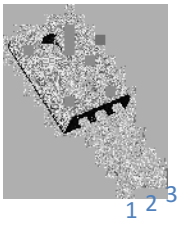
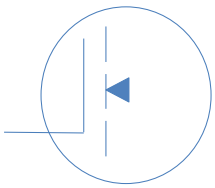
60V N-Ch Power MOSFET

V_{DS}		60	V
$R_{DS(on),typ}$	TO-220F	1.9	mΩ
$I_{D\ (Sillicon\ Limited)}$		109	A

TO-220F





Part Number	Package	Marking
HGA025N06S	TO-220F	GA025N06S

Absolute Maximum Ratings at T_j=25 (unless otherwise specified)

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_C=25	109	A
		T_C=100	77	
Drain to Source Voltage	V_{DS}	-	60	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	500	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.1mH, T_C=25	180	mJ
Power Dissipation	P_D	T_C=25	54	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to175	

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Case	R_{JC}	2.8	/W
Thermal Resistance Junction-Ambient	R_{JA}	60	/W

Synchronous Rectifi
Hard Switching and
Power Tools
UPS
Motor Control

Electrical Characteristics at T_j=25 (unless otherwise specified)

Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250μA	2	2.8	4	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=60V, T_j=25	-	-	1	μA
		V_{GS}=0V, V_{DS}=60V, T_j=100	-	-	100	
				-	±100	nA
						S

-002 T2 Tmnuin oo Sounc,e on R2 Tmes,is,oanc,eM4C0 P,MC1D-181 BD4 0 Tc 0 Tw 10.44 0 0 9.023 7.5(V)Tj-R.004 Tc 0.00

Figure 3. On-Resistance vs. Drain Current and Gate Voltage	Figure 4. Normalized On-Resistance vs. Junction Temperature
Figure 5. Typical Transfer Characteristics	Figure 6. Typical Source-Drain Diode Forward Voltage

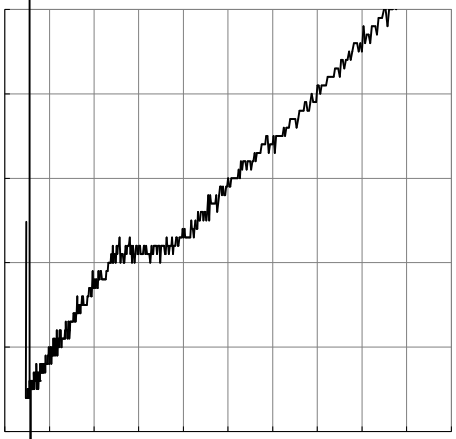
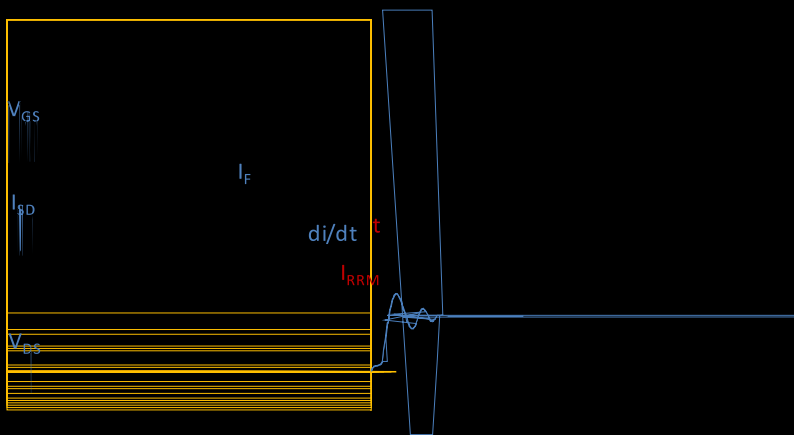
Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage	Figure 8. Typical Capacitance vs. Drain-to-Source Voltage
	

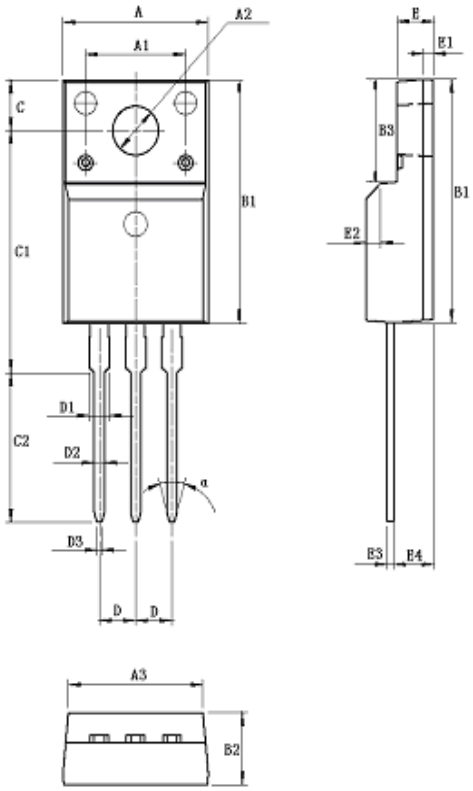
Figure 9. Maximum Safe Operating Area	Figure 10. Maximun Drain Current vs. Case Temperature

Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Case


V_{GS}
I_F
I_{SD}
di/dt
t
I_{RRM}
V_{DS}

Package Outline

TO-220F, 3 leads



Dimentions in mm unless otherwise specified

Symbol	Min	Nom	Max
A	9.96	10.16	10.36
A1		7	
A2	3.08	3.18	3.28
A3	9.26	9.46	9.66
B1	15.67	15.87	16.07
B2	4.50	4.70	4.90
B3	6.48	6.68	6.88
C	3.20	3.30	3.40
C1	15.60	15.80	16.00
C2	9.55	9.75	9.95
D		2.54	
D1			1.47
D2	0.70	0.80	0.90
D3	0.25	0.35	0.45
E	2.34	2.54	2.74
E1		0.70	
E2		1.0x45°	
E3	0.45	0.50	0.60
E4	2.56	2.76	2.96
α (degree)		30°	