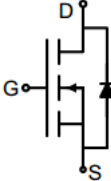


N-Channel Enhancement Mode Power MOSFET

Description The G06N02H uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge. It can be used in a wide variety of applications.		 Schematic diagram	
General Features • V_{DS} 20V • I_D (at $V_{GS} = 10V$) 6A • $R_{DS(ON)}$ (at $V_{GS} = 4.5V$) < 14.3mΩ • $R_{DS(ON)}$ (at $V_{GS} = 2.5V$) < 17.1mΩ • 100% Avalanche Tested • RoHS Compliant		 SOT-223	
Application • Power switch • DC/DC converters			
Device	Package	Marking	Packaging
G06N02H	SOT-223	G06N02	4000pcs/Reel

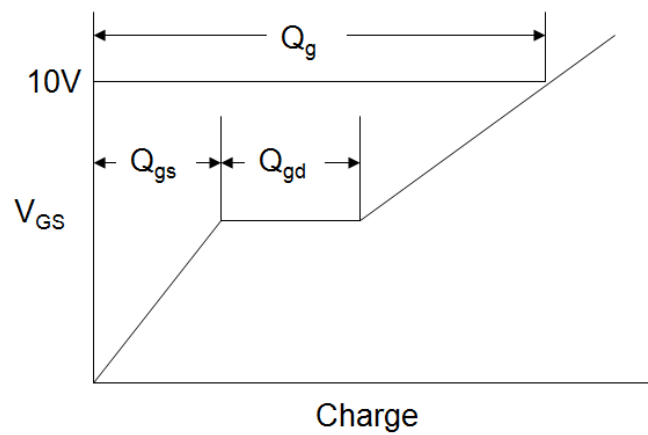
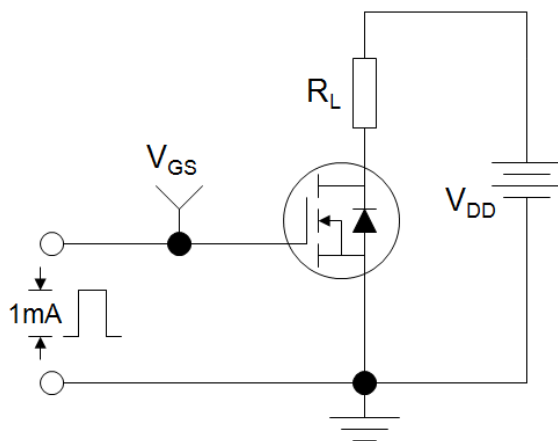
Absolute Maximum Ratings $T_C = 25^\circ\text{C}$, unless otherwise noted			
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Continuous Drain Current	I_D	6	A
Pulsed Drain Current (note1)	I_{DM}	24	A
Gate-Source Voltage	V_{GS}	± 12	V
Power Dissipation	P_D	1.8	W
Single pulse avalanche energy (note3)	E_{AS}	54	mJ
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 To 150	$^\circ\text{C}$
Thermal Resistance			
Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Ambient	R_{thJA}	80	$^\circ\text{C/W}$

Specifications T _J = 25°C, unless otherwise noted						
Parameter	Symbol	Test Conditions	Value			Unit
			Min.	Typ.	Max.	
Static Parameters						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	20	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V	--	--	1	μA
Gate-Source Leakage	I _{GSS}	V _{GS} = ±12V	--	--	±100	nA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.5	0.7	0.9	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 4.5V, I _D = 3A	--	11.4	14.3	mΩ
		V _{GS} = 2.5V, I _D = 3A	--	13.5	17.1	
Forward Transconductance	g _{FS}	V _{DS} =5V,I _D =6A	--	50	--	S
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 10V, f = 1.0MHz	--	1140	--	pF
Output Capacitance	C _{oss}		--	165	--	
Reverse Transfer Capacitance	C _{rss}		--	110	--	
Total Gate Charge	Q _g	V _{DD} = 4.5V, I _D = 6A, V _{GS} = 10V	--	12.5	--	nC
Gate-Source Charge	Q _{gs}		--	1.2	--	
Gate-Drain Charge	Q _{gd}		--	2.7	--	
Turn-on Delay Time	t _{d(on)}	V _{DD} = 4.5V, I _D = 3A, R _G = 3Ω	--	2.7	--	ns
Turn-on Rise Time	t _r		--	3	--	
Turn-off Delay Time	t _{d(off)}		--	37	--	
Turn-off Fall Time	t _f		--	7	--	
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I _S	T _C = 25°C	--	--	6	A
Body Diode Voltage	V _{SD}	T _J = 25°C, I _{SD} = 3A, V _{GS} = 0V	--	--	1.2	V

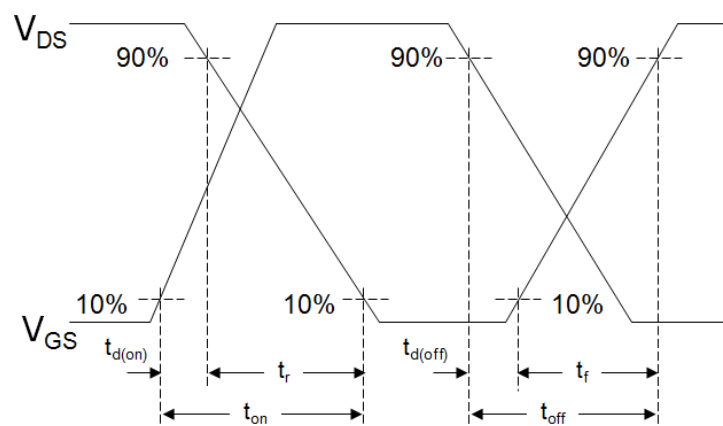
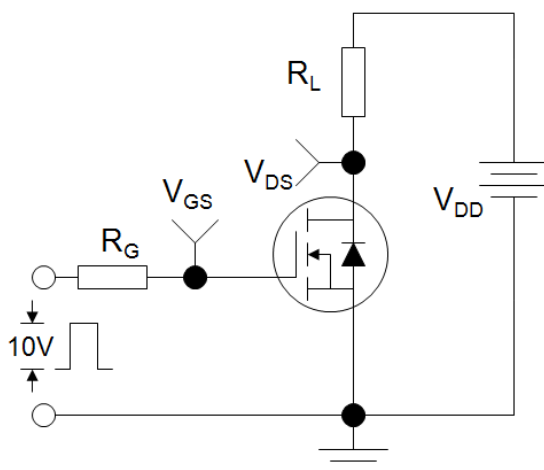
Notes

1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. Identical low side and high side switch with identical R_G
3. EAS condition : $T_J=25^{\circ}\text{C}$, $V_{DD}=20V, V_G=10V, L=0.5mH, R_g=25\Omega$

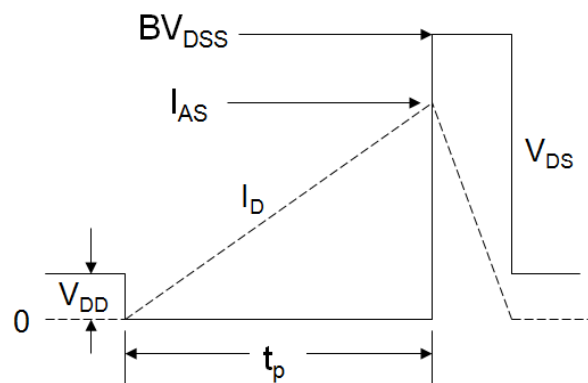
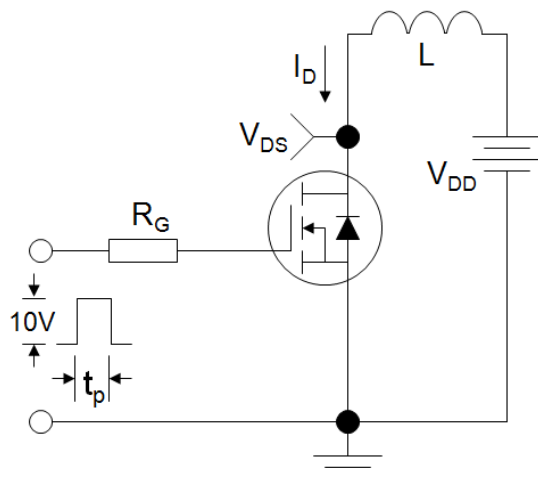
Gate Charge Test Circuit



Switch Time Test Circuit



EAS Test Circuit



Typical Characteristics $T_J = 25^\circ\text{C}$, unless otherwise noted

Figure 1. Output Characteristics

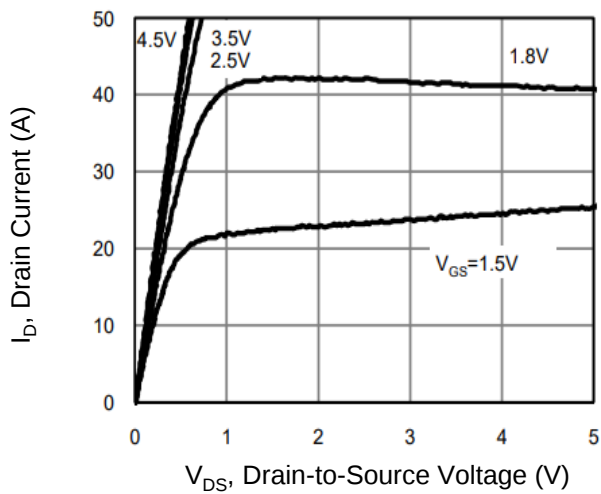


Figure 2. Transfer Characteristics

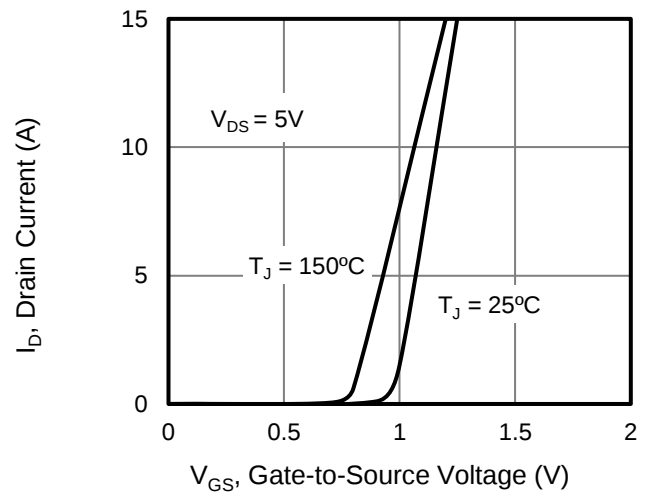


Figure 3. Drain Source On Resistance

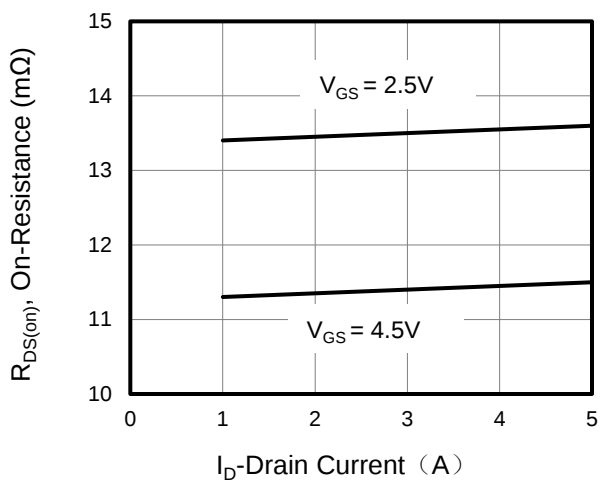


Figure 4. Gate Charge

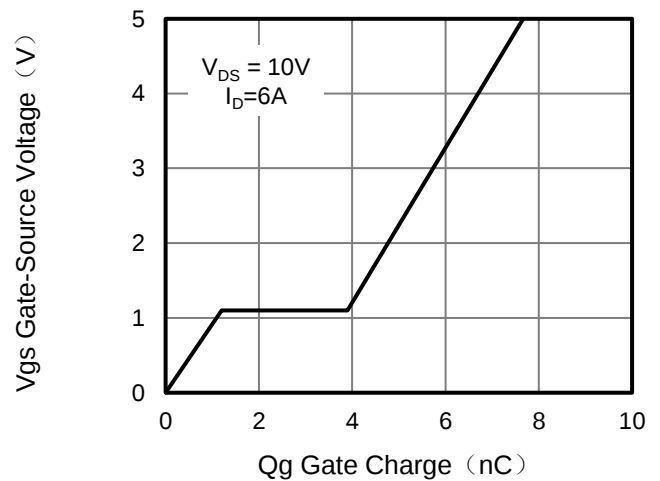


Figure 5. Capacitance vs Vds

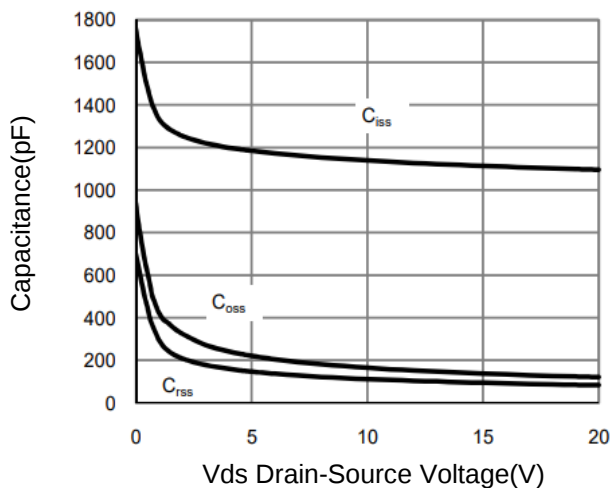
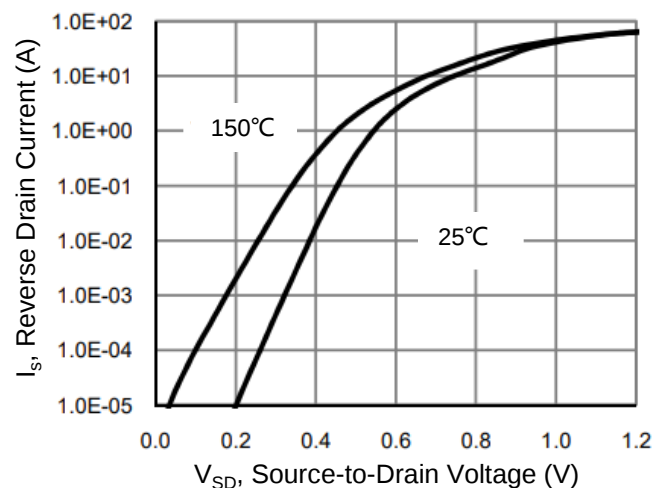


Figure 6. Source-Drain Diode Forward



Typical Characteristics $T_J = 25^\circ\text{C}$, unless otherwise noted

Figure 7. Drain-Source On-Resistance

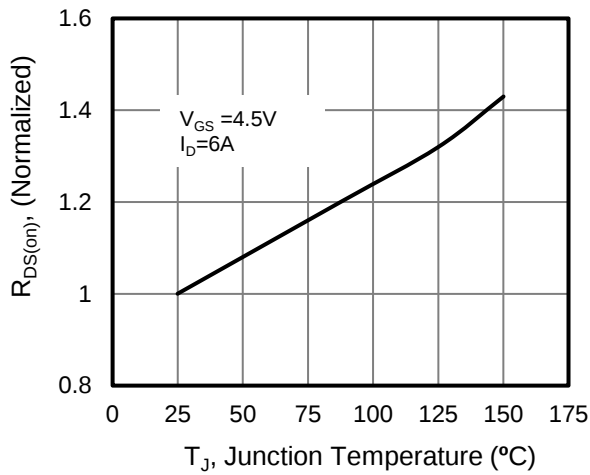


Figure 8. Safe Operation Area

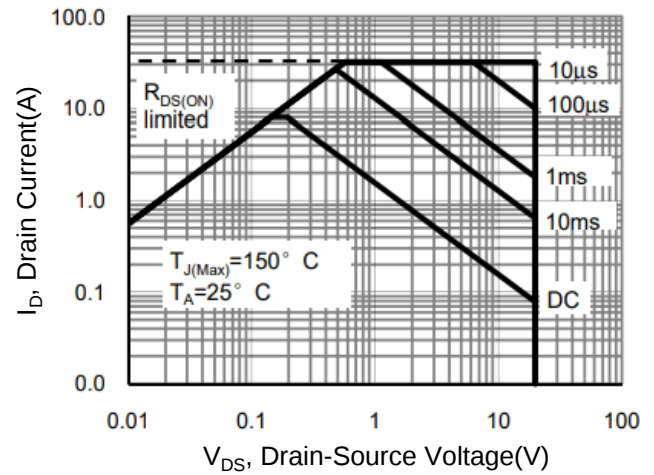
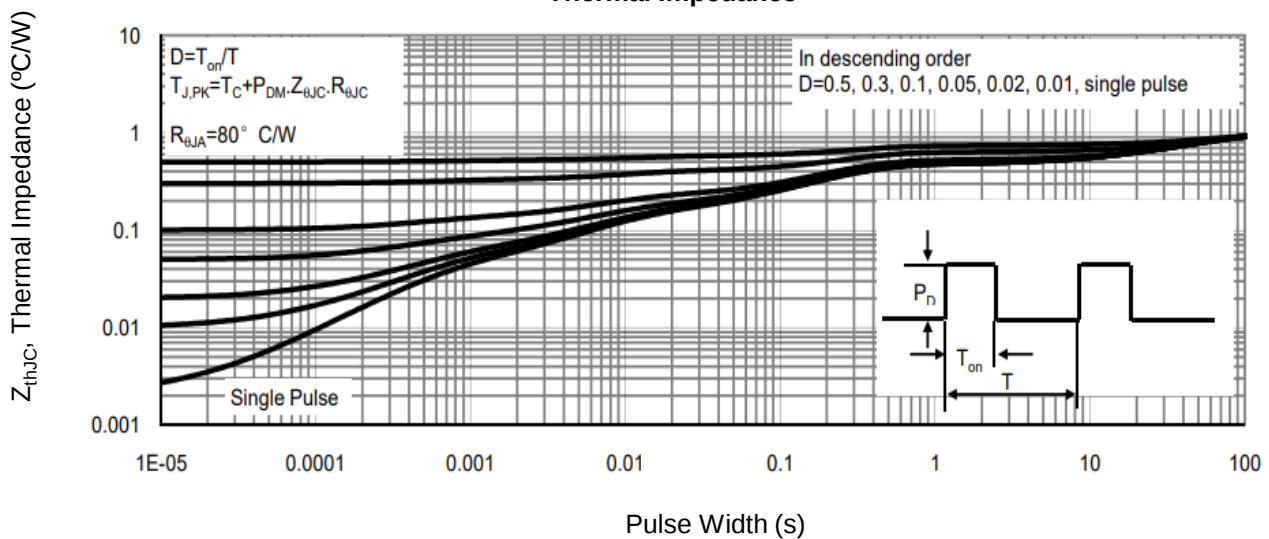
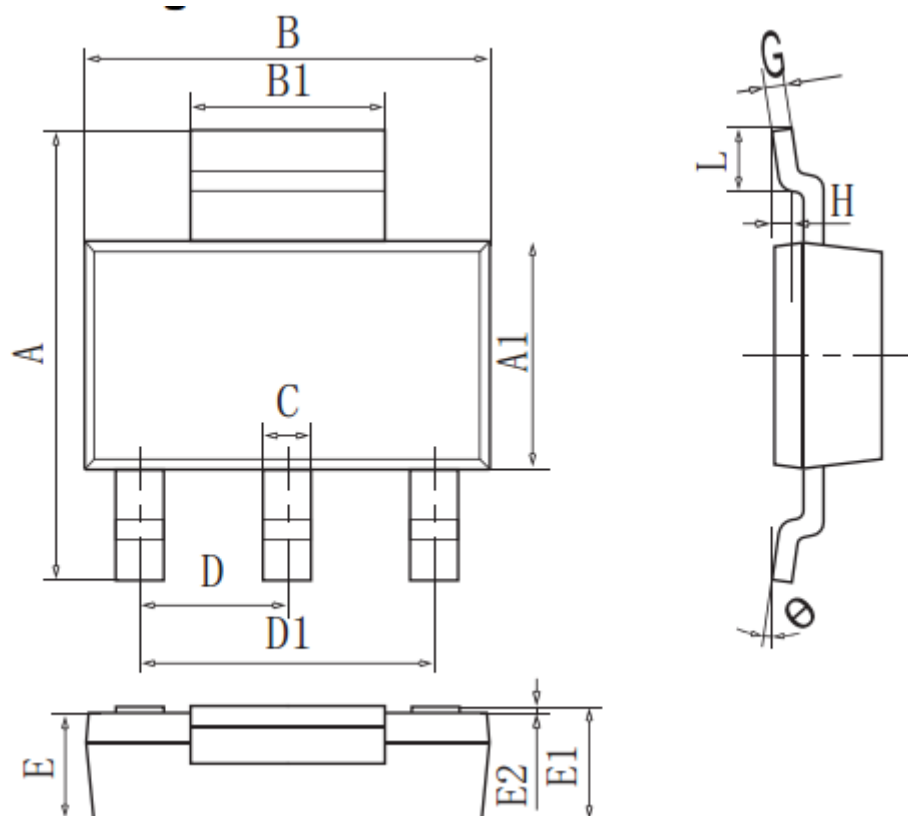


Figure 9. Normalized Maximum Transient Thermal Impedance



SOT-223-3L Package Information



DIM	MIN	NOM	MAX
A	6.80	7.00	7.20
A1	3.30	3.50	3.70
B	6.40	6.60	6.80
B1	2.96	3.00	3.10
C	0.66	0.70	0.80
D	2.25	2.30	2.35
D1	4.60REF		
E	1.50	1.60	1.70
E1	1.65REF		
E2	0.02	0.06	0.10
G	0.255	0.305	0.355
H	0.25GAUGR		
L	0.90	-	-
θ	0°	-	10°
All Dimensions in mm			