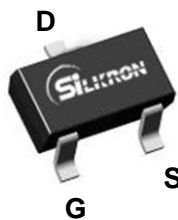
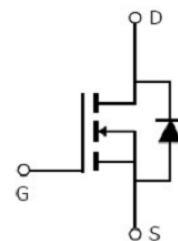


Main Product Characteristics:

V_{DSS}	100V
$R_{DS(on)}$	5Ω(typ.)
I_D	0.17A ①


SOT-23

Schematic Diagram
Features and Benefits:

- Advanced trench MOSFET process technology
- Special designed for PWM, load switching and general purpose applications
- Ultra low on-resistance with low gate charge
- Fast switching and reverse body recovery
- 150°C operating temperature


Description:

It utilizes the latest trench processing techniques to achieve the high cell density and reduces the on-resistance with high repetitive avalanche rating. These features combine to make this design an extremely efficient and reliable device for use in power switching application and a wide variety of other applications

Absolute max Rating:

Symbol	Parameter	Max.	Units
I_D @ TC = 25°C	Continuous Drain Current, V_{GS} @ 10V ①	0.17	A
I_{DM}	Pulsed Drain Current ②	0.68	
P_D @ TC = 25°C	Power Dissipation ③	225	mW
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-to-Source Voltage	± 20	V
T_J T_{STG}	Operating Junction and Storage Temperature Range	-55 to + 150	°C

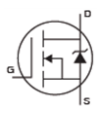
Thermal Resistance

Symbol	Characterizes	Typ.	Max.	Units
$R_{\theta JA}$	Junction-to-ambient (t ≤ 10s) ④	—	556	°C/W

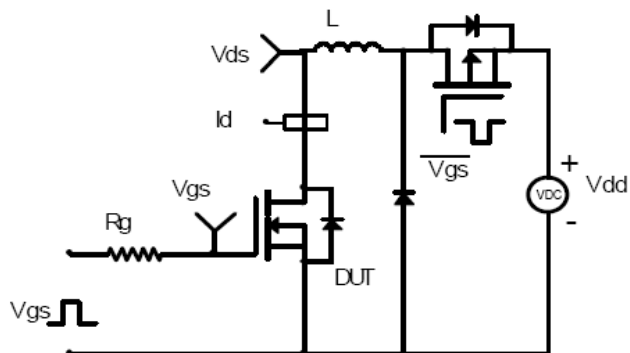
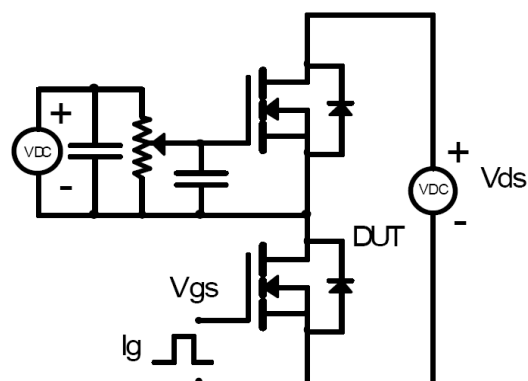
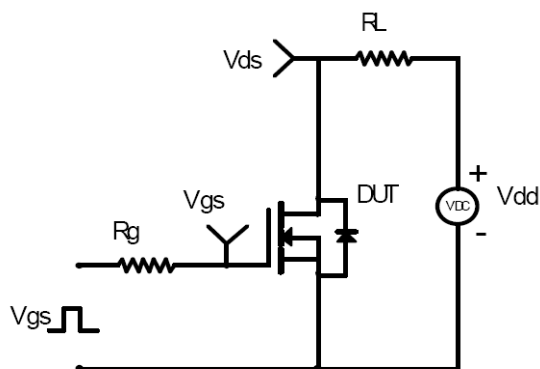
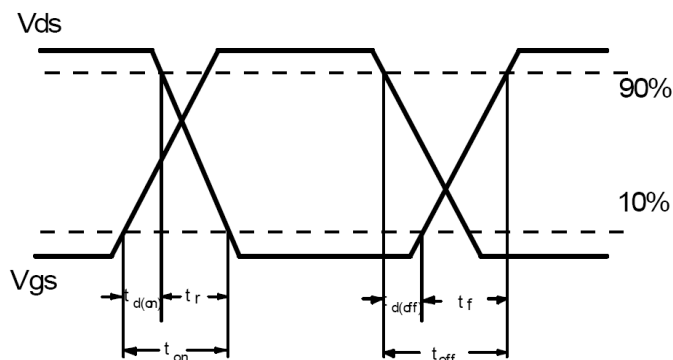
Electrical Characterizes @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source breakdown voltage	100	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
$R_{DS(on)}$	Static Drain-to-Source on-resistance	—	5	6	Ω	$V_{GS}=10V, I_D=100mA$
$V_{GS(th)}$	Gate threshold voltage	0.8	—	2	V	$V_{DS} = V_{GS}, I_D=1mA$
I_{DSS}	Drain-to-Source leakage current	—	—	15	μA	$V_{DS}=100V, V_{GS}=0V$
I_{GSS}	Gate-to-Source forward leakage	—	—	50	nA	$V_{GS}=20V$
		—	—	-50		$V_{GS}=-20V$
$t_{d(on)}$	Turn-on delay time	—	20	—	ns	$V_{GS}=10V, V_{DS}=30V,$ $R_{GEN}=50\Omega,$
$t_{d(off)}$	Turn-Off delay time	—	40	—		
C_{iss}	Input capacitance	—	20	—	pF	$V_{GS}=0V,$ $V_{DS}=25V,$ $f=1MHz$
C_{oss}	Output capacitance	—	9	—		
C_{rss}	Reverse transfer capacitance	—	4	—		

Source-Drain Ratings and Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode) ①	—	—	0.17	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	0.68	A	
V_{SD}	Diode Forward Voltage	—	—	1.3	V	

Test Circuits and Waveforms

EAS Test Circuit:

Gate Charge Test Circuit:

Switching Time Test Circuit:

Switching Waveforms:


Notes:

- ① The maximum current rating is limited by bond-wires.
- ② Repetitive rating; pulse width limited by max. junction temperature.
- ③ The power dissipation PD is based on max. junction temperature, using junction-to-case thermal resistance.
- ④ The value of $R_{\theta JA}$ is measured with the device mounted on 1in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$

Typical Electrical and Thermal Characteristics

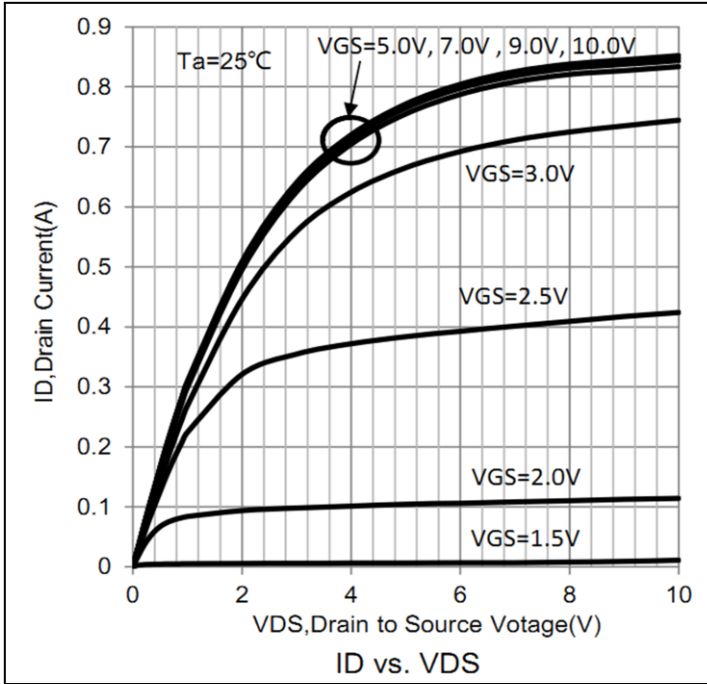


Figure 1. Typical Output Characteristics

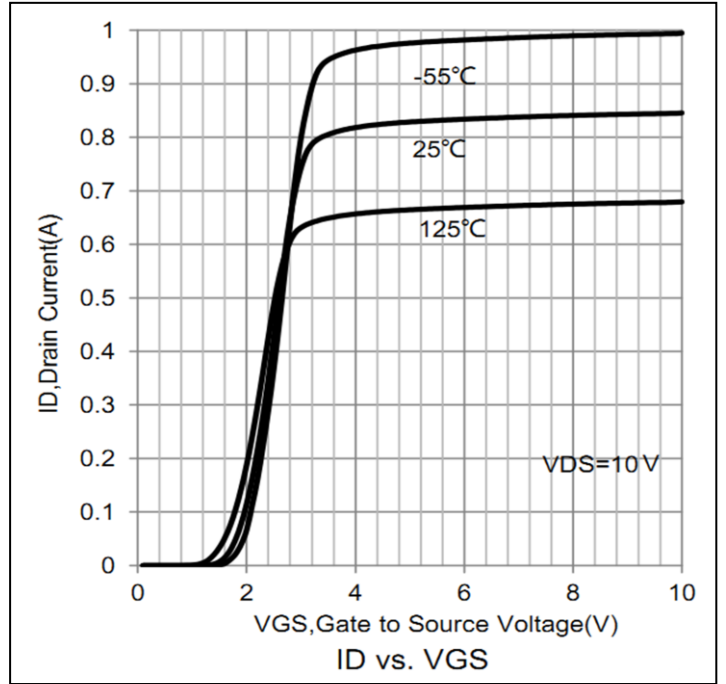


Figure 2. Typical Transfer Characteristics

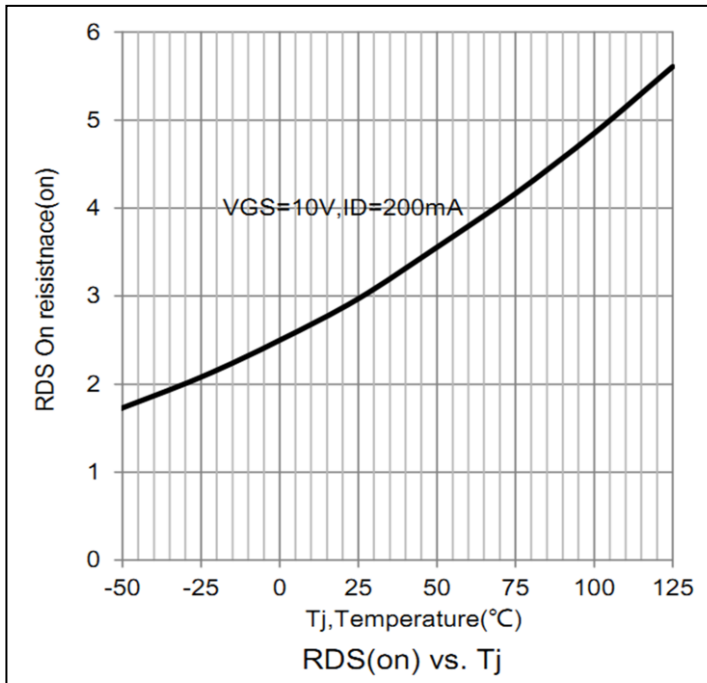


Figure 3. Normalized On-Resistance vs. Case Temperature

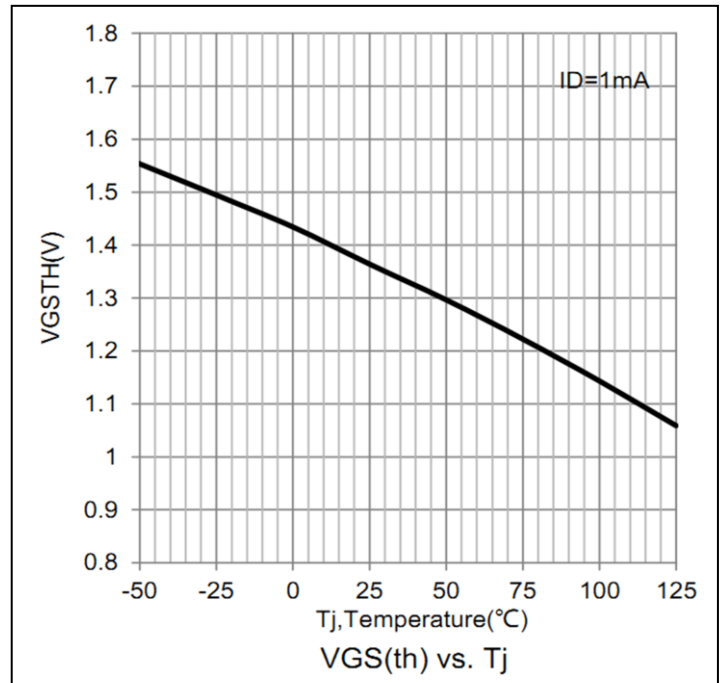
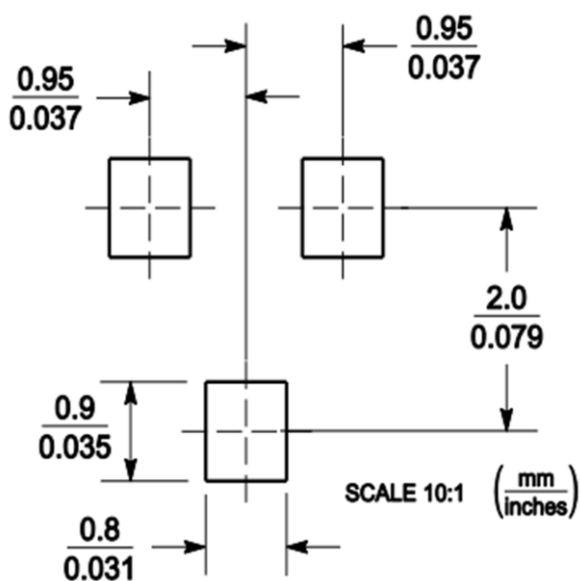
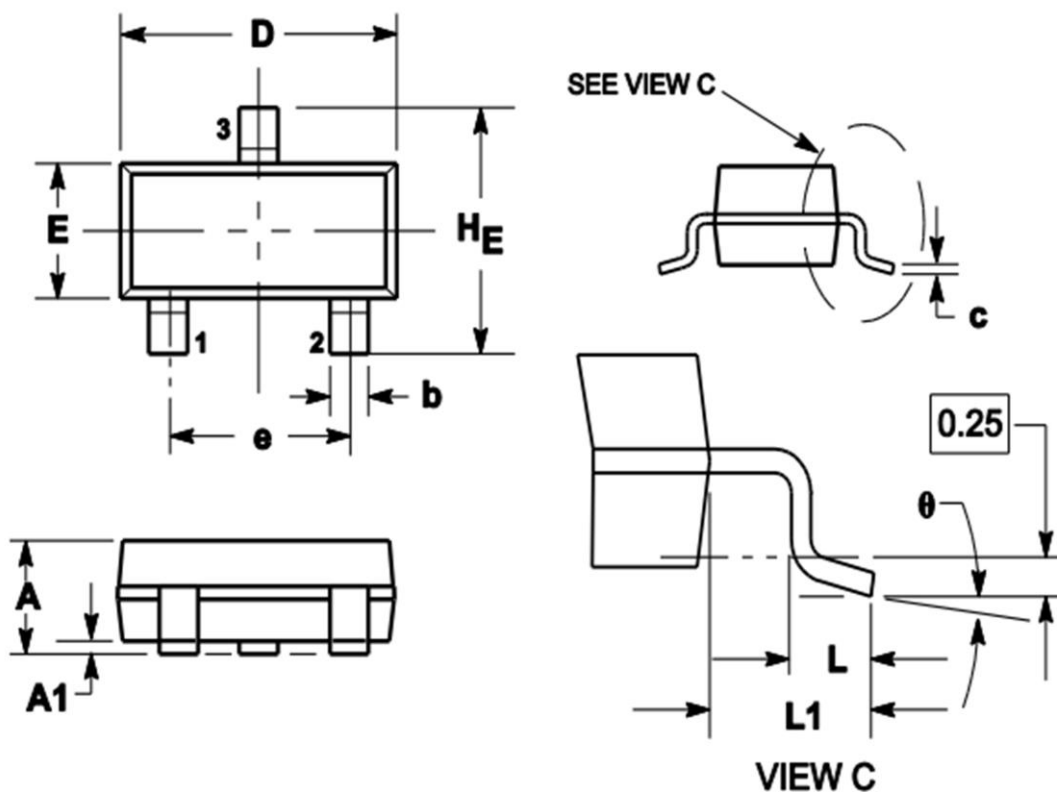


Figure 4. Gate to source cut-off voltage

Mechanical Data:


DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

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