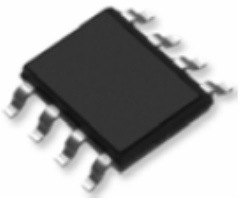
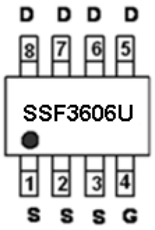
Main Product Characteristics:

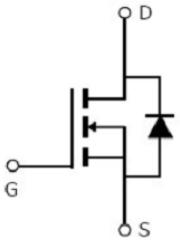
V_{DSS}	30V
R_{DS}(on)	4.8mΩ(typ.)
I_D	17A



SOP-8 top view



Marking and Pin Assignment



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℃ operating temperature

Description:

It utilizes the latest 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	17	A
I_D @ TC = 100°C	Continuous Drain Current, V_{GS} @ 10V ①	14.2	
I_{DM}	Pulsed Drain Current ②	68	
P_D @TC = 25°C	Power Dissipation ③	2	W
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-to-Source Voltage	± 20	V
T_J T_{STG}	Operating Junction and Storage Temperature Range	-55 to + 150	°C

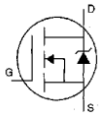
Thermal Resistance

	Parameter	Min.	Typ.	Max.	Units
$R_{\theta JA}$	Junction-to-ambient ④	—	—	62.5	

Electrical Characterizes @T_A=25℃ unless otherwise specified

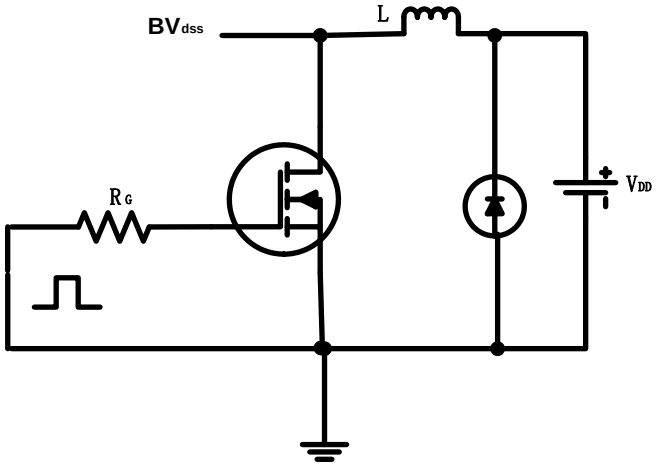
	Parameter	Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS}	Drain-to-Source breakdown voltage	30	—	—	V	V_{GS}=0V,I_D=250μA
$R_{DS(on)}$	Static Drain-to-Source on-resistance	—	4.8	6	mΩ	V_{GS}=10V,I_D=15A
		—	6.4	8.5		V_{GS}=4.5V,I_D=11.5A
$V_{GS(th)}$	Gate threshold voltage	1	—	2	V	V_{DS}=V_{GS},I_D=250μA
I_{DSS}	Drain-to-Source leakage current	—	—	1	μA	V_{DS}=30V,V_{GS}=0V
I_{GSS}	Gate-to-Source forward leakage	—	—	100	nA	V_{GS}=20V
	Gate-to-Source reverse leakage	—	—	-100		V_{GS}=-20V
Q_g	Total gate charge	—	38	—	nC	I_D=15A
Q_{gs}	Gate-to-Source charge	—	6	—		V_{DD}=15V
Q_{gd}	Gate-to-Drain("Miller") charge	—	12	—		V_{GS}=10V
$t_{d(on)}$	Turn-on delay time	—	9.6	—	nS	V_{DD}=18V
t_r	Rise time	—	8.2	—		R_L=18Ω
$t_{d(off)}$	Turn-Off delay time	—	34	—		R_G=2.2Ω
t_f	Fall time	—	9.2	—		V_{GS}=10V
C_{iss}	Input capacitance	—	1432	—	pF	V_{GS}=0V
C_{oss}	Output capacitance	—	230	—		V_{DS}=20V
C_{rss}	Reverse transfer capacitance	—	212	—		f=1.0MHZ

Source-Drain Ratings and Characteristics

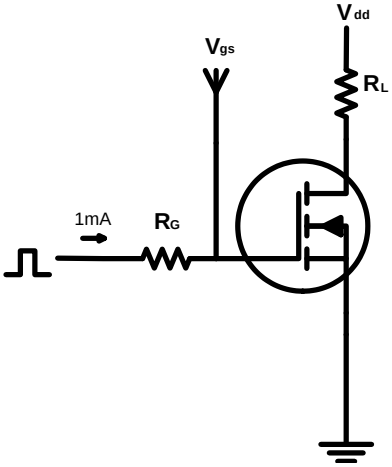
	Parameter	Min.	Typ.	Max.	Units	Test Conditions
I_S	Continuous Source Current (Body Diode) ①	—	—	17	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	68		
V_{SD}	Diode Forward Voltage	—	—	1.2	V	T_J=25℃,I_S=2.8A,V_{GS}=0V

Test circuits and Waveforms

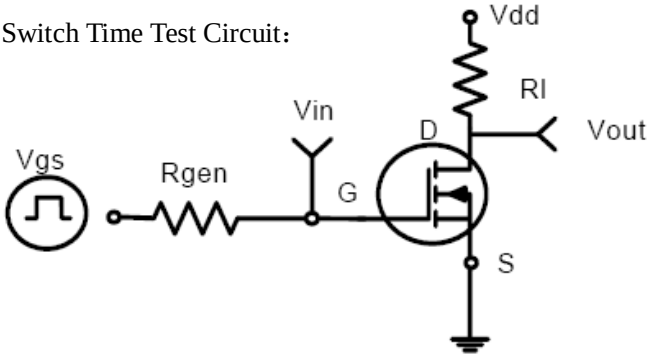
EAS test circuit:



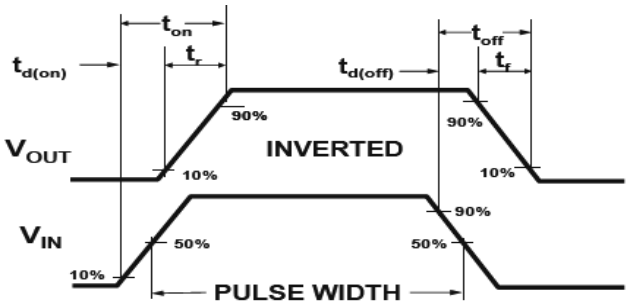
Gate charge test circuit:



Switch Time Test Circuit:



Switch Waveforms:



Notes:

①Calculated continuous current based on maximum allowable junction temperature.

②Repetitive rating; pulse width limited by max. junction temperature.

③The power dissipation P_D is based on max. junction temperature, using junction-to-case thermal resistance.

④The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with TA =25°C

Typical electrical and thermal characteristics

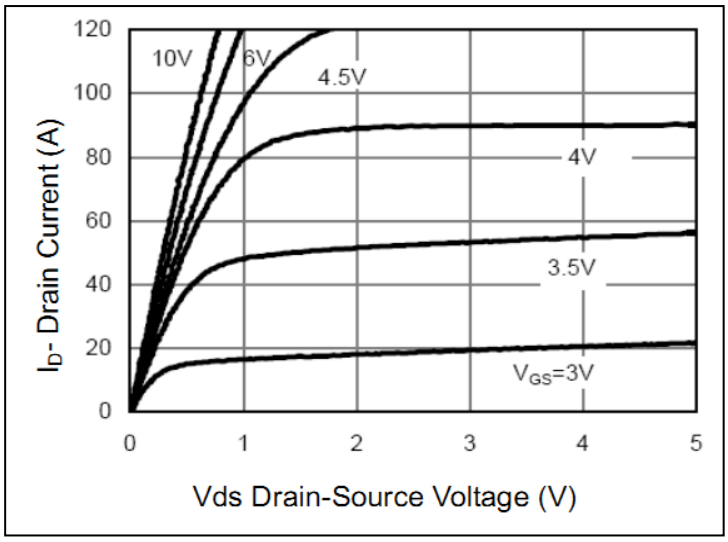


Figure 1: Typical Output Characteristics

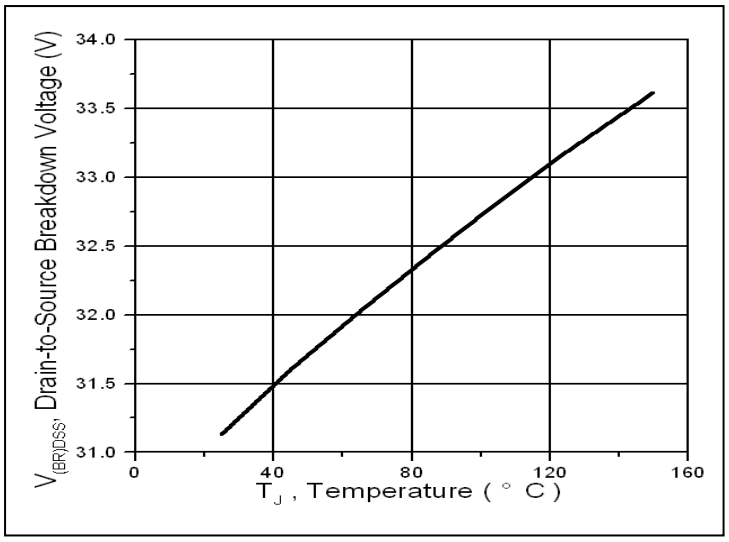


Figure 2: Drain-Source Breakdown Voltage

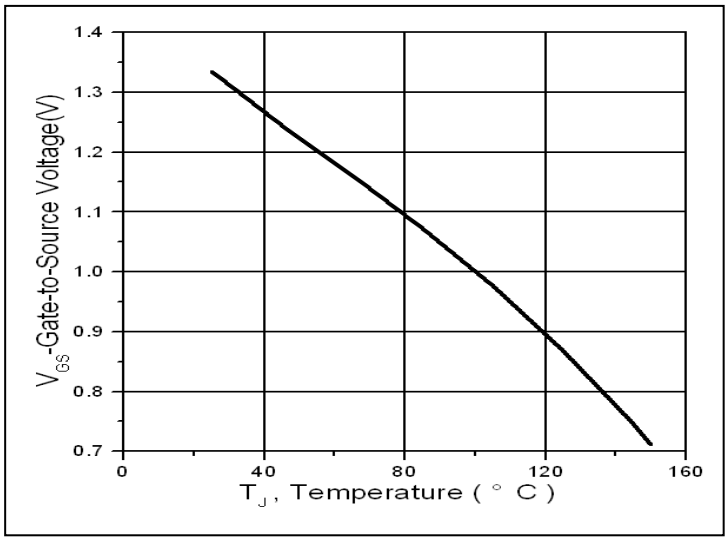


Figure 3: Gate to source cut-off voltage

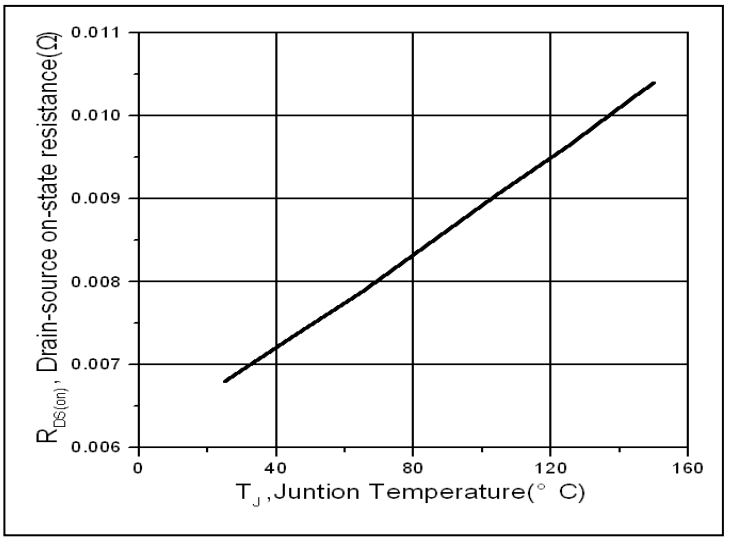


Figure 4: Normalized On-Resistance Vs. Junction

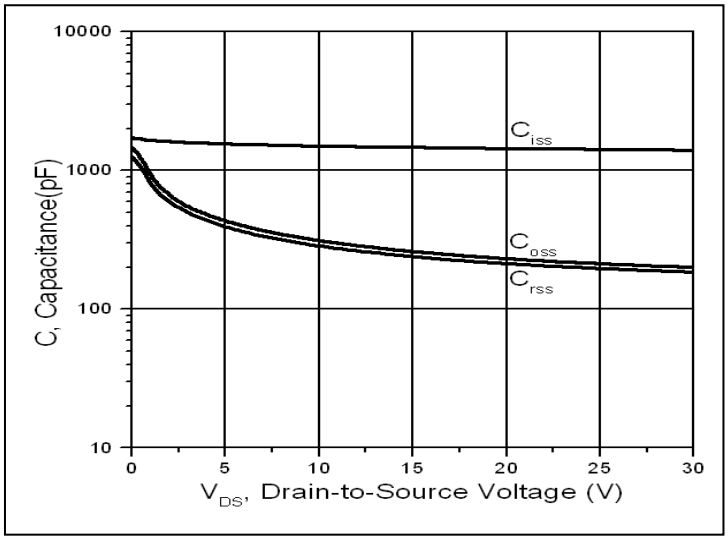
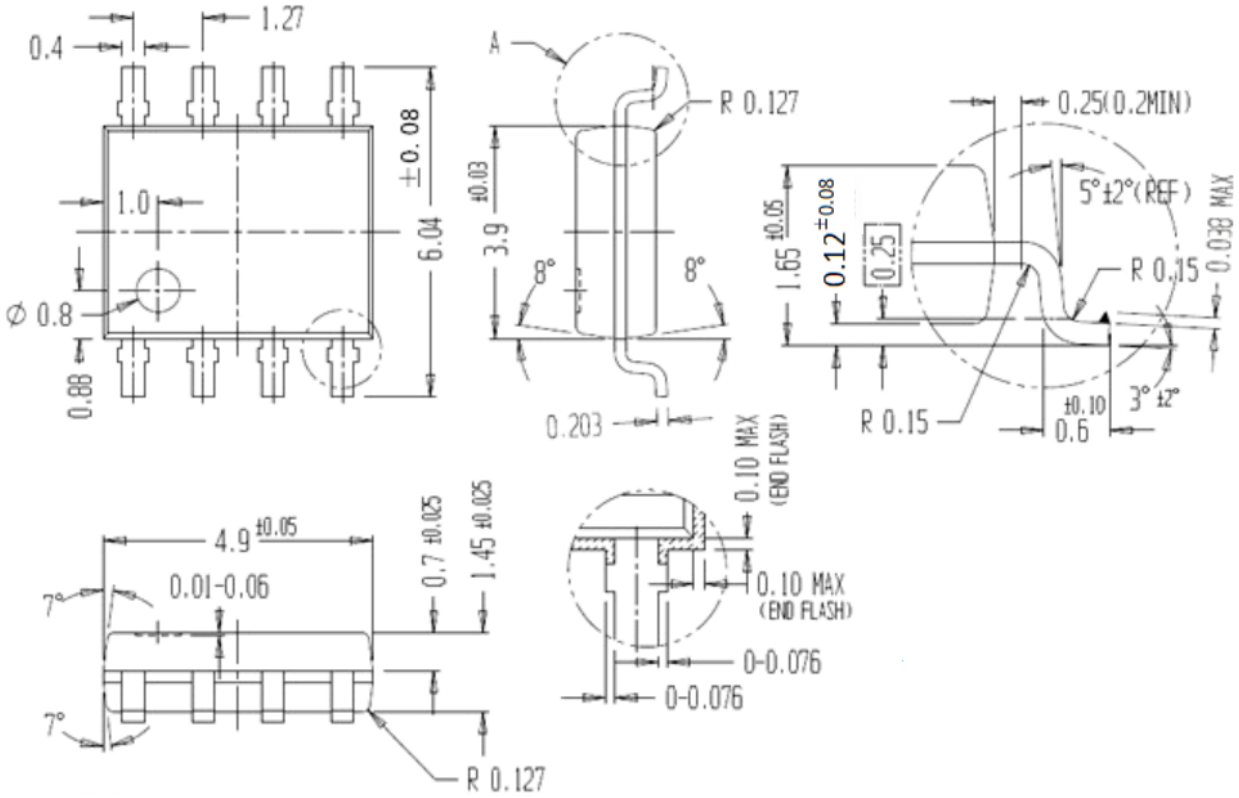


Figure 5: Typical Capacitance Vs. Drain-to-Source

Mechanical Data：

SOP-8(Unit:mm)



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Customer Service

Worldwide Sales and Service:

Sales@silikron.com

Technical Support:

Technical@silikron.com

Suzhou Silikron Semiconductor Corp.

501 , NW-20,Nanopolis, 99th Jinjihu Avenue ,Industrial Park ,Suzhou ,P.R, CHINA

TEL: (86-512) 62560688

FAX: (86-512) 62560688-8092

E-mail: Sales@silikron.com