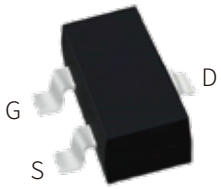
FEATURES

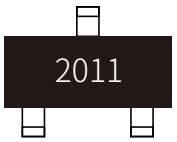
- V_{DS} = 20V , I_D = 15A
- $R_{DS(ON)}$ =9.3mΩ(Typ)@ V_{GS}=4.5V
- $R_{DS(ON)}$ =12mΩ(Typ)@ V_{GS} =2.5V



SOT-23

APPLICATION

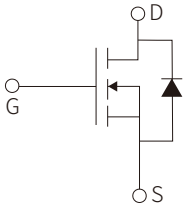
- PWM application
- Load switch



Marking

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003



Schematic Symbol

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate Threshold Voltage	V_{GS}	±12	V
Drain Current @ Stead State T_A=25°C	I_D	15	A
Pulsed Drain Current [A]	I_{DM}	51	A
Total Power Dissipation @T_A=25°C	P_D	2.5	W
Thermal Resistance Junction- to- Ambient [B]	$R_{\theta JA}$	108	°C/W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Parameter						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	20			V
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±12V,V_{DS}=0V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V,T_C=25°C			1	μA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	0.5	0.8	1.1	V
Drain-Source On–State Resistance	$R_{DS(on)(FT)}$	V_{GS}=4.5V,I_D=12A		9.3	12	mΩ
		V_{GS}=2.5V,I_D=8A		12	17	
Diode Forward Voltage(Note 3)	V_{DS}	V_{GS}=0V,I_S=6.8A			1.2	V
Diode Forward Current (Note 2)	I_S				6.8	A
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=10V,V_{GS}=0V,f=1MHz		2000		pF
Output Capacitance	C_{oss}			400		pF
Reverse Transfer Capacitance	C_{rss}			180		pF
Switching Characteristics						
Turn–on Delay Time	$t_{d(on)}$	V_{DD}=10V,R_L=1.5Ω V_{GS}=4.5V,R_{GEN}=3Ω		11		ns
Turn–on Rise Time	t_r			48		ns
Turn–Off Delay Time	$t_{d(off)}$			18		ns
Turn–off Fall Time	t_f			11		ns
Total Gate Charge	Q_{gs}	V_{DS}=10V,I_D=6.8A V_{GS}=4.5V		12		nC
Gate-Source Charge	Q_{gs}			3.5		nC
Gate-Drain Charge	Q_{gd}			3.4		nC

Notes:
A. Pulse width ≤300us, duty cycle ≤2%.
B.Devive Mounted on FR-4 PCB, 1inch×0.85 inch×0.062 inch

PARAMETER CHARACTERISTIC CURVE

Figure1: Output Characteristics

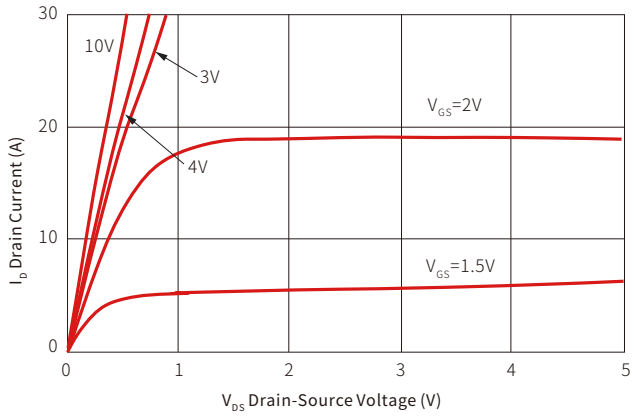


Figure2: Transfer Characteristics

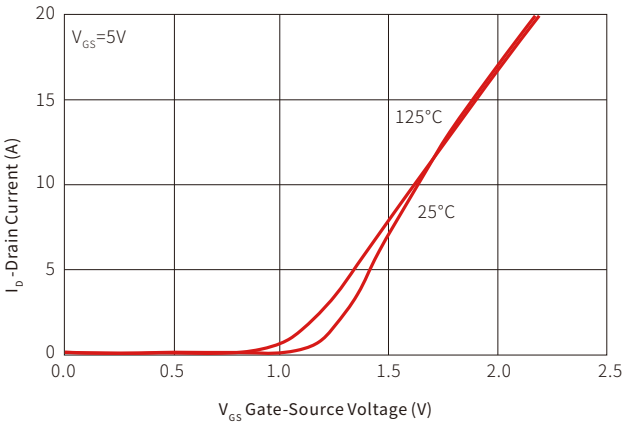


Figure3: Capacitance Characteristics

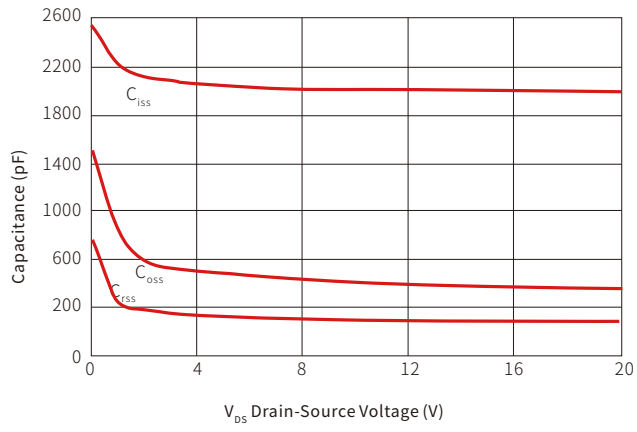


Figure 4: Gate Charge

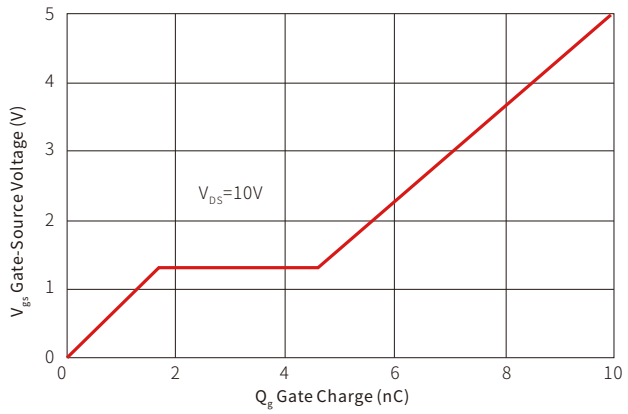


Figure 5: Drain-Source on Resistance

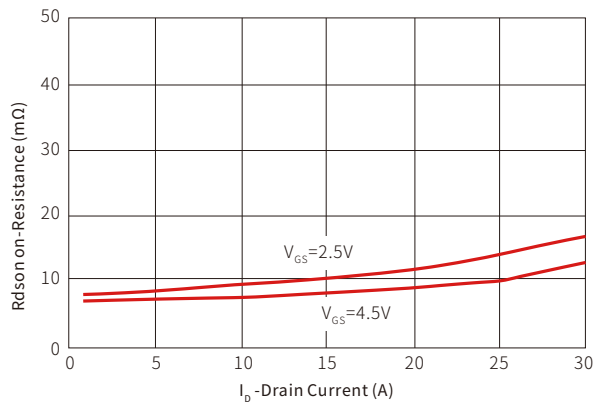


Figure 6: Drain-Source On-Resistance

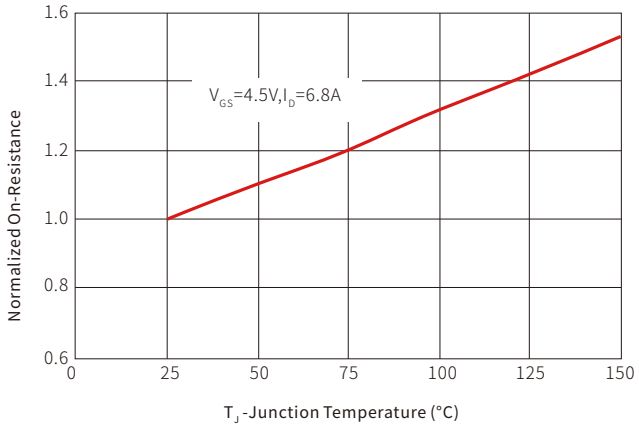


Figure 7: Safe Operation Area

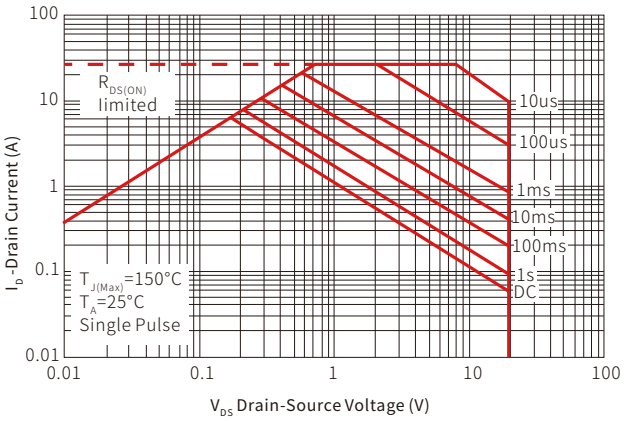
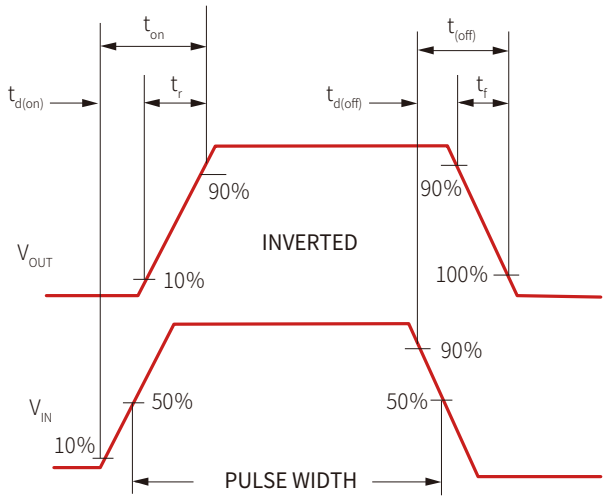
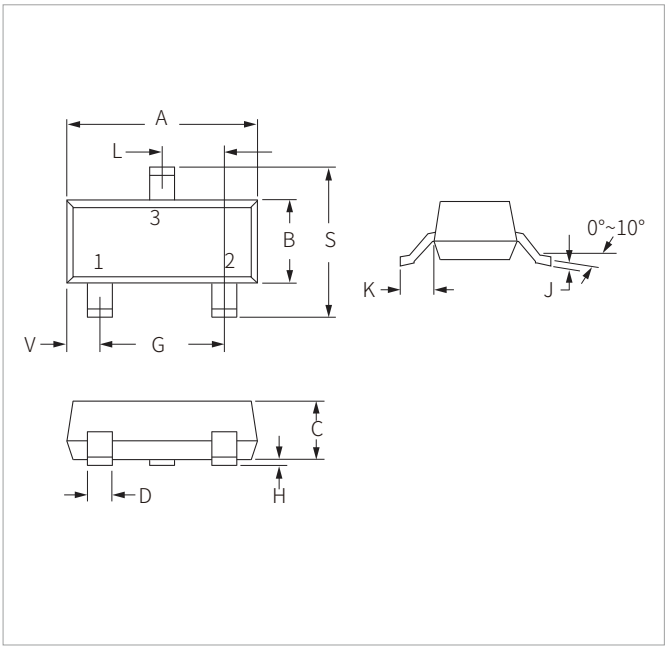


Figure 8: Switching wave

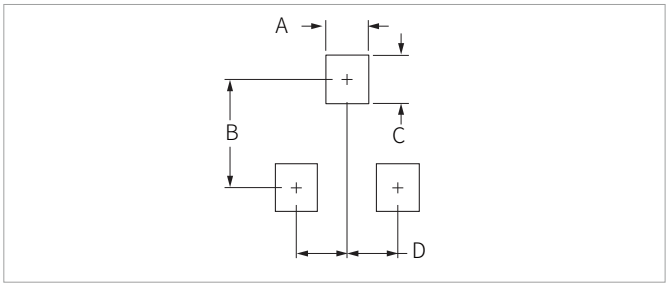


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.37	0.50	0.015	0.020
G	1.75	2.05	0.069	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.65	0.083	0.104
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SNM2314S	SOT-23	3000PCS	7”

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