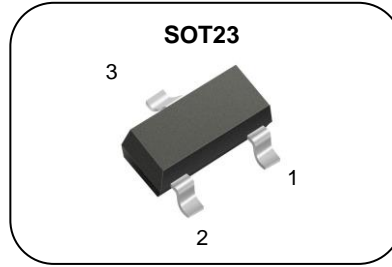


N-channel Depletion mode SOT23 MOSFET

Features

- Low $R_{DS(ON)}$ (Typ 540Ω) @ $V_{GS}=0V, I_D=3mA$
- High Switching Speed
- Application: LED, Charger

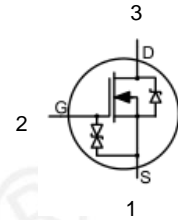


1. Source 2. Gate 3. Drain

$BV_{DSS} : 600V$

$I_D : 0.02A$

$R_{DS(ON)} : 540\Omega$



General Description

The SW601Q is an N-channel power MOSFET using SAMWIN's Advanced technology to provide the customers with high switching speed.



Order Codes

Item	Sales Type	Marking	Package	Packaging
1	SW R 601Q	Date Code	SOT23	REEL

Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{DSS}	Drain to source voltage (Note 2)	600	V
V_{DGX}	Drain to gate voltage (Note 2)	600	V
I_D	Continuous drain current (@ $T_J=25^\circ C$)	0.02	A
I_{DM}	Drain current pulsed	0.08	A
V_{GS}	Gate to source voltage	± 20	V
P_D	Total power dissipation (@ $T_J=25^\circ C$)	0.5	W
T_J	Junction temperature	+ 150	$^\circ C$
T_{STG}	Storage temperature	-55 ~ + 150	$^\circ C$

Thermal characteristics

Symbol	Parameter	Value	Unit
R_{thja}	Thermal resistance, Junction to ambient	250	$^\circ C/W$

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. $T_J=+25^\circ C \sim +150^\circ C$

Electrical characteristic ($T_j = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
Off characteristics						
BV_{DSS}	Drain to source breakdown voltage	$V_{GS}=-5V, I_D=250\mu A$	600			V
$I_{D(OFF)}$	Drain to source leakage current	$V_{DS}=600V, V_{GS}=-5V$			0.1	μA
		$V_{DS}=600V, V_{GS}=-5V, T_j=125^\circ\text{C}$			10	μA
I_{GSS}	Gate to source leakage current, forward	$V_{GS}=20V, V_{DS}=0V$			20	μA
	Gate to source leakage current, reverse	$V_{GS}=-20V, V_{DS}=0V$			-20	μA
On characteristics						
$V_{GS(OFF)}$	Gate to Source Cut Off Voltage	$V_{DS}=3V, I_D=8\mu A$	-3.0		-1.8	V
I_{DSS}	Drain to source leakage current	$V_{DS}=25V, V_{GS}=0V$	5		25	mA
$R_{DS(ON)}$	Drain to source on state resistance	$V_{GS}=0V, I_D=3mA$		540	700	Ω
G_{fs}	Forward transconductance	$V_{DS}=10V, I_D=5mA$		15.4		mS
Dynamic characteristics						
C_{iss}	Input capacitance	$V_{GS}=-5V, V_{DS}=25V, f=1MHz$		12.3		pF
C_{oss}	Output capacitance			2.6		
C_{rss}	Reverse transfer capacitance			1.8		
$t_{d(on)}$	Turn on delay time	$V_{GS}=-5\sim 5V, V_{DD}=300V, I_D=7mA, R_G=20\Omega$		4		ns
t_r	Rising time			9		
$t_{d(off)}$	Turn off delay time			14		
t_f	Fall time			84		
Q_g	Total gate charge	$V_{GS}=-5\sim 5V, V_{DD}=300V, I_D=7mA$		1.55		nC
Q_{gs}	Gate-source charge			0.12		
Q_{gd}	Gate-drain charge			0.56		

Source to drain diode ratings characteristics

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode forward voltage drop.	$I_{SD}=3mA, V_{GS}=-10V$			1.2	V

Notes: 1. Repetitive rating, pulse width limited by maximum junction temperature.
2. Pulse width $\leq 380\mu s$; duty cycle $\leq 2\%$.

Fig. 6. Switching time test circuit & waveform

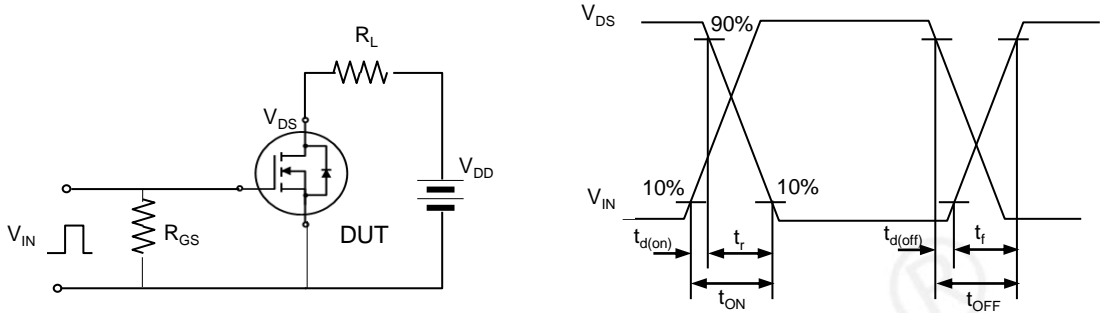
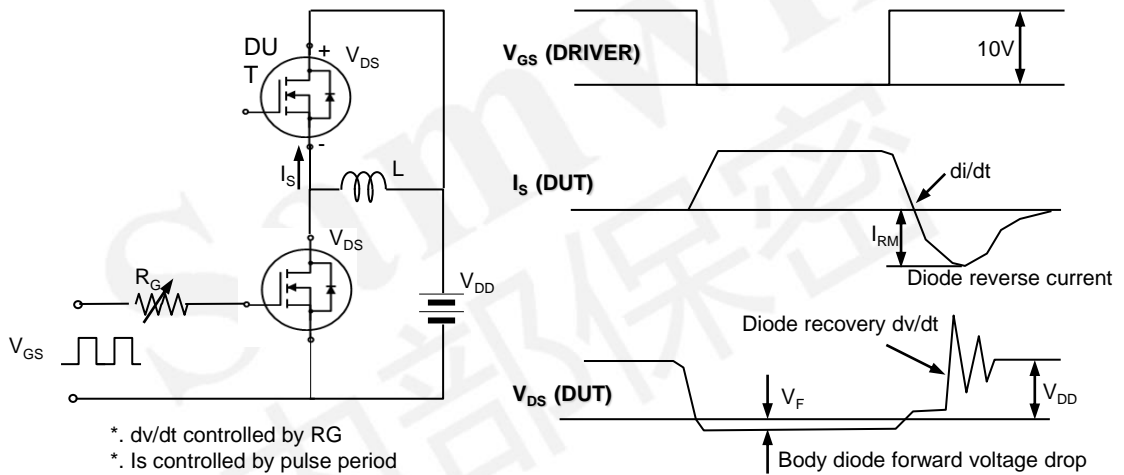



Fig. 7. Peak diode recovery dv/dt test circuit & waveform



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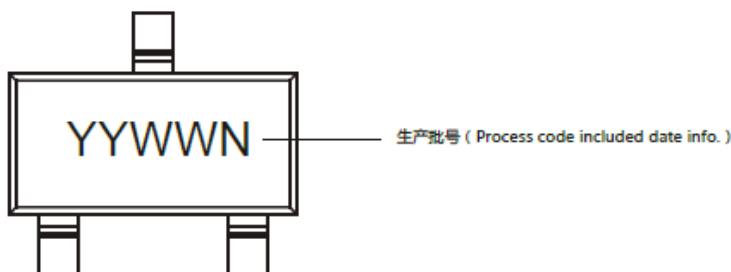
DISCLAIMER

- * All the data & curve in this document was tested in SEMIPOWER TESTING & APPLICATION CENTER.
- * This product has passed the PCT,TC,HTRB,HTGB,HAST,PC and Solderdunk reliability testing.
- * Qualification standards can also be found on the Web site (<http://www.semipower.com.cn>) 
- * Suggestions for improvement are appreciated, Please send your suggestions to samwin@samwinsemi.com

激光打印说明

DESCRIBE LASER MARKING

SW601Q



YYWWN:

Y: Packaging line number

Y: Year(2010 is A,2015 is F...)

WW: Week(1A is W1,1B is W2,2A is W27...)

N: Chip lot number

标签说明 Label



SAMWIN 标签说明:

01 - 生产批次LOT 02 - 封装形式 Package 03 - 数量 Quantity 04 - HF无卤
05 - 生产批号 (Process code included date info.) 06 - 产品型号 Part No.