

General Description

The IRF5803 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$. This device is ideal for battery and load management applications.

Features

- P-Channel
- Low ON-resistance
- Surface Mount
- RoHS Compliant

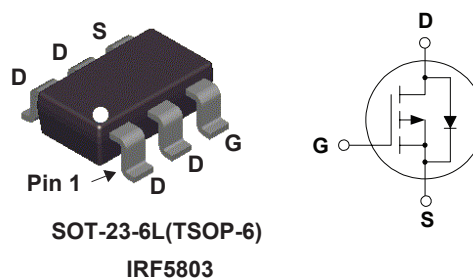
Product Summary

BVDSS	$R_{DS(ON)}$	ID
-40V	90m Ω	-3.4A

Applications

- Inverters
- Power Supplies
- DC / DC converter

SOT-23-6L(TSOP-6) Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-40	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D @ T_A = 25^\circ\text{C}$	Continuous Drain Current	-3.4	A
I_{DM}	Pulsed Drain Current	-13.6	A
$P_D @ T_A = 25^\circ\text{C}$	Total Power Dissipation ¹	2	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient ¹	---	62.5	$^\circ\text{C/W}$

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-40	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V$, $I_D=-3.4A$	---	---	90	$m\Omega$
		$V_{GS}=-4.5V$, $I_D=-2.7A$	---	---	170	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu A$	-1	---	-3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-32V$, $V_{GS}=0V$	---	---	-10	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-5V$, $I_D=-0.5A$	0.8	---	---	S
Q_g	Total Gate Charge	$I_D=-3.4A$	---	20	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=-20V$	---	4.5	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=-10V$	---	3.5	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-20V$	---	45	---	ns
T_r	Rise Time	$I_D=-1A$	---	500	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=6\Omega$	---	90	---	
T_f	Fall Time	$V_{GS}=-10V$	---	48	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V$, $V_{GS}=0V$, $f=1MHz$	---	1100	---	pF
C_{oss}	Output Capacitance		---	100	---	
C_{rss}	Reverse Transfer Capacitance		---	75	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
t_{rr}	Reverse Recovery Time	$I_F=-2A$	---	25	---	ns
Q_{rr}	Reverse Recovery Charge	$dI/dt=-100A/\mu s$	---	34	---	nC
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=-2A$	---	---	-1.2	V

Note :

1.Surface mounted on 1 in square Cu board

This product has been designed and qualified for the consumer market.

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Cmos reserves the right to improve product design ,functions and reliability without notice.