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.

•

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	15	A
Continuous drain current[1], T_C=100 °C		9.5	
Pulsed drain current[2], T_C=25 °C	$I_{D, pulse}$	45	A
Continuous diode forward current[1], T_C=25 °C	I_S	15	A
Diode pulsed current[2], T_C=25 °C	$I_{S, pulse}$	45	A
Power dissipation[3], T_C=25 °C	P_D	34	W
Single pulsed avalanche energy[5]	E_{AS}	410	mJ
MOSFET dv/dt ruggedness, V_{DS} 480 V	dv/dt	50	V/ns
Reverse diode dv/dt, V_{DS} 480 V, I_{SD} I_D	dv/dt	15	

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		) - -		pF	V_{GS}=0 V, V_{DS}=50 V, Hz
Output capacitance	C_{oss}		80.1		pF	
Reverse transfer capacitance	C_{rss}		2.1		pF	
Turn-on delay time	$t_{d(on)}$		33.6		ns	V_{GS}=10 V, V_{DS}=400 V, R_G I_D=7.5 A
Rise time	t_r		20.3		ns	
Turn-off delay time	$t_{d(off)}$		57.9		ns	
Fall time	t_f		4.5		ns	

Gate Charge Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Total gate charge	Q_g		22.7		nC	V_{GS}=10 V, V_{DS}=400 V, I_D=7.5 A
Gate-source charge	Q_{gs}		8.6		nC	
Gate-drain charge	Q_{gd}		2.3		nC	
Gate plateau voltage	$V_{plateau}$		5.5		V	

Electrical Characteristics Diagrams

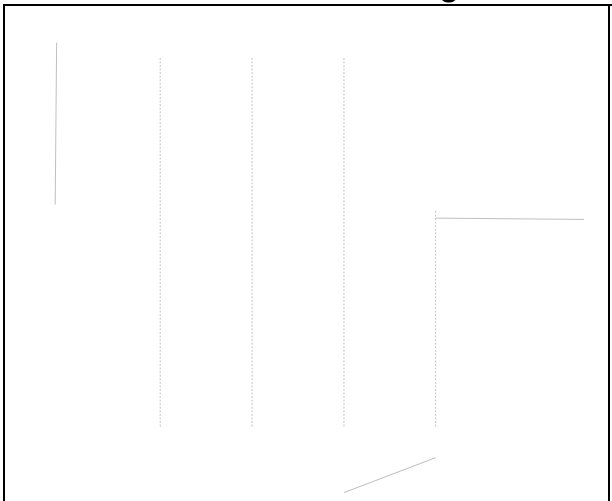


Figure 1. Typ. output characteristics

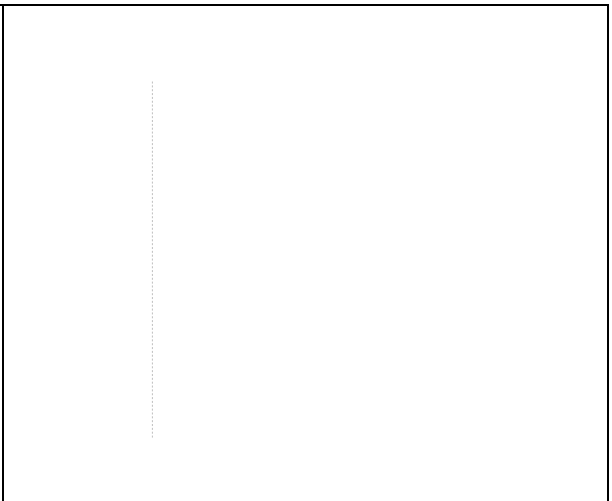


Figure 2. Typ. transfer characteristics

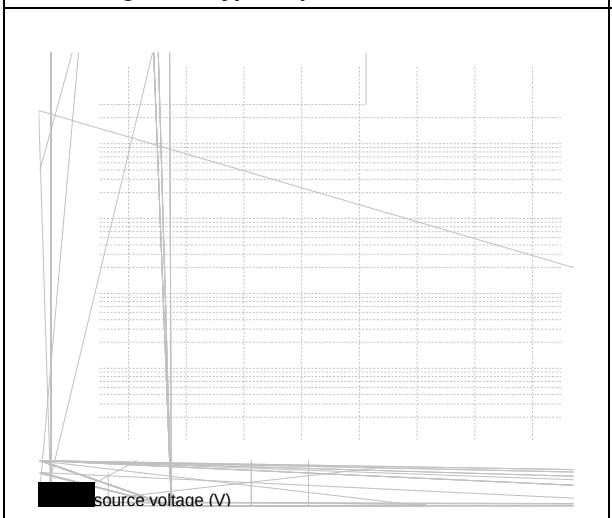


Figure 3. Typ. capacitances

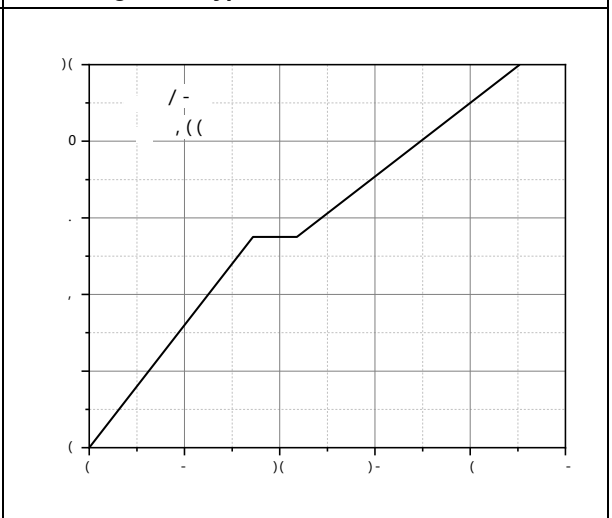


Figure 4. Typ. gate charge

Figure 5. Drain-source breakdown voltage

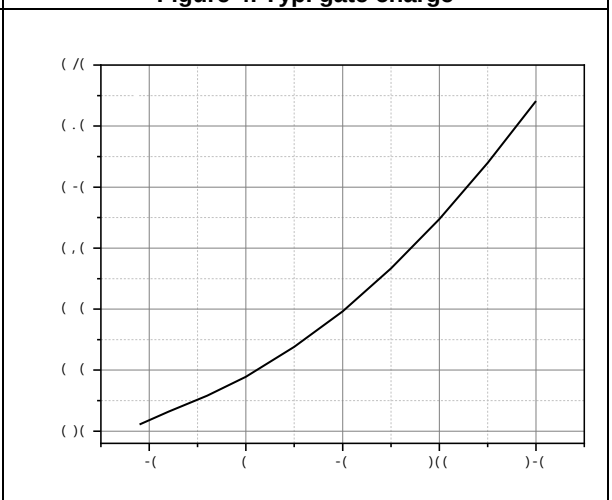


Figure 6. Drain-source on-state resistance

Figure 7. Threshold voltage

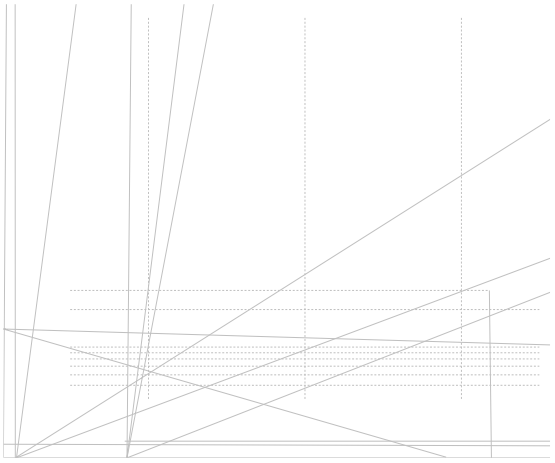


Figure 8. Forward characteristic of body diode

Figure 9. Drain-source on-state resistance

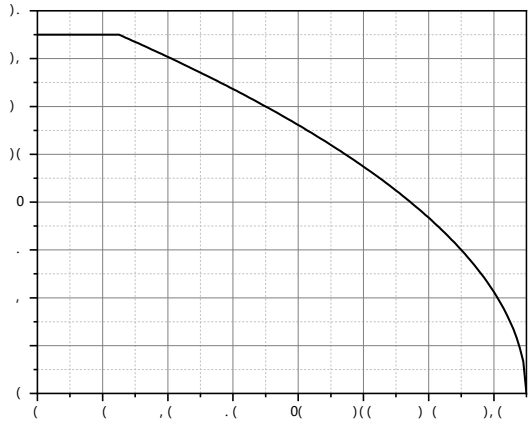


Figure 10. Drain current

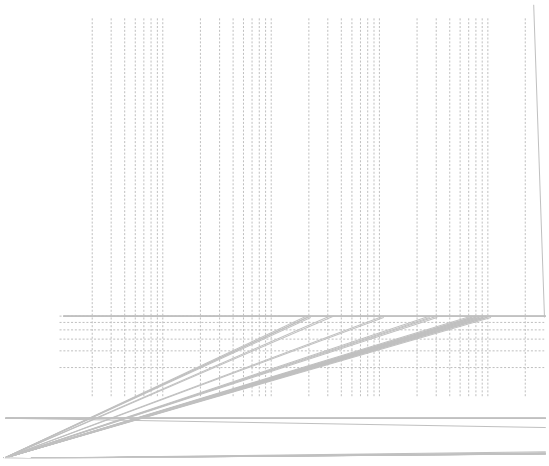


Figure 11. Safe operation area T_C=25 °C

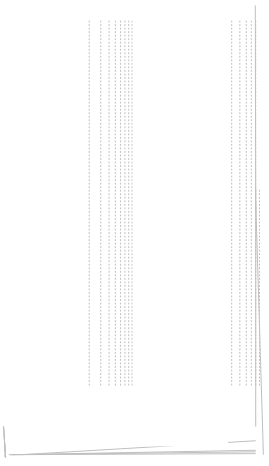
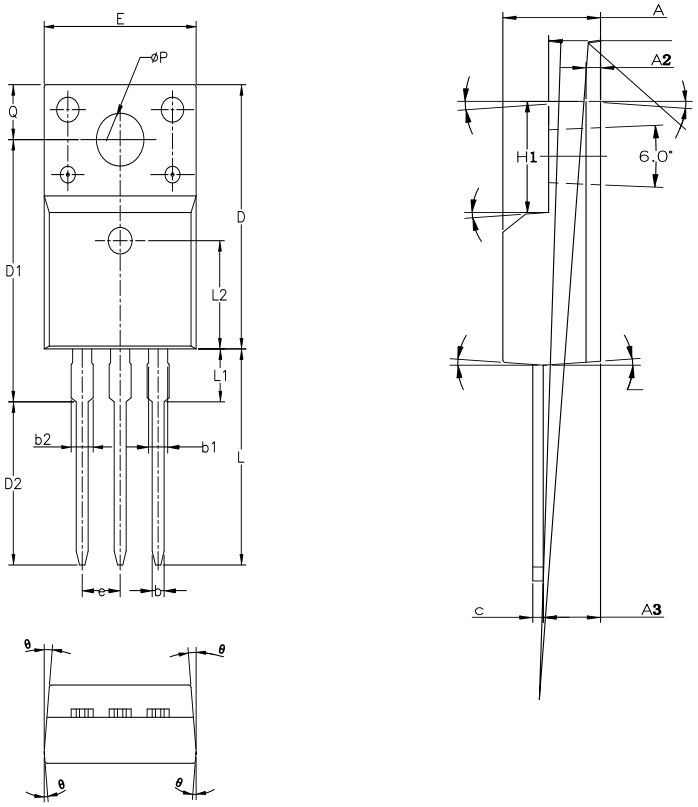


Figure 12. Max. transient thermal impedance

Package Information

Symbol	mm		
	Min	Nom	Max
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

Package Information



Symbol	mm		
	Min	Nom	Max
A	4.40	4.50	4.60
A1	1.27	1.30	1.33
A2	2.30	2.40	2.50
b	0.70	-	0.90
b1	1.27	-	1.40
c	0.45	0.50	0.60
D	15.30	15.70	16.10
D1	9.10	9.20	9.30
D2	13.10	-	13.70
E	9.70	9.90	10.20
E1	7.80	8.00	8.20
e	2.54BSC		
e1	5.08BSC		
H1	6.30	6.50	6.70
L	12.78	13.08	13.38
L1	-	-	3.50
L2	4.60REF		
	3.55	3.60	3.65
Q	2.73	-	2.87
1	1		

Version 2: 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-C	50	20	1000	6	6000
TO220F-J	50	20	1000	5	5000

Product Information

Product	Package