AS2319

P-Channel Enhancement Mode MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-40V	85mΩ@-10V	-3.2A
	100mΩ@-4.5V	

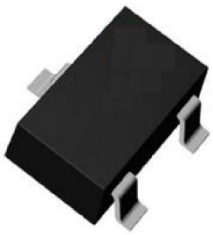
Feature

- Trench FET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

Application

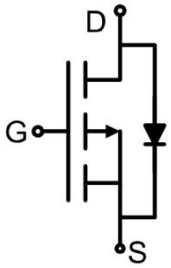
- Load Switch for Portable Devices
- DC/DC Converter

Package

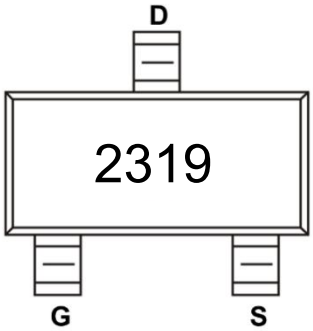


SOT-23

Circuit diagram



Marking



Absolute maximum ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-40	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-3.2	A
Pulsed Drain Current	I_{DM}	-13	A
Power Dissipation	P_D	0.4	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 ~ +150	℃

Electrical characteristics (T_A=25 °C, unless otherwise noted)

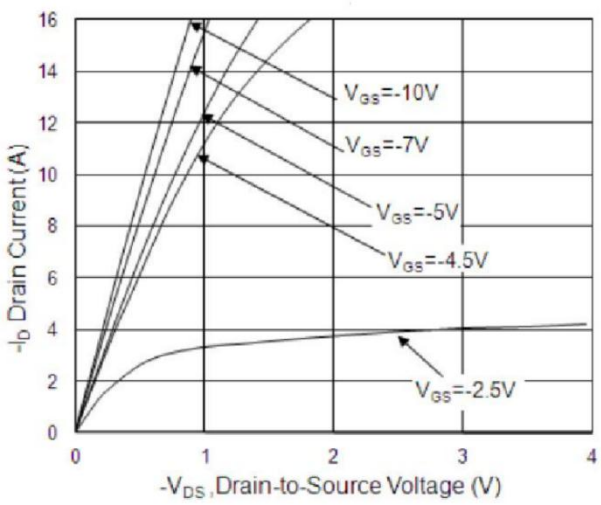
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-40			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-24V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.4	-2.5	V
Drain-source on-resistance[1]	$R_{DS(on)}$	V_{GS} =-10V, I_D =-3A		65	85	mΩ
		V_{GS} =-4.5V, I_D =-2A		85	100	
Dynamic characteristics[2]						
Input Capacitance	C_{iss}	V_{DS} =-15V,V_{GS} =0V,f =1MHz		620		pF
Output Capacitance	C_{oss}			65		
Reverse Transfer Capacitance	C_{rss}			53		
Total Gate Charge	Q_g	V_{DS} =-32V,V_{GS} =-4.5V, I_D =-3A		6.4		nC
Gate-Source Charge	Q_{gs}			2.1		
Gate-Drain Charge	Q_{gd}			2.5		
Turn-on delay time	$t_{d(on)}$	V_{DD}=-20V,V_{GEN}=-4.5V, I_D =-3A,R_{GEN}=3.3Ω		4.2		nS
Turn-on rise time	t_r			23		
Turn-off delay time	$t_{d(off)}$			26.8		
Turn-off fall time	t_f			20.6		
Source-Drain Diode characteristics						
Diode Forward voltage	V_{SD}	V_{GS} =0V, I_S=-1A			-1.2	V

Notes:

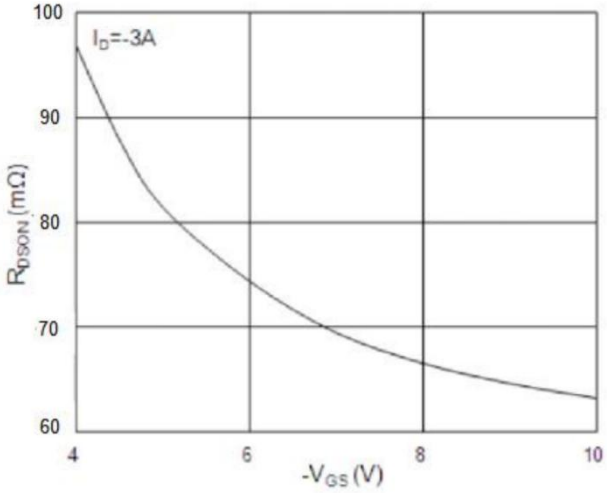
1) Pulse Test: Pulse Width < 300μs, Duty Cycle ≤2%.

2) Guaranteed by design, not subject to production testing.

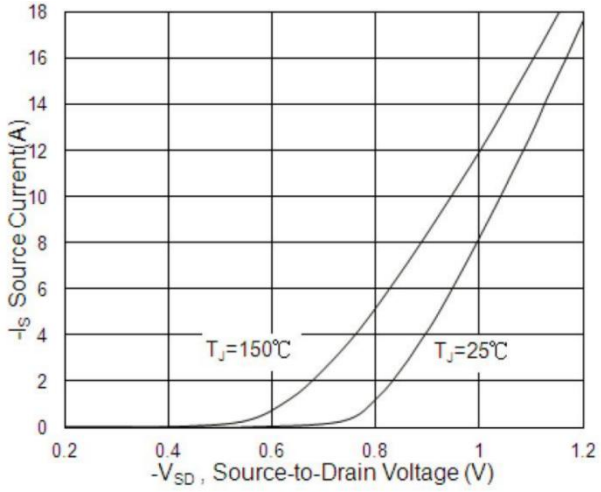
Typical Characteristics



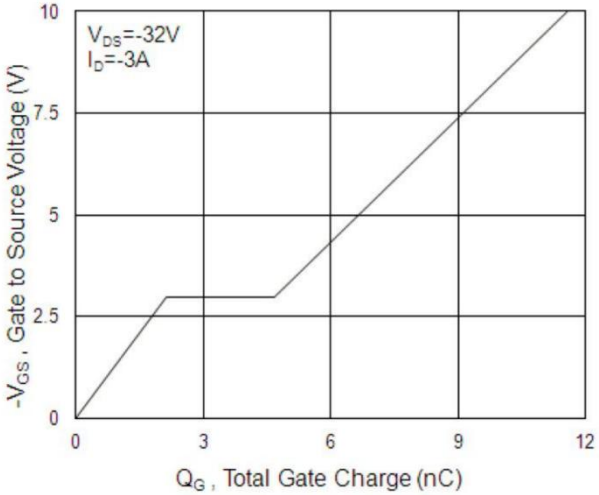
Typical Output Characteristics



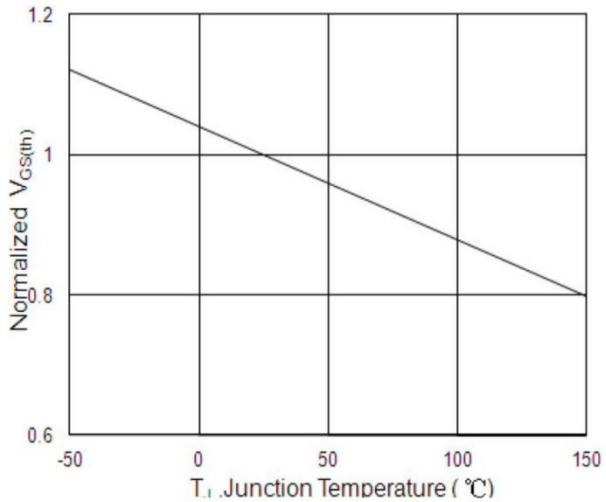
On-Resistance vs.Gate-Source



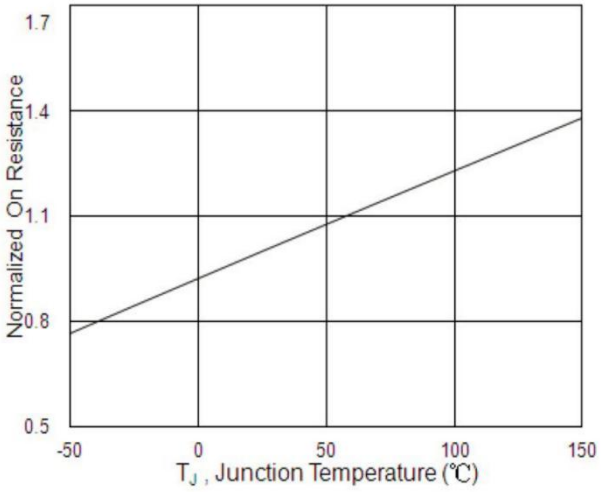
Forward Characteristics Of Reverse



Gate-Charge Characteristics

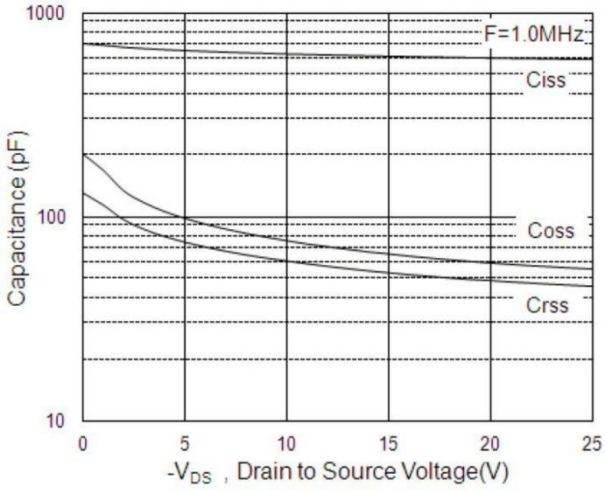


Normalized $V_{GS(th)}$vs.T_J

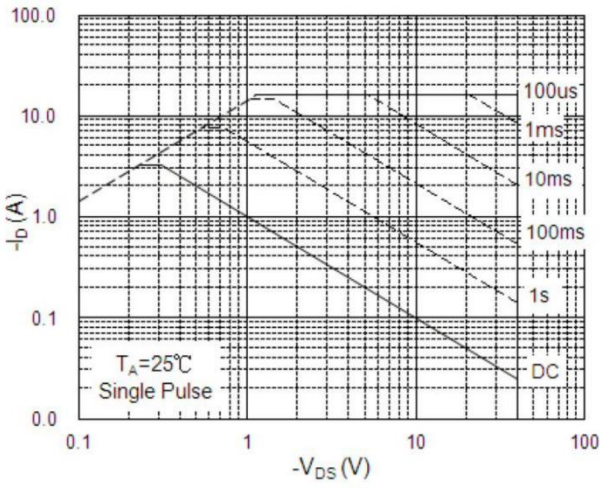


Normalized R_{DSON}vs.T_J

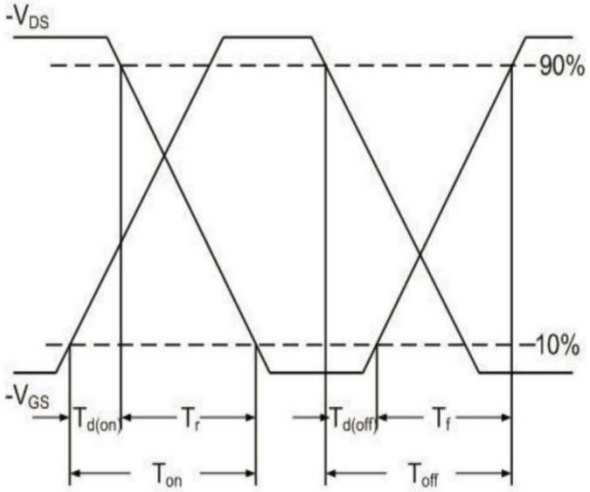
Typical Characteristics



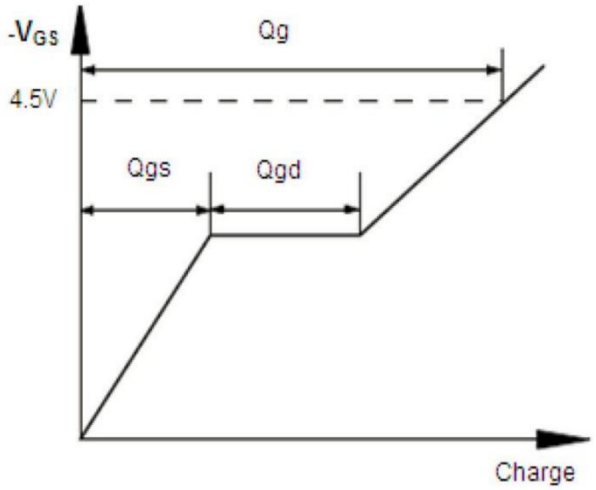
Capacitance



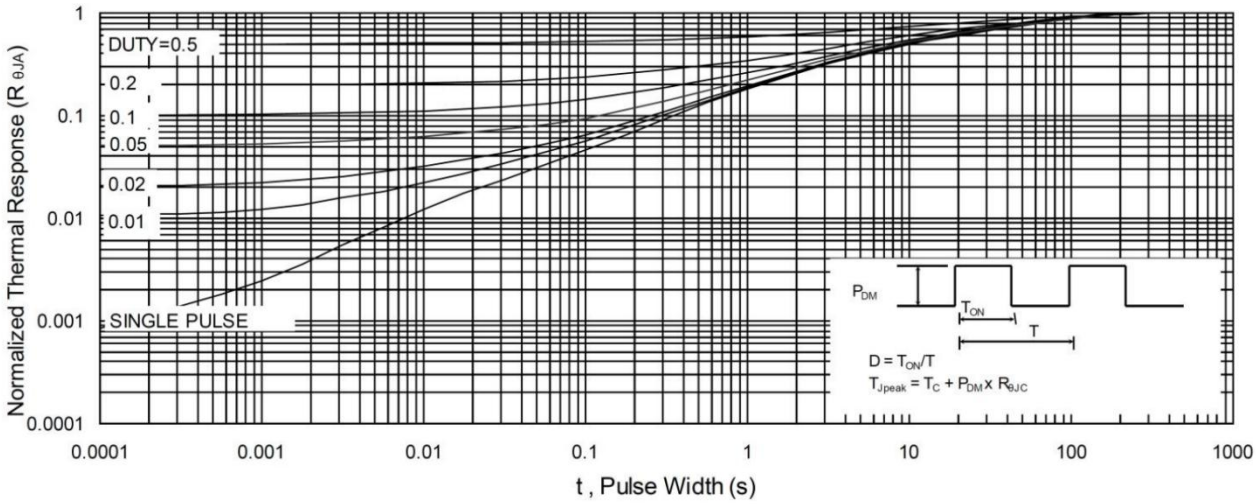
Safe Operating Area



Switching Time Waveform

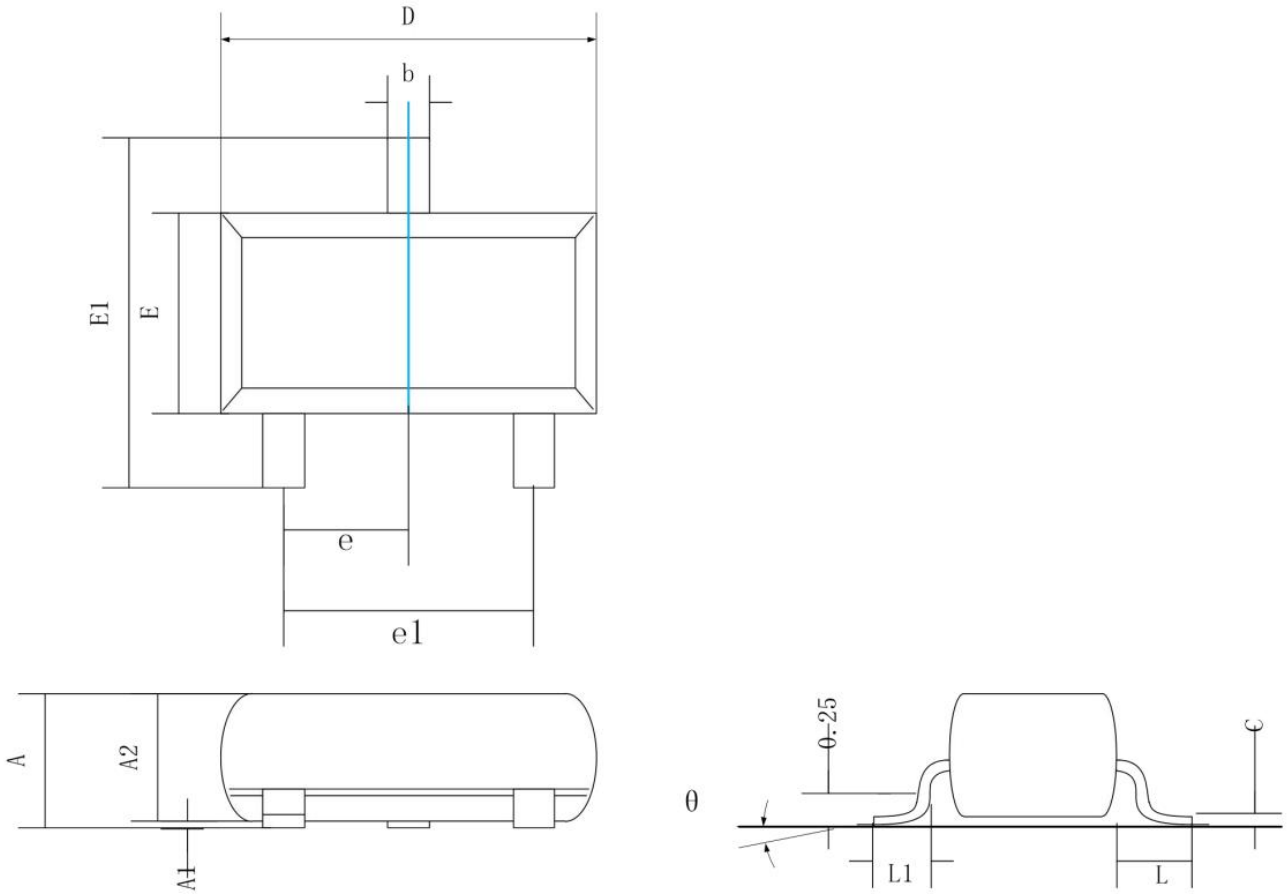


Unclamped Inductive Switching Waveform



Normalized Maximum Transient Thermal Impedance

SOT-23 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 REF.		0.037 REF.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0^0	8^0	0^0	8^0