- ★ Green Device Available
- ★ Super Low Gate Charge
- ★ Excellent CdV/dt effect decline
- ★ Advanced high cell density Trench technology

Product Summary

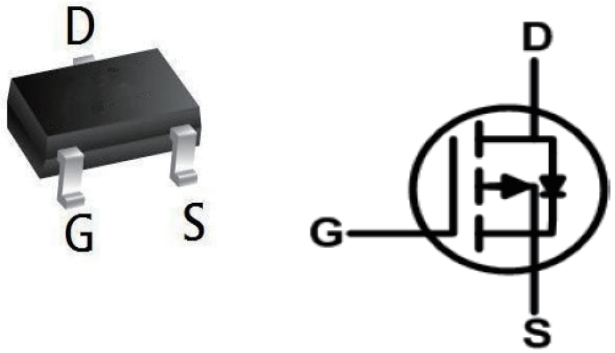
RoHS

BVDSS	RDSON	ID
-40V	63mΩ	-4A

Description

The 2319 is the high cell density trenched P-ch MOSFETs, which provides excellent RDSON and efficiency for m ost of the small power switching and load switch applications. The 2319 meets the RoHS and Green Product with full function reliability approved.

SOT23 Pin Configurations



Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
V_{DS}	Drain-Source Voltage		-40	V
V_{GS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current	T_A = 25°C	-4	A
I_{DM}	Pulsed Drain Current[1]		-20	A
P_D	Power Dissipation	T_A = 25°C	1.2	W
T_J ,T_{STG}	Operating Junction and Storage Temperature Range		-55 to 150	°C

Thermal Data

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient [2]	104	°C/W

Electrical Characteristics (T_J =25 °C unless otherwise specified)

Symbol	Parameter	Test condition	Min.	Typ.	Max.	Units
Static Characteristics						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}= 0V, I_D= -250μA	-40	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}= -40V, V_{GS}= 0V	-	-	-1	μA
I_{GSS}	Gate-Body Leakage	V_{DS}= 0V, V_{GS}= ±20V	-	-	±100	nA
$V_{GS(th)}$	Gate-Threshold Voltage	V_{DS}= V_{GS}, I_D= -250μA	-1.2	-1.5	-2.5	V
$R_{DS(on)}$	Drain-Source on-Resistance[3]	V_{GS}= -10V,I_D= -5A	-	63	85	mΩ
		V_{GS}= -4.5V,I_D= -4A	-	80	125	
Dynamic Characteristics[4]						
C_{iss}	Input Capacitance	V_{GS} = 0V ,V_{DS} = -20V, f=1.0MHz	-	553	-	pF
C_{oss}	Output Capacitance		-	50	-	
C_{rss}	Reverse Transfer Capacitance		-	42	-	
Switching Characteristics[4]						
Q_g	Total Gate Charge	V_{GS}= -10V ,V_{DS}= -20V, I_D= -5A	-	11.8	-	nC
Q_{gs}	Gate-Source Charge		-	2.2	-	
Q_{gd}	Gate-Drain Charge		-	3	-	
$t_{d(on)}$	Turn-on Delay Time	V_{DS}= -20V, V_{GS}= -10V R_L= 2.5Ω, R_G= 3Ω	-	7	-	ns
t_r	Rise Time		-	6.5	-	
$t_{d(off)}$	Turn-off Delay Time		-	24	-	
t_f	Fall Time		-	7.8	-	
Drain-Source Body Diode Characteristics						
V_{DS}	Body Diode voltage[3]	I_S= -5A,V_{GS}=0V	-	-	-1.2	V
I_S	Continuous Source Current		-	-	-4	A

Notes:
1.Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C.
2.The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
3.Pulse Test: Pulse width≤300μs, duty cycle≤2%.
4.This value is guaranteed by design hence it is not included in the production test.

Typical Electrical and Thermal Characteristics (Curves)

Figure1: Output Characteristics

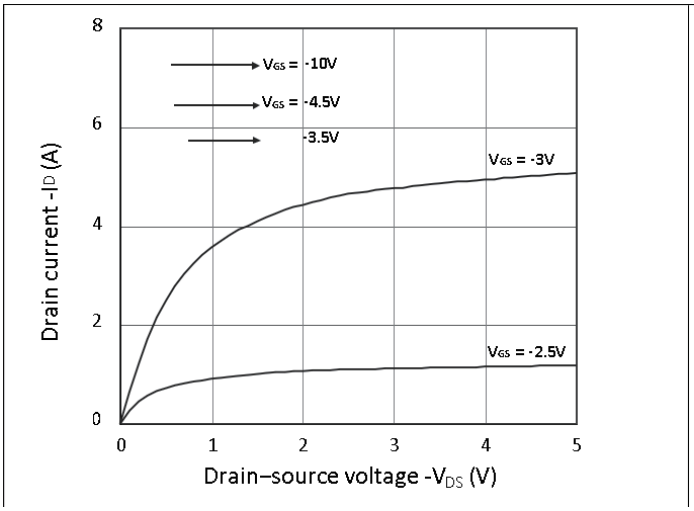


Figure 2: Typical Transfer Characteristics

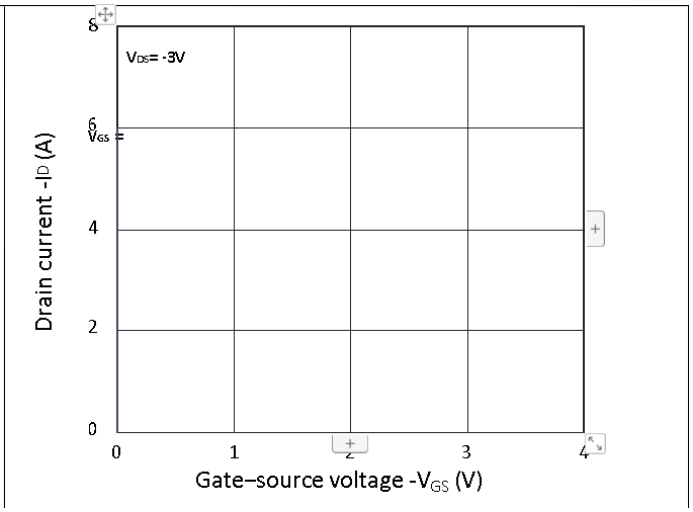


Figure 3:Forward Characteristics of Reve

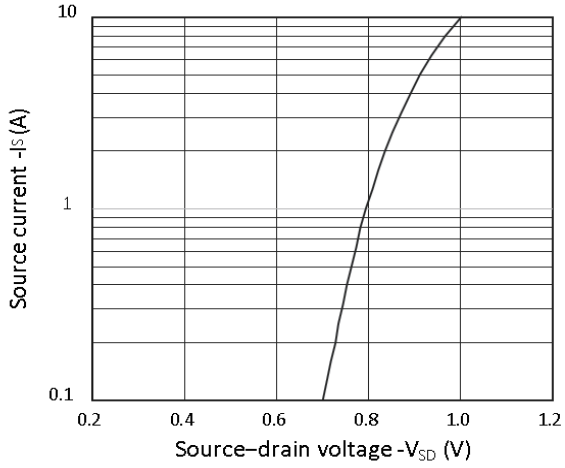


Figure 4: RDS(ON) vs. VGS

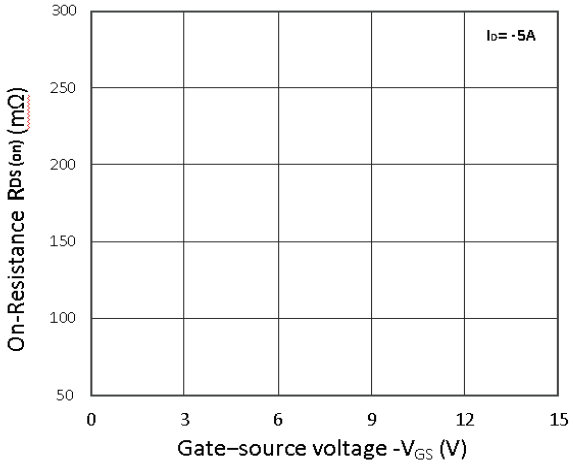


Figure 5: RDS(ON) vs. ID

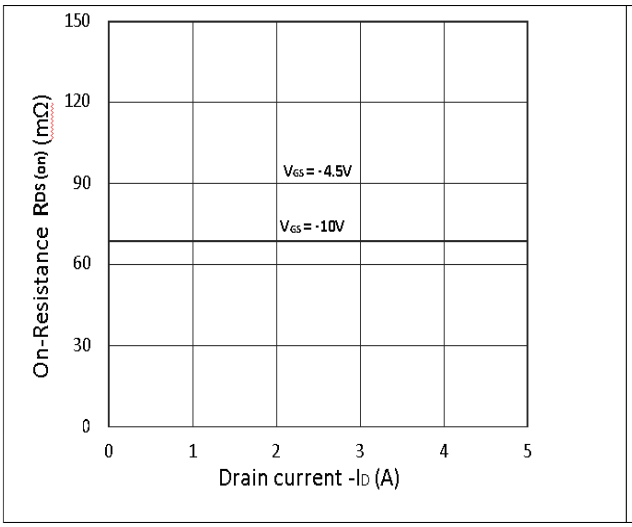
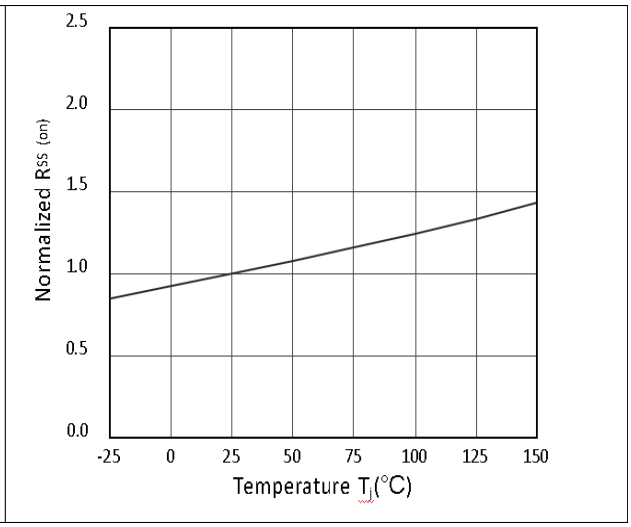


Figure 6:Normalized RDS(on) vs. Tempe



Typical Performance Characteristics

Figure 7:Capacitance Characteristics

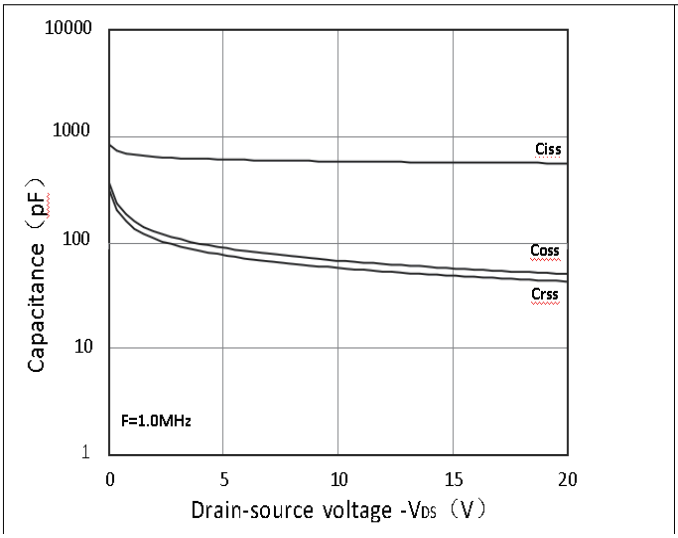
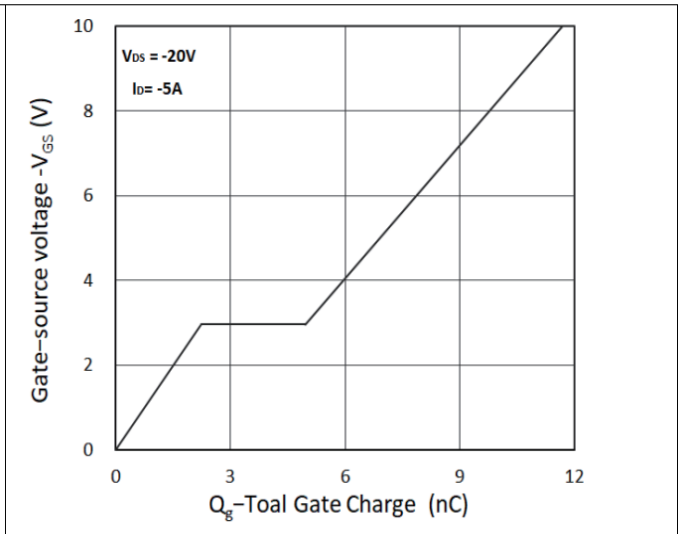
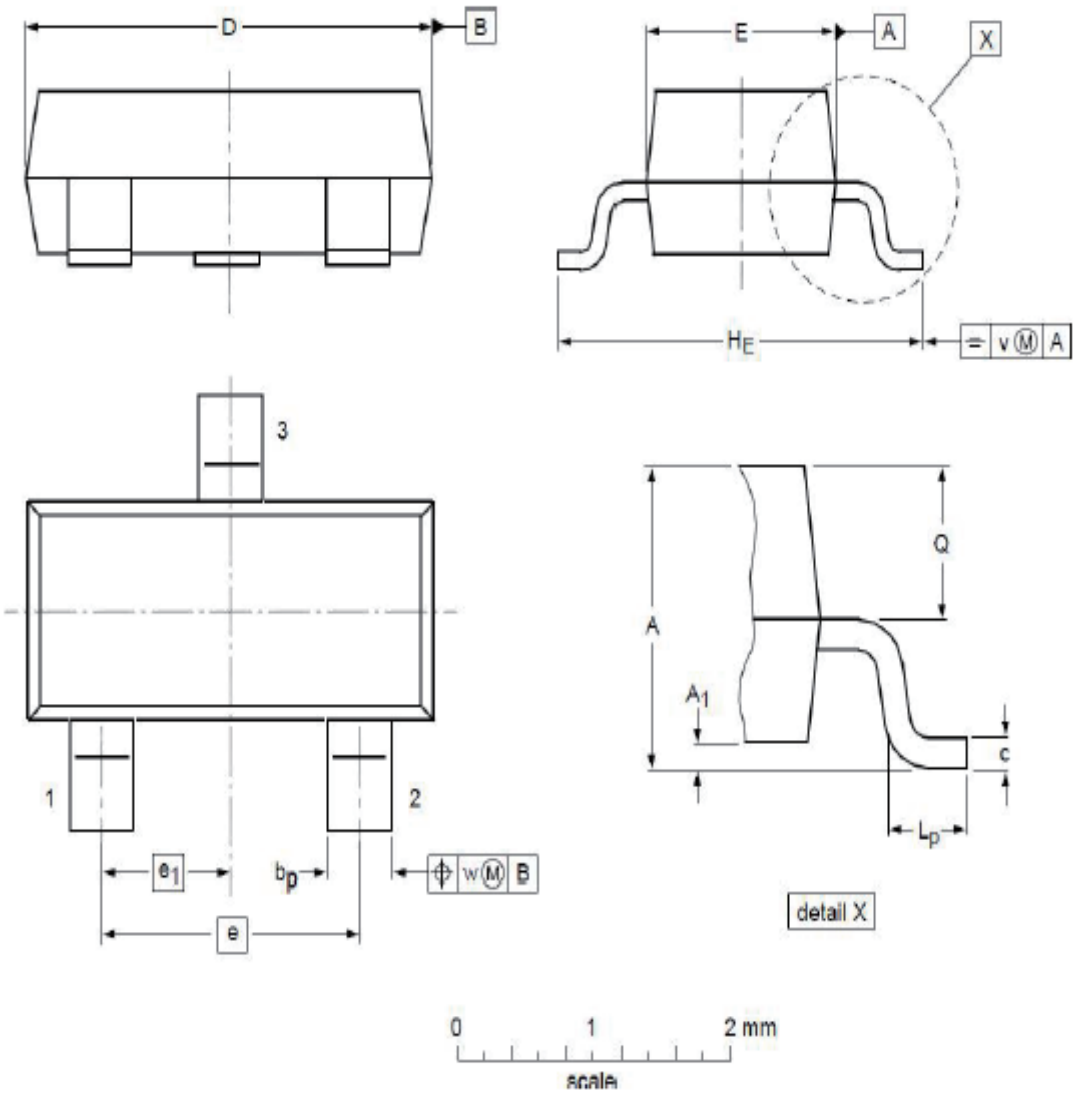


Figure 8: Gate Charge Characteristics



SOT23 Mechanical tData



DIMENSIONS (unit : mm)

Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	0.90	1.01	1.15	A_1	0.01	0.05	0.10
b_p	0.30	0.42	0.50	c	0.08	0.13	0.15
D	2.80	2.92	3.00	E	1.20	1.33	1.40
e	--	1.90	--	e_1	--	0.95	--
H_E	2.25	2.40	2.55	L_p	0.30	0.42	0.50
Q	0.45	0.49	0.55	v	--	0.20	--
w	--	0.10	--				