

Á

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.

Á

-  A É , Ü

Absolute Maximum Ratings at $T_j=25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	650	V
Gate-source voltage	V_{GS}	± 30	V
Continuous drain current ¹⁾ , $T_C=25^\circ\text{C}$	I_D	5	A
Continuous drain current ¹⁾ , $T_C=100^\circ\text{C}$		3.2	
Pulsed drain current ²⁾ , $T_C=25^\circ\text{C}$	$I_{D, pulse}$	15	A
Continuous diode forward current ¹⁾ , $T_C=25^\circ\text{C}$	I_S	5	A
Diode pulsed current ²⁾ , $T_C=25^\circ\text{C}$	$I_{S, pulse}$	15	A
Power dissipation ³⁾ , $T_C=25^\circ\text{C}$	P_D	37	W
Single pulsed avalanche energy ⁵⁾	E_{AS}	130	mJ
MOSFET dv/dt ruggedness, $V_{DS} \leq 100\text{V}$, $I_D = 0\text{A}$	dv/dt	50	V/ns
Reverse diode dv/dt, $V_{DS} \leq 100\text{V}$, $I_S = 0\text{A}$	dv/dt	15	V/ns
Operation and storage temperature	T_{stg}, T_j	-55 to 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal resistance, junction-case	$R_{\theta JC}$	3.4	$^\circ\text{C/W}$
Thermal resistance, junction-ambient ⁴⁾	$R_{\theta JA}$	62	$^\circ\text{C/W}$

Electrical Characteristics at $T_j=25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Drain-source breakdown voltage	BV_{DSS}	650			V	$V_{GS}=0\text{V}, I_D=250\text{A}$
		700	770			$V_{GS}=0\text{V}, I_D=10\text{A}, T_j=150^\circ\text{C}$
Gate threshold voltage	$V_{GS(th)}$	2.0		4.0	V	$V_{DS}=V_{GS}, I_D=250\text{A}$
Drain-source on-state resistance	$R_{DS(on)}$		0.72	0.90		$V_{GS}=10\text{V}, I_D=3\text{A}$
			2.1			$V_{GS}=10\text{V}, I_D=3\text{A}, T_j=150^\circ\text{C}$

Gate-source
source

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		343		pF	$V_{GS}=0\text{ V}$, $V_{DS}=50\text{ V}$, 1MHz

Electrical Characteristics Diagrams

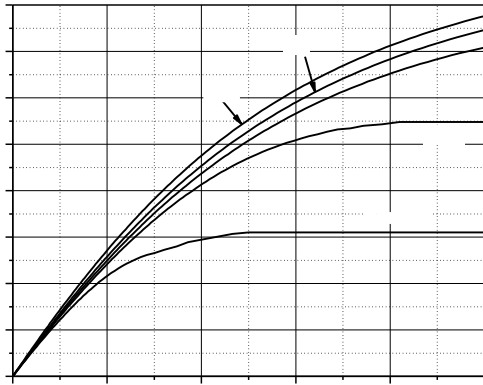


Figure 1. Typ. output characteristics

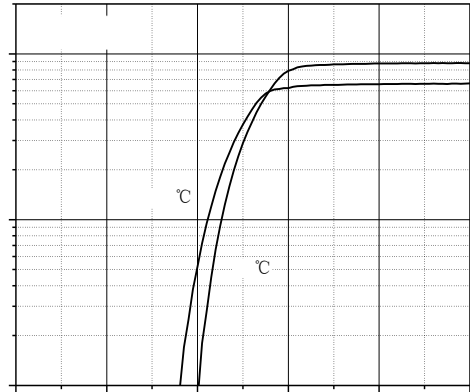


Figure 2. Typ. transfer characteristics

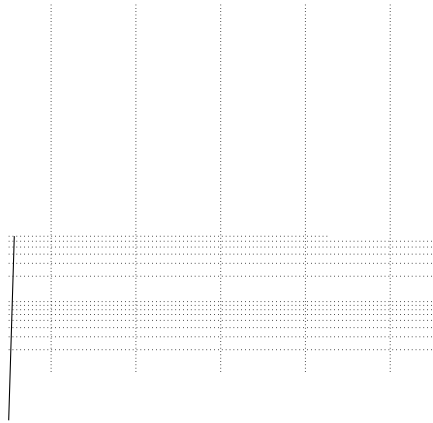


Figure 3. Typ. capacitances

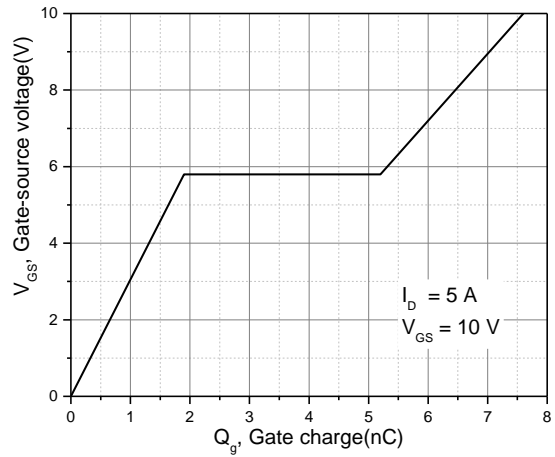


Figure 4. Typ. gate charge

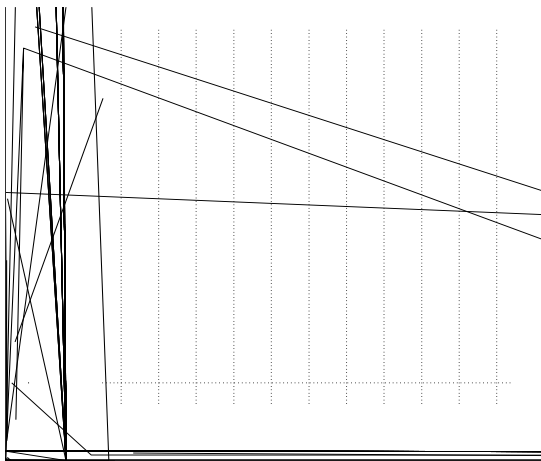


Figure 5. Drain-source breakdown voltage



Figure 6. Drain-source on-state resistance

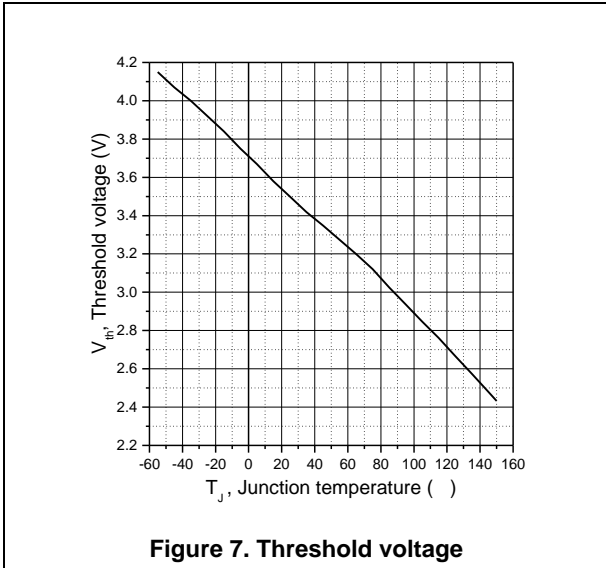


Figure 7. Threshold voltage

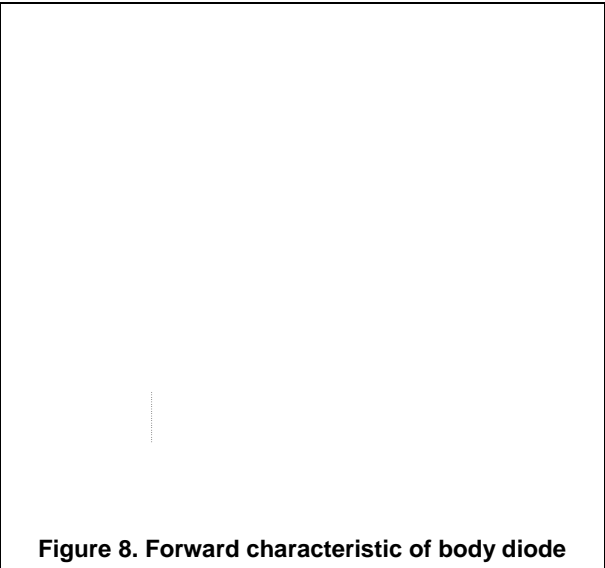


Figure 8. Forward characteristic of body diode

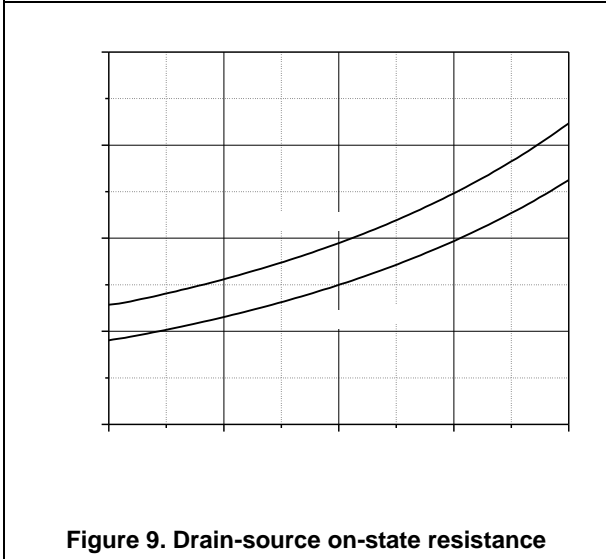


Figure 9. Drain-source on-state resistance

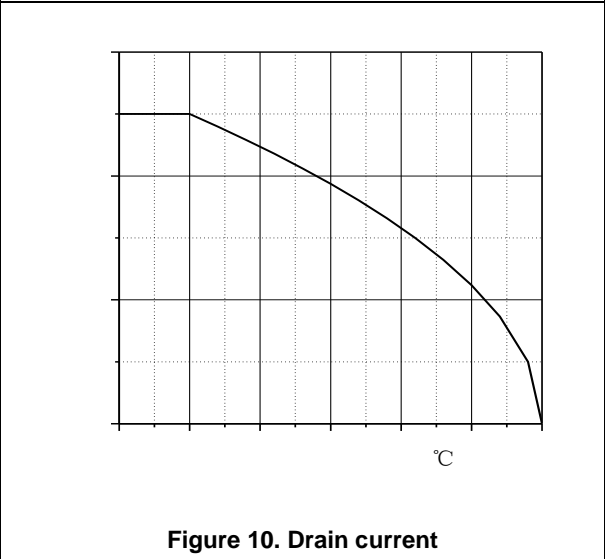


Figure 10. Drain current

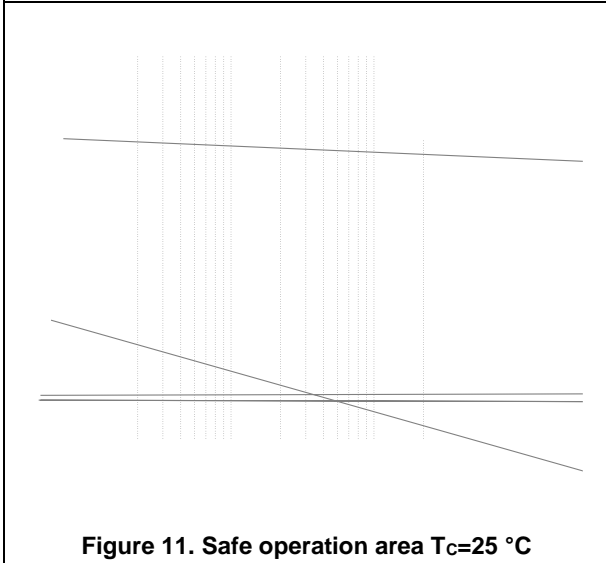


Figure 11. Safe operation area T_c=25 °C

Test circuits and waveforms

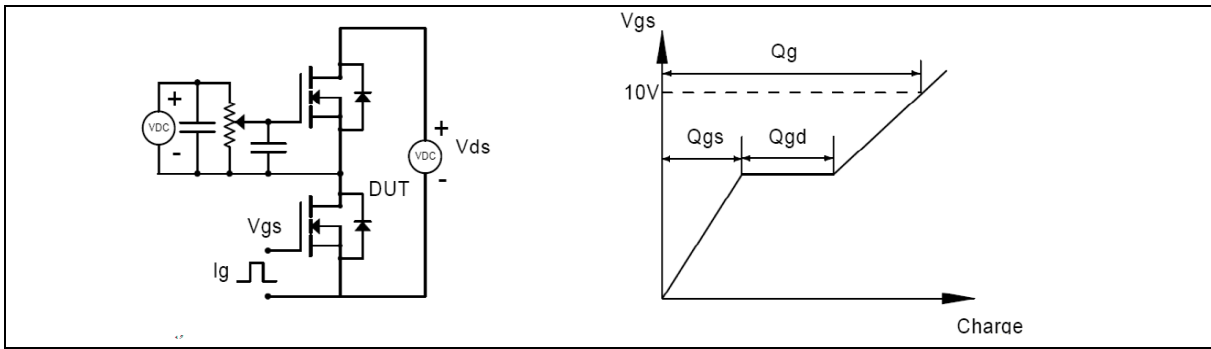


Figure 1. Gate charge test circuit & waveform

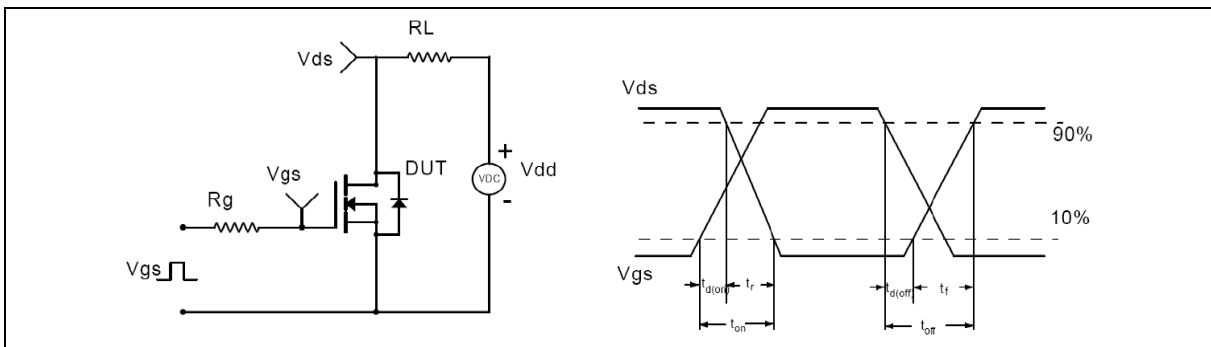


Figure 2. Switching time test circuit & waveforms

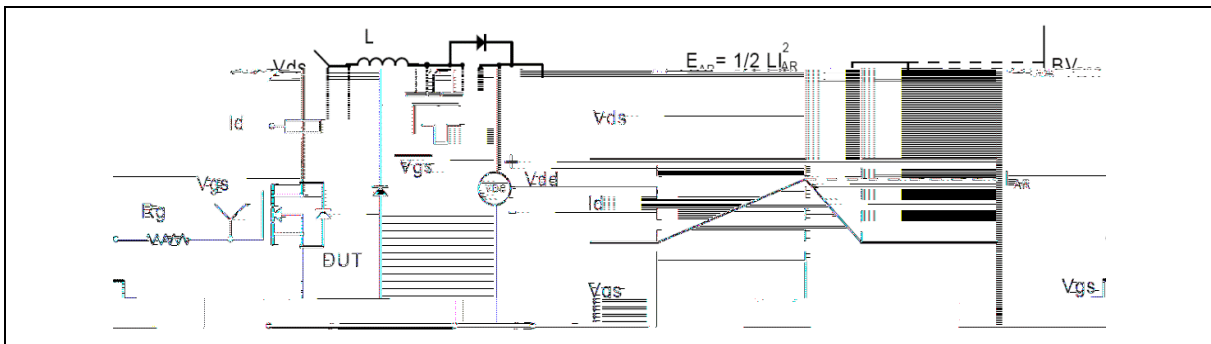


Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

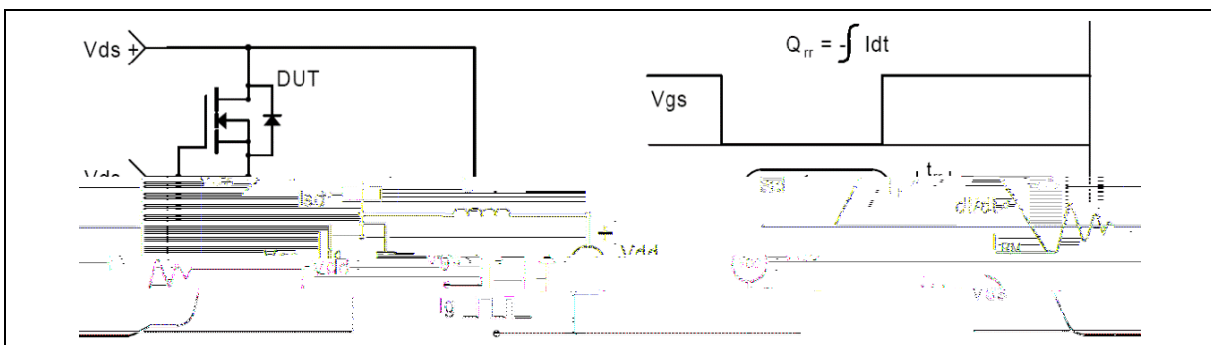


Figure 4. Diode reverse recovery test circuit & waveforms

Enhancement Mode N-

