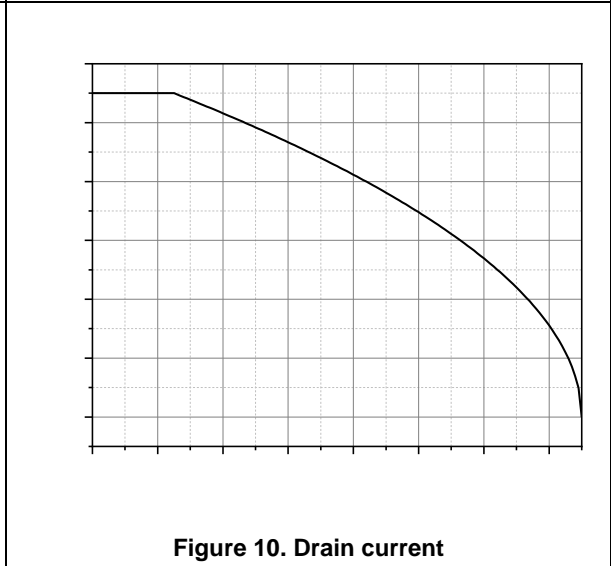


Figure 10. Drain current

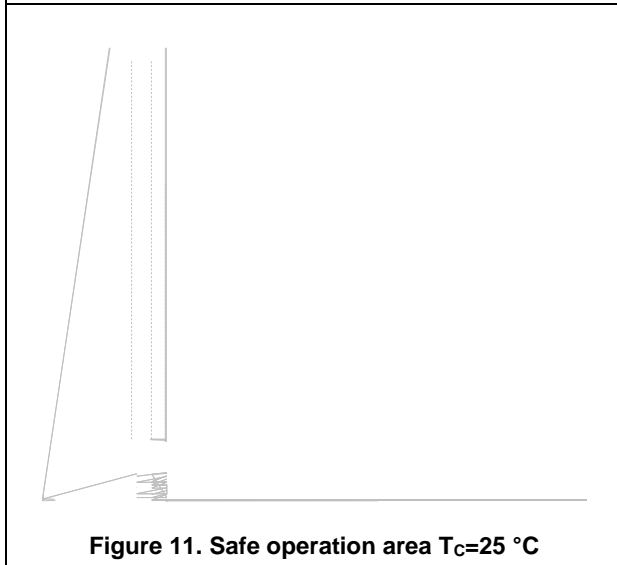


Figure 11. Safe operation area $T_C = 25^\circ\text{C}$

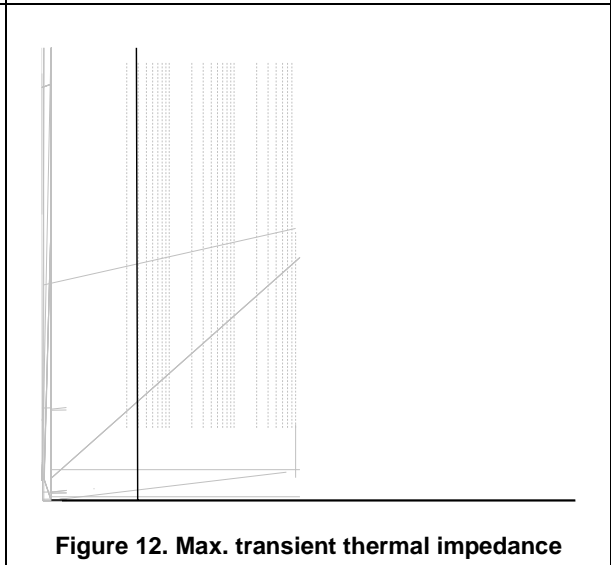


Figure 12. Max. transient thermal impedance

Test circuits and waveforms

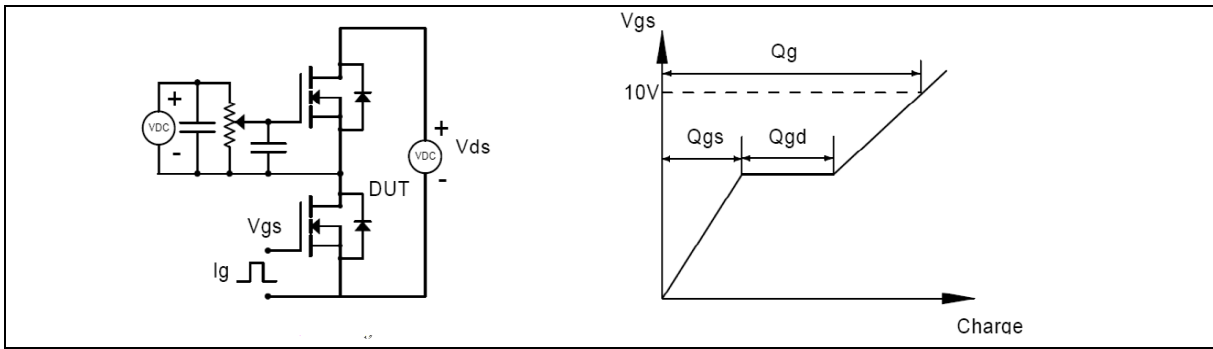


Figure 1. Gate charge test circuit & waveform



Figure 2. Switching time test circuit & waveforms

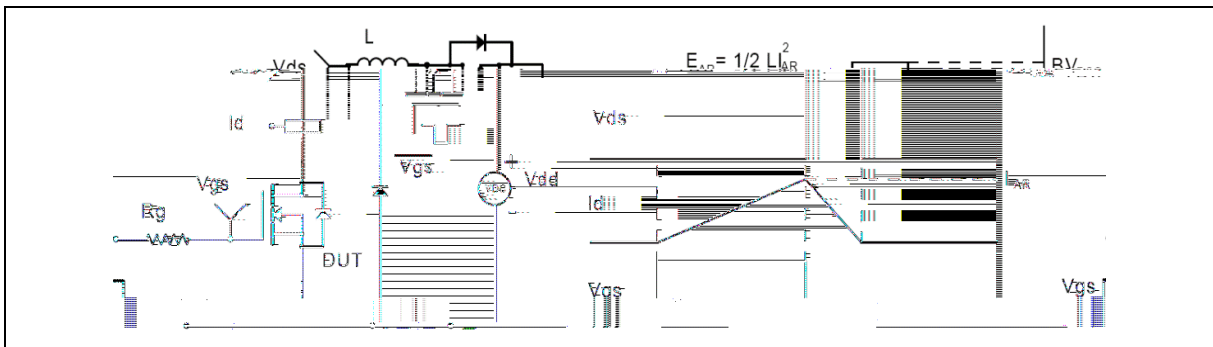


Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

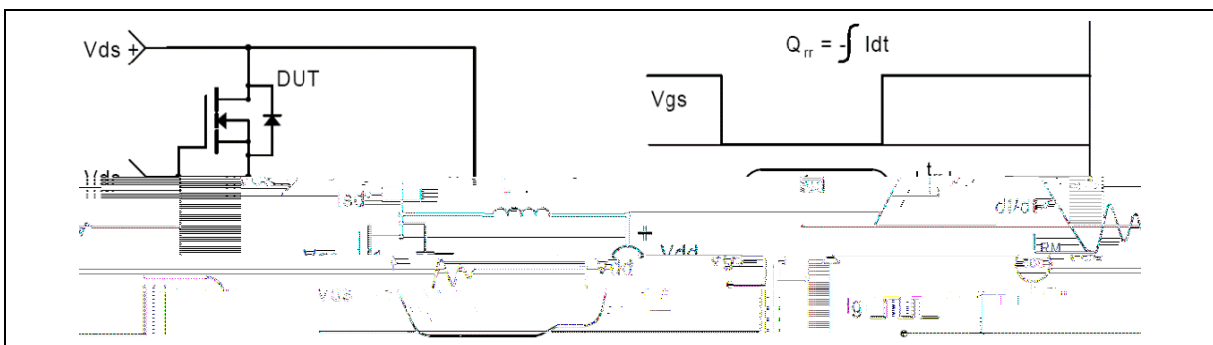
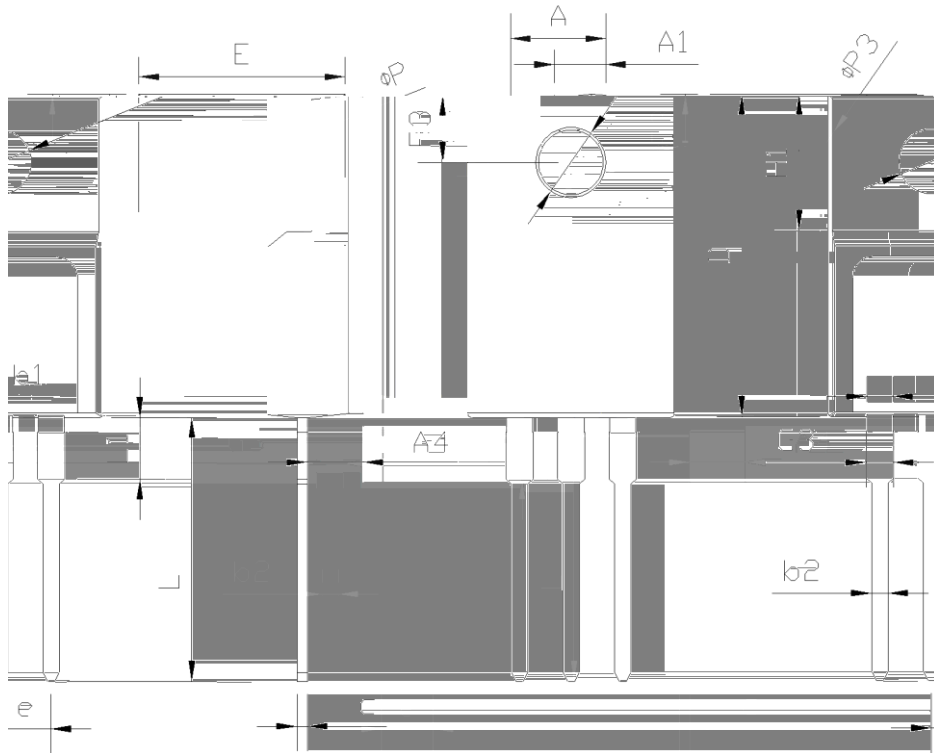


Figure 4. Diode reverse recovery test circuit & waveforms

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
OSG70R360FTF	TO220F	yes	yes	yes

