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.

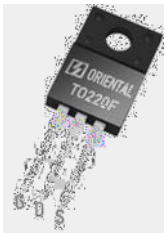
The GreenMOS® Generic series is optimized for extreme switching performance to minimize switching loss. It is tailored for high power density applications to meet the highest efficiency standards.

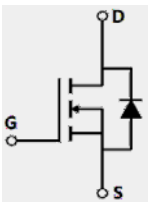
- Low $R_{DS(ON)}$ & FOM
- Extremely low switching loss
- Excellent stability and uniformity

- PC power
- LED lighting
- Telecom power
- Server power
- EV Charger
- Solar/UPS

$V_{DS,\ min}$ @ $T_{j(max)}$	600	V
$I_{D,\ pulse}$	69	A
$R_{DS(ON)\ ,\ max}$ @ V_{GS}=10V	140	mΩ
Q_g	24.1	nC

OSG55R140FF	TO220F	OSG55R140F





at T_j=25°C unless otherwise noted

Drain-source voltage	V_{DS}	550	V
Gate-source voltage	V_{GS}	±30	V
Continuous drain current[1], T_C=25 °C	I_D	23	A
Continuous drain current[1], T_C=100 °C		14.5	
Pulsed drain current[2], T_C=25 °C	$I_{D, pulse}$	69	A
Continuous diode forward current[1], T_C=25 °C	I_S	23	A
Diode pulsed current[2], T_C=25 °C	$I_{S, pulse}$	69	A
Power dissipation[3], T_C=25 °C	P_D	59.5	W
Single pulsed avalanche energy[5]	E_{AS}	330	mJ
MOSFET dv/dt ruggedness, V_{DS}=0…480 V	dv/dt	50	V/ns
Reverse diode dv/dt, V_{DS}=0…480 V, I_{SD}≤I_D	dv/dt	15	V/ns
Operation and storage temperature	T_{stg}, T_j	-55 to 150	°C

Thermal resistance, junction-case	$R_{\theta JC}$	2.1	°C/W
Thermal resistance, junction-ambient[4]	$R_{\theta JA}$	62.5	°C/W

at T_j=25°C unless otherwise specified

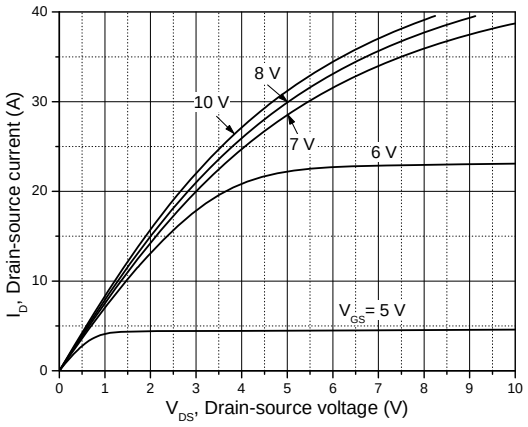
Drain-source breakdown voltage	BV_{DSS}	550			V	V_{GS}=0 V, I_D=250 uA
		600	670			V_{GS}=0 V, I_D=250 uA, T_j=150 °C
Gate threshold voltage	$V_{GS(th)}$	2		4	V	V_{DS}=V_{GS}, I_D=250 uA
Drain-source on-state resistance	$R_{DS(ON)}$		0.11	0.14	Ω	V_{GS}=10 V, I_D=11.5 A
			0.34			V_{GS}=10 V, I_D=11.5 A, T_j=150 °C
Gate-source leakage current	I_{GSS}			100	nA	V_{GS}=30 V
				-100		V_{GS}=-30 V
Drain-source leakage current	I_{DSS}			1	μA	V_{DS}=550 V, V_{GS}=0 V

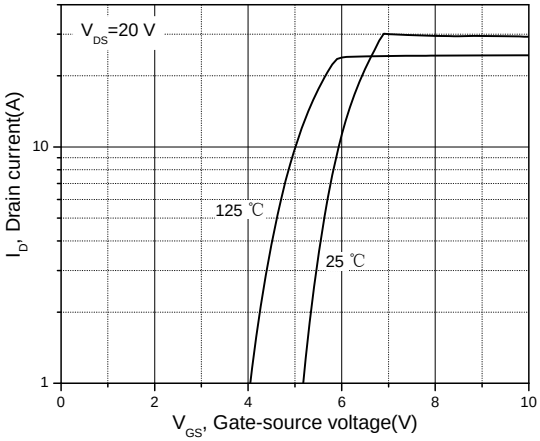
Input capacitance	C_{iss}		1408.8		pF	V_{GS}=0 V, V_{DS}=50 V, f=1 MHz
Output capacitance	C_{oss}		151.2		pF	
Reverse transfer capacitance	C_{rss}		4.14		pF	
Turn-on delay time	$t_{d(on)}$		40.5		ns	V_{GS}=10 V, V_{DS}=420 V, R_G=25 Ω, I_D=23 A
Rise time	t_r		73.5		ns	
Turn-off delay time	$t_{d(off)}$		63.6		ns	
Fall time	t_f		73.5		ns	

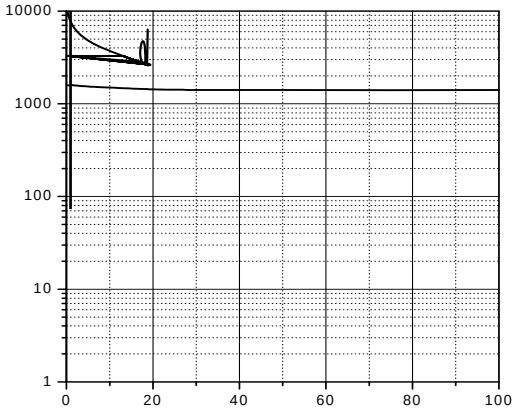
Total gate charge	Q_g		24.1		nC	V_{GS}=10 V, V_{DS}=420 V, I_D=23 A
Gate-source charge	Q_{gs}		9		nC	
Gate-drain charge	Q_{gd}		7.4		nC	
Gate plateau voltage	$V_{plateau}$		5.6		V	

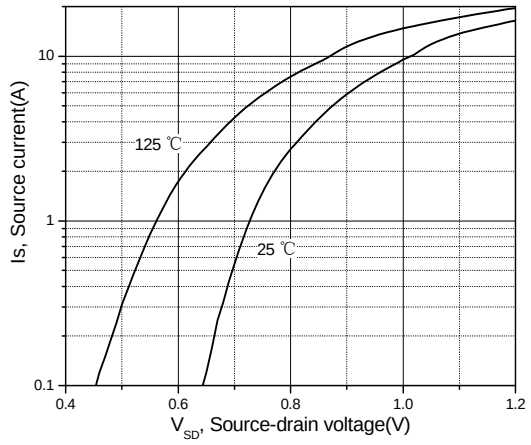
Diode forward voltage	V_{SD}			1.4	V	I_S=23 A, V_{GS}=0 V
Reverse recovery time	t_{rr}		372		ns	V_R=400 V, I_S=23 A, di/dt=100 A/μs
Reverse recovery charge	Q_{rr}		5.1		μC	
Peak reverse recovery current	I_{rrm}		25.6		A	

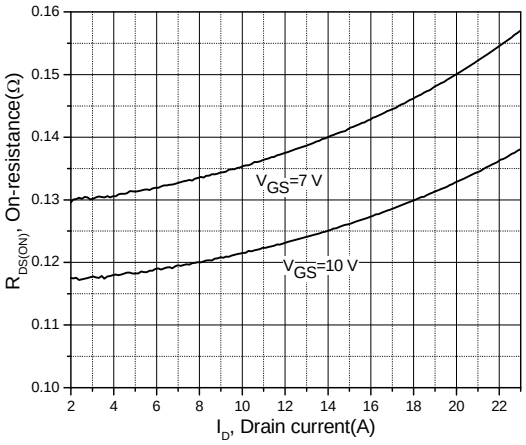
1) Calculated continuous current based on maximum allowable junction temperature.
2) Repetitive rating; pulse width limited by max. junction temperature.
3) Pd is based on max. junction temperature, using junction-case thermal resistance.
4) The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with T_a=25 °C.
5) V_{DD}=100 V, V_{GS}=10 V, L=80 mH, starting T_j=25 °C.

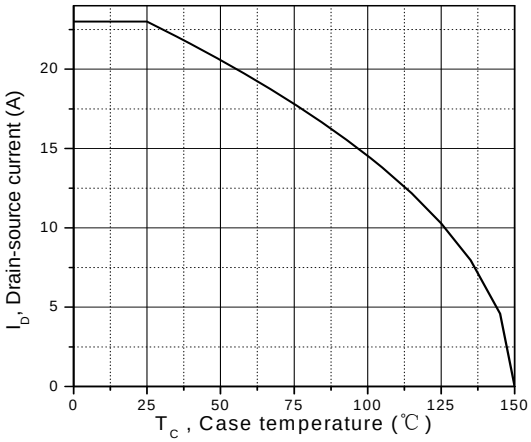


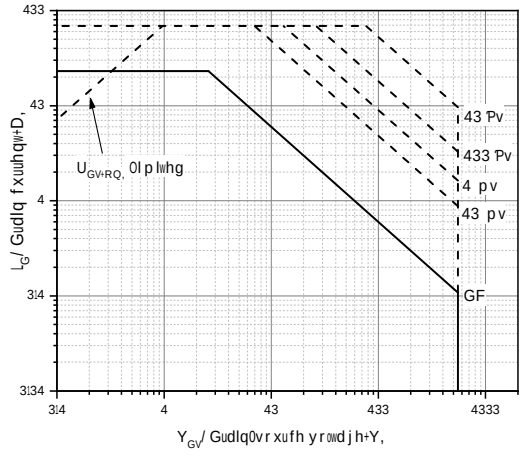


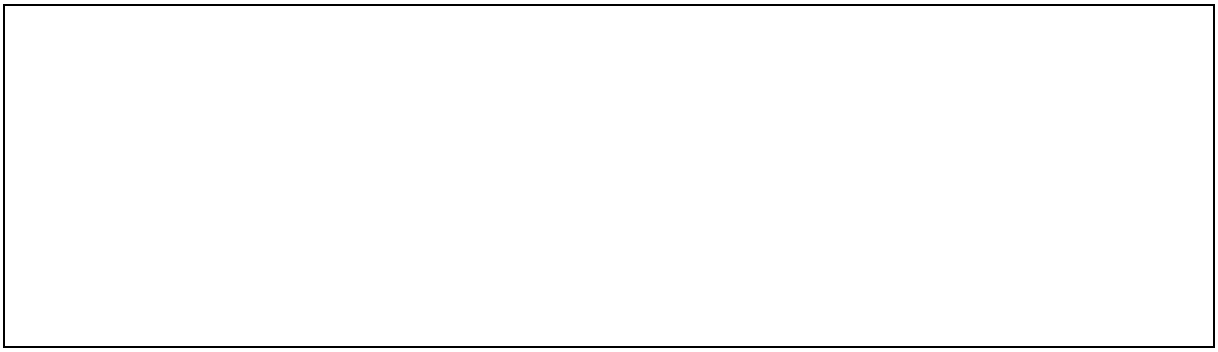


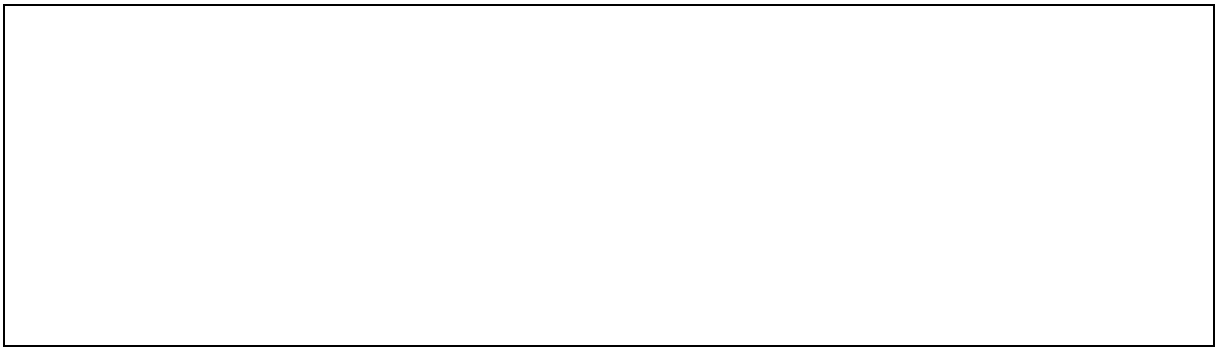


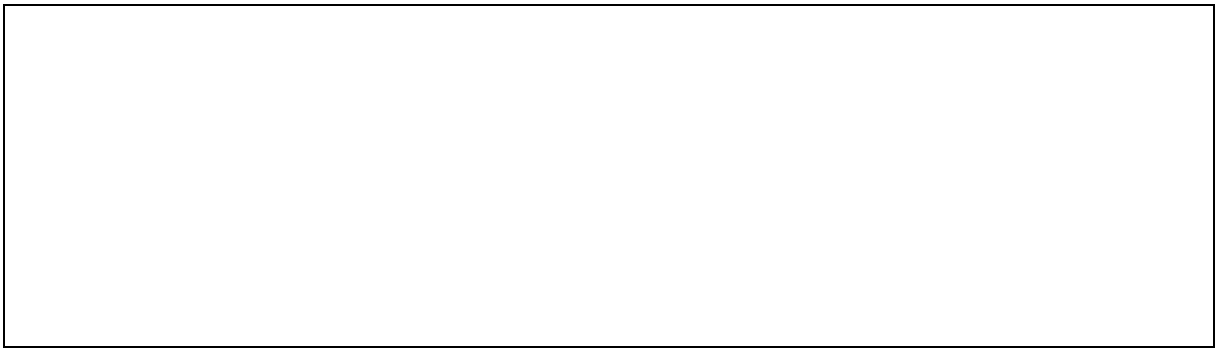


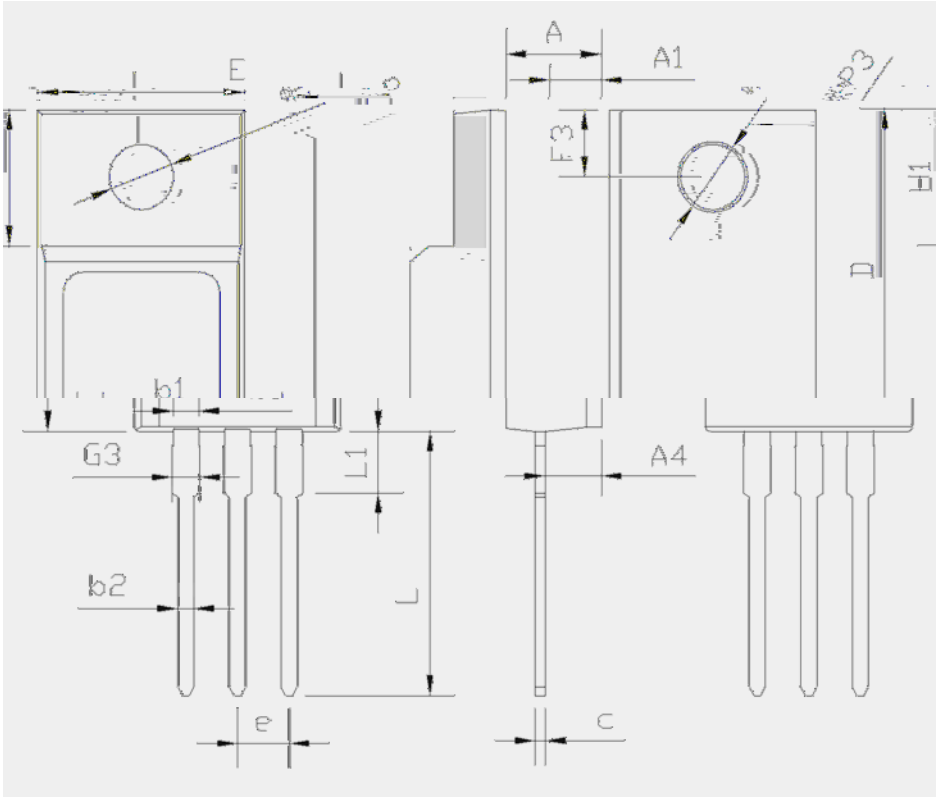






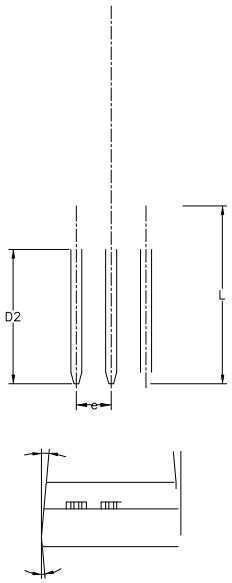






Symbol	mm		
	Min	Nom	Max
E	9.96	10.16	10.36
A	4.50	4.70	4.90
A1	2.34	2.54	2.74
A4	2.56	2.76	2.96
c	0.40	0.50	0.65
D	15.57	15.87	16.17
H1	6.70 REF		
e	2.54 BSC		
L	12.68	12.98	13.28
L1	2.88	3.03	3.18
ΦP	3.03	3.18	3.38
ΦP3	3.15	3.45	3.65
F3	3.15	3.30	3.45
G3	1.25	1.35	1.55
b1	1.18	1.28	1.43
b2	0.70	0.80	0.95

Version 1: TO220F-C outline dimension



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		
ΦP	3.08	3.18	3.28
Q	3.20	-	3.40
θ	1º	3º	5º

Version 2: TO220F-J outline dimension

TO220F-C	50	20	1000	6	6000
TO220F-J	50	20	1000	5	5000

OSG55R140FF	TO220F	yes	yes	yes

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