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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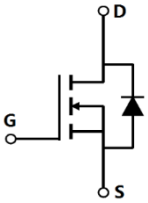
Parameter	Value	Unit
$V_{DS,\ min}$ @ $T_{j(max)}$	650	V
$I_{D,\ pulse}$	24	A
$R_{DS(ON)\ ,\ max}$ @ V_{GS}=10V	580	
Q_g	8.7	nC

Product Name	Package	Marking
OSG60R580DTF	TO252	OSG60R580DT



Absolute Maximum Ratings at T_j=25 unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	600	V
Gate-source voltage	V_{GS}	±30	V
Continuous drain current[1], T_C=25 °C	I_D	8	A
Continuous drain current[1], T_C=100 °C		5	
Pulsed drain current[2], T_C=25 °C	$I_{D, pulse}$	24	A
Continuous diode forward current[1], T_C=25 °C	I_S	8	A
Diode pulsed current[2], T_C=25 °C	$I_{S, pulse}$	24	A
Power dissipation[3], T_C=25 °C	P_D	37	W
Single pulsed avalanche energy[5]	E_{AS}	125	mJ
MOSFET dv/dt ruggedness, V_{DS} 480 V	dv/dt	50	V/ns
Reverse diode dv/dt, V_{DS} 480 V, I_{SD} D	dv/dt	15	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	3.38	°C/W
Thermal resistance, junction-ambient[4]	R	62	°C/W

[redacted] unless otherwise specified

		in.	Typ.	Max.	Unit	Test condition
Drain-source breakdown voltage	BV_{DSS}	00			V	V_{GS}=0 V, I_D=250 A
		650				V_{GS}=0 V, I_D=250 A, T_j=150 °C
Gate threshold voltage	$V_{GS(th)}$	2.9		3.9	V	V_{DS}=V_{GS}, I_D=250 A
Drain-source on-state resistance	$R_{DS(ON)}$		0.5	0.58		V_{GS}=10 V, I_D=4 A
			1.4			V_{GS}=10 V, I_D=4 A, T_j=150 °C

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}		41.7		pF	
Reverse transfer capacitance	C_{rss}		3.1		pF	
Turn-on delay time	$t_{d(on)}$		26.4		ns	V_{GS}=10 V, V_{DS}=400 V, R_G=3 I_D=4 A

Figure 7. Threshold voltage

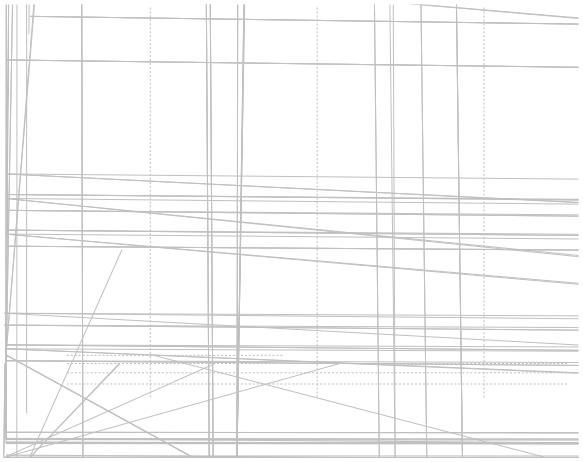


Figure 8. Forward characteristic of body diode

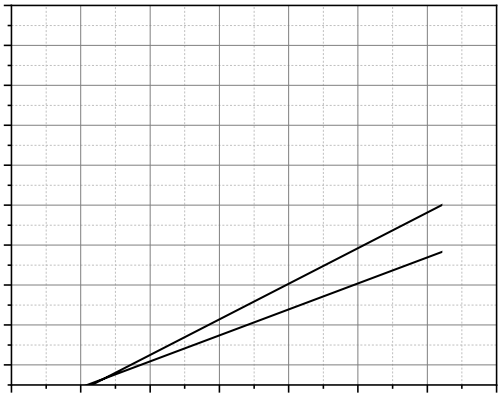


Figure 9. Drain-source on-state resistance

Figure 10. Drain current

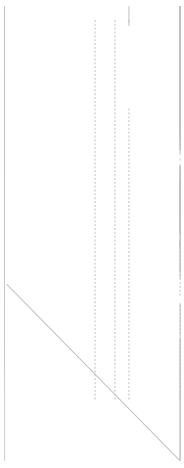


Figure 11. Safe operation area T_C=25 °C

Test circuits and waveforms

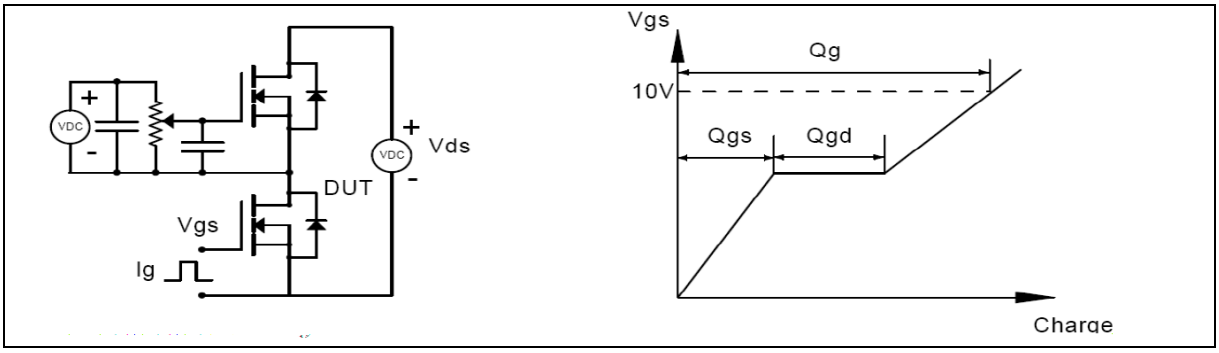


Figure 1. Gate charge test circuit & waveform

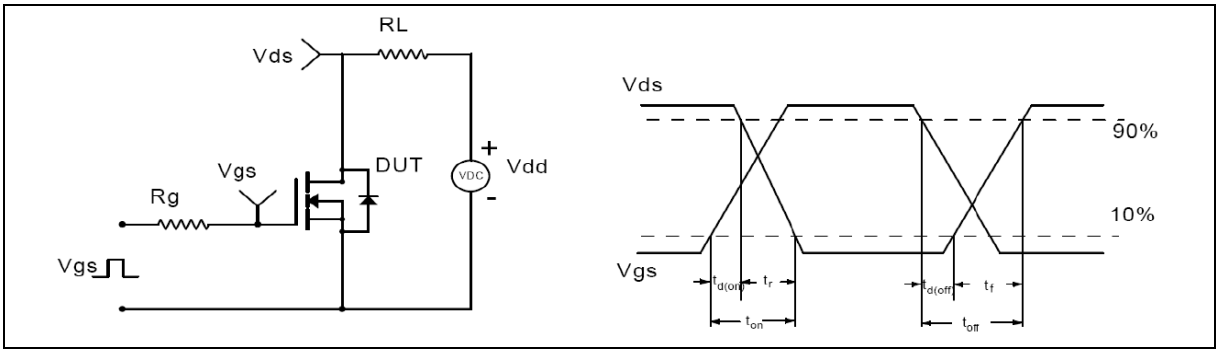


Figure 2. Switching time test circuit & waveforms

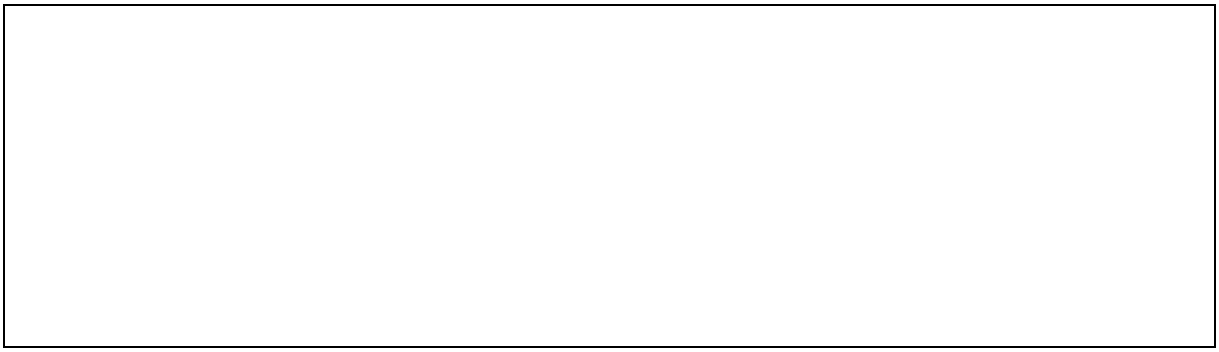


Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

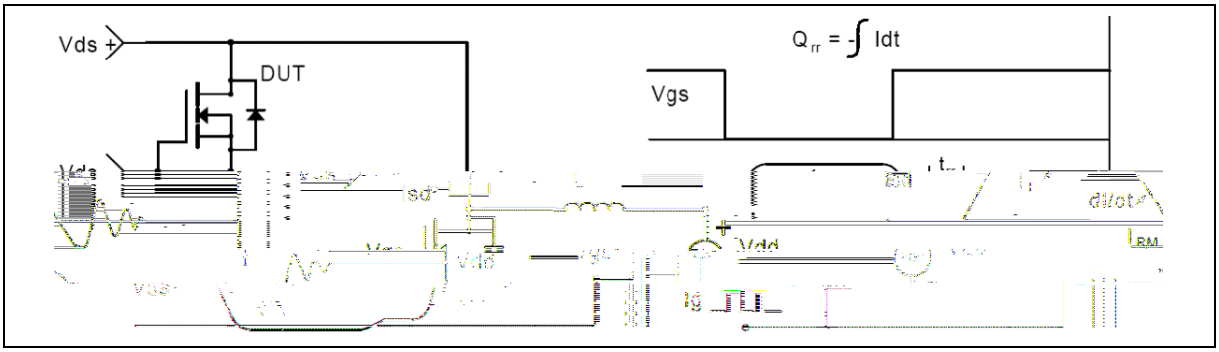
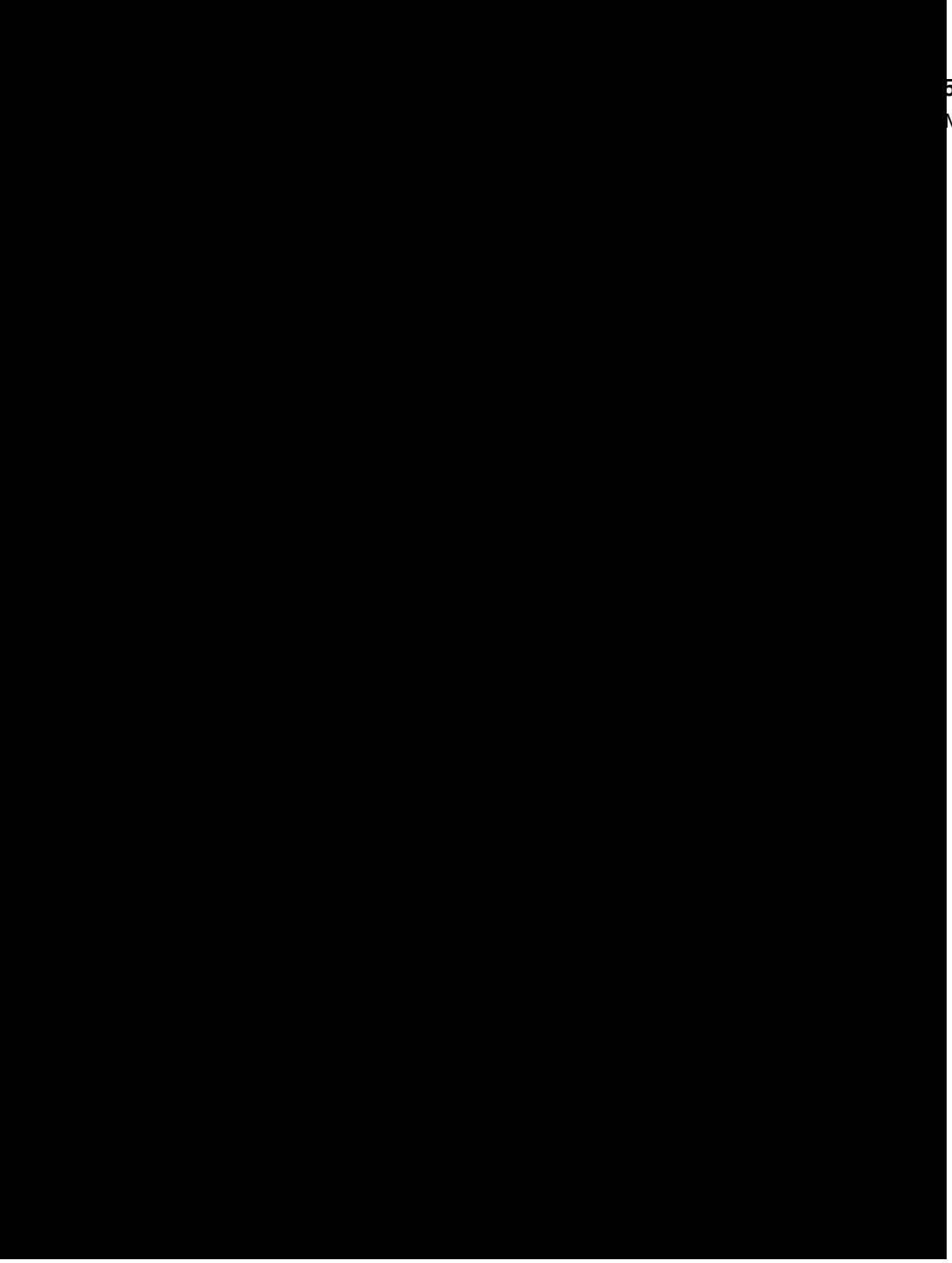


Figure 4. Diode reverse recovery test circuit & waveforms



Ordering Information

Package Type	Units/ Reel	Reels / Inner Box	Units/ Inner Box	Inner Box/ Carton Box	Units/ Carton Box
TO252-J	2500	2	5000	5	25000
TO252-P	2500	2	5000	5	25000

Product Information

Product	Package	Pb Free	RoHS	Halogen Free
OSG60R580DTF	TO252	yes	yes	yes