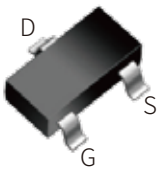
FEATURES

- V_{DS} = 20V, I_D = 3A
- $R_{DS(ON)}$ <70 mΩ @V_{GS}=4.5V
- $R_{DS(ON)}$ <90mΩ @V_{GS}=2.5V
- Lead free product is acquired
- Very low On-resistance RDS(ON)
- Fast switching
- Low crss

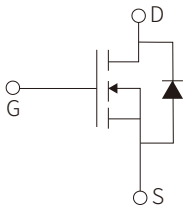


SOT-23

Marking

APPLICATION

- PWM applications
- Load switch
- Power management
- Video monitor



Schematic Symbol

APPROVALS

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

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate Threshold Voltage	V_{GSS}	±10	V
Drain Current - Continuous (Tc=25°C)	I_D	3.0	A
Drain Current - Continuous(Tc=70°C)		2.4	
Pulsed Drain Current(Note1)	I_{DM}	10	A
Power Dissipation (Tc=25°C)	P_D	1.0	W
Thermal Resistance Junction- to- Ambient	$R_{\theta JA}$	125	°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
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	20			V
Gate-source leakage current	I_{GSS}	V_{GS}=±10V,V_{DS}=0V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V			1	μA
		V_{DS}=16V,T_C=125°C			10	μA
On Characteristics						
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	0.45		1.1	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS}=4.5V,I_D=3A		50	70	mΩ
		V_{GS}=2.5V,I_D=2.0A		72	90	mΩ
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=10V,V_{GS}=0V,f=1.0MHz		125		pF
Output Capacitance	C_{oss}			27.6		pF
Reverse Transfer Capacitance	C_{rss}			25.5		pF
Turn–on Delay Time	$t_{d(on)}$	V_{DS}=10V,I_D=3A V_{GS}=5V,R_G=6Ω R_L=2.7Ω		40		ns
Turn–on Rise Time	t_r			30		ns
Turn–Off Delay Time	$t_{d(off)}$			10		ns
Turn–off Fall Time	t_f			3.4		ns
Total Gate Charge	Q_g	V_{DS}=10V,I_D=3A V_{GS}=5V		476		nC
Gate-Source Charge	Q_{gs}			4.17		nC
Gate-Drain Charge	Q_{gd}			0.6		nC
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Curren	I_S				3	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}				6	A
Drain to Source Diode Forward Voltage	V_{SD}	V_{GS}= 0V, I_{SD}=3A,T_J= 25°C			1.2	V

PARAMETER CHARACTERISTIC CURVE

Figure1: Output Characteristic

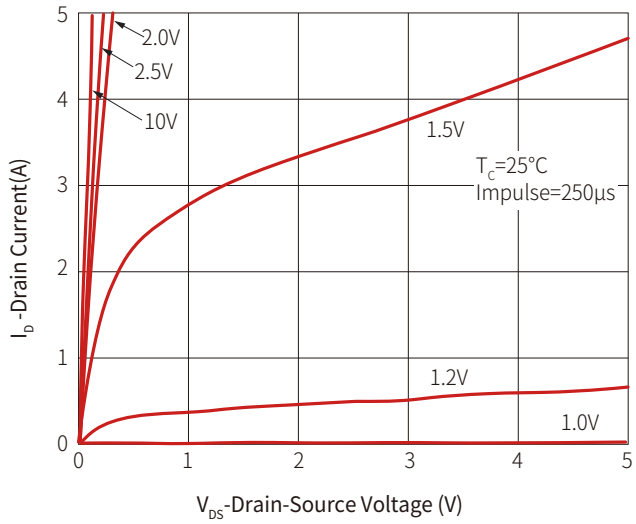


Figure2: Transfer Characteristic

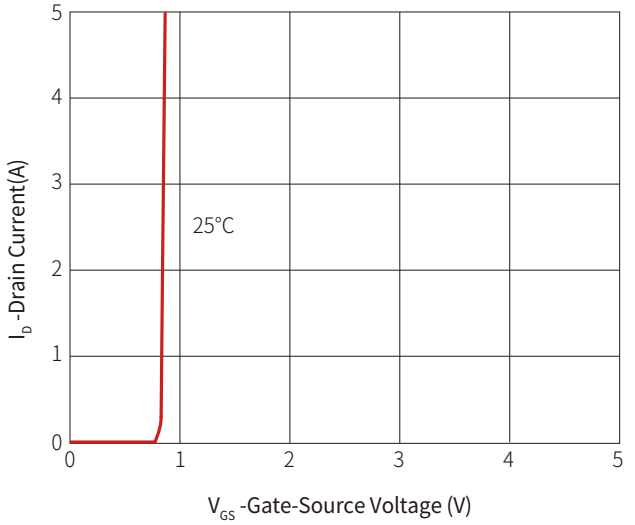


Figure3: On-Resistance Variation vs Drain Current and Gate Voltage

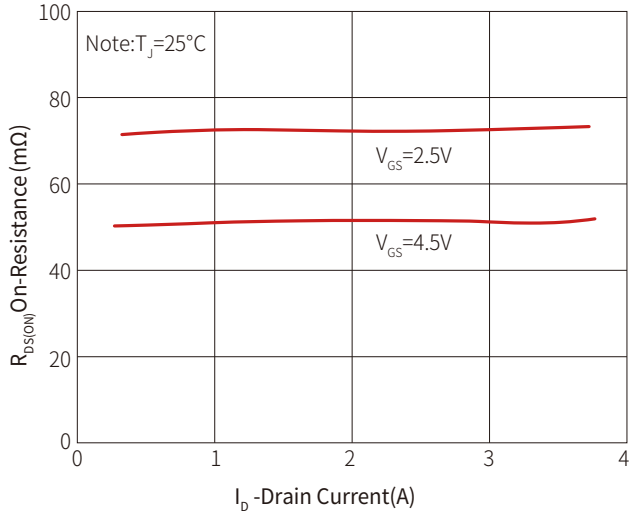


Figure 4: Body Diode Forward Voltage Variation with Source Current and Temperature

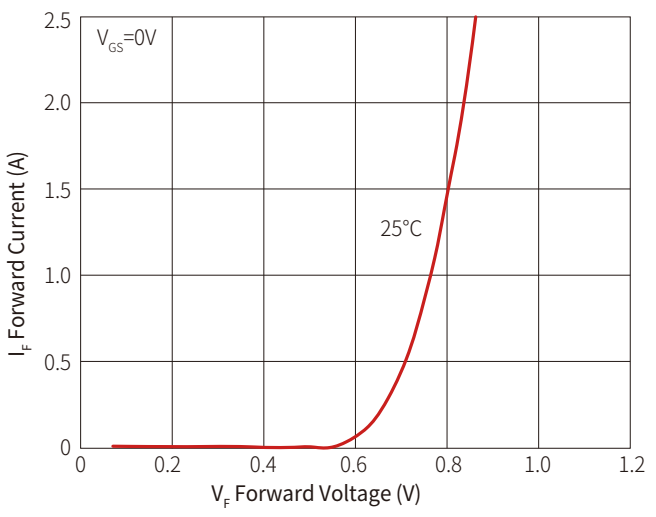


Figure 5: Capacitance Characteristics

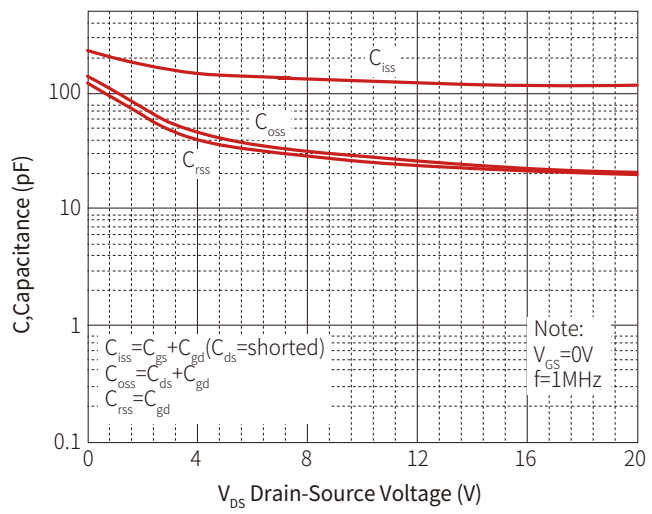


Figure 6: Gate Charge Characteristics

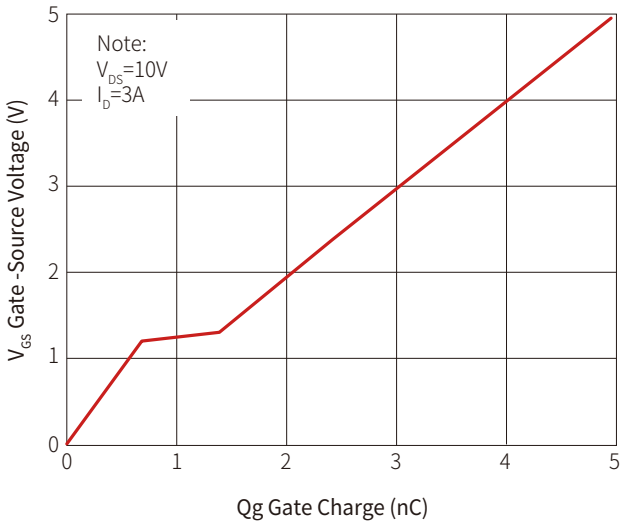


Figure 7: Breakdown Voltage Variation vs Gate-Voltage

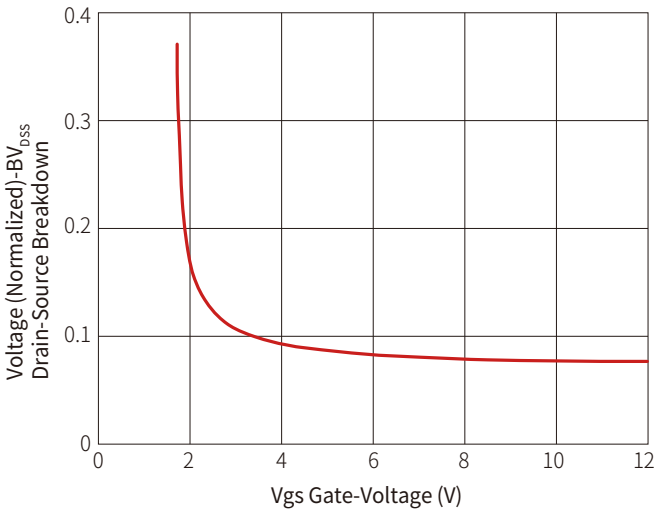


Figure 8: On-Resistance Variation vs Gate-Voltage

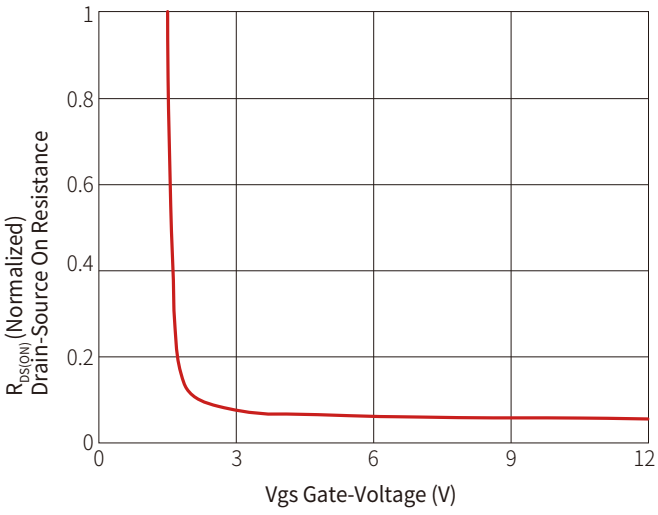


Figure 9: Maximum Safe Operating Area

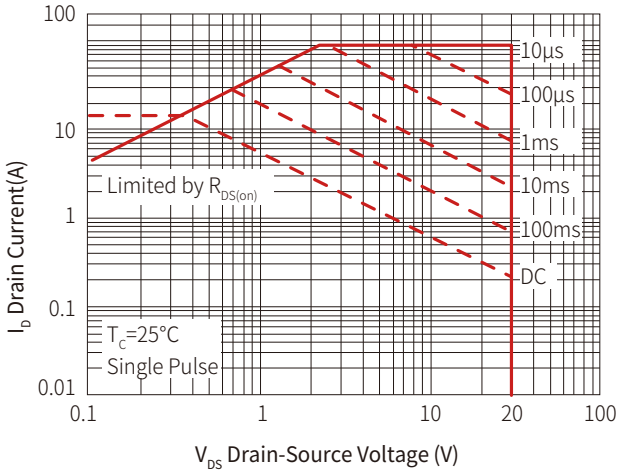
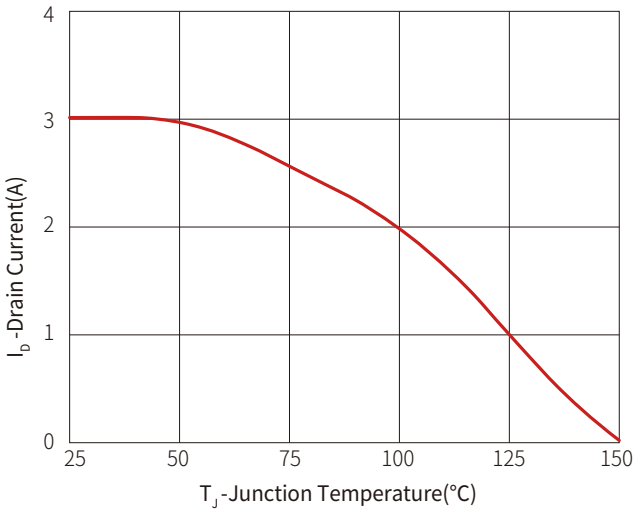
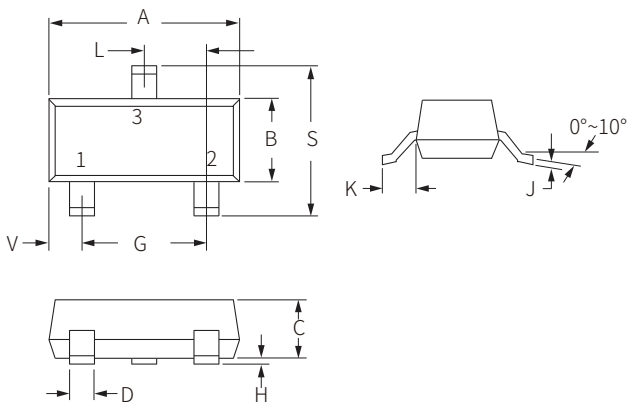


Figure 10: Maximum PContinuous Drain Currentvs Case Temperature

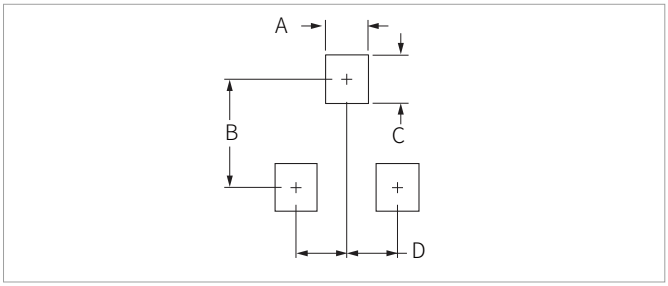


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.60	0.047	0.063
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
SNM2302AS	SOT-23	3000PCS	7”

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