P-Channel Enhancement Mode MOSFET

Features

VDS	VGS	RDSon TYP	ID
-20V	±12V	70mR@-4V5	-5A
		85mR@-2V5	

General Description

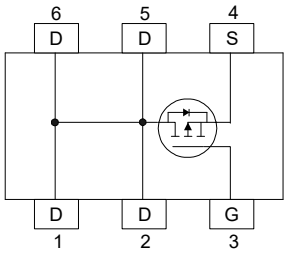
This device is particularly suited for low voltage application such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package Excellent thermal and electrical capabilities.

Applications

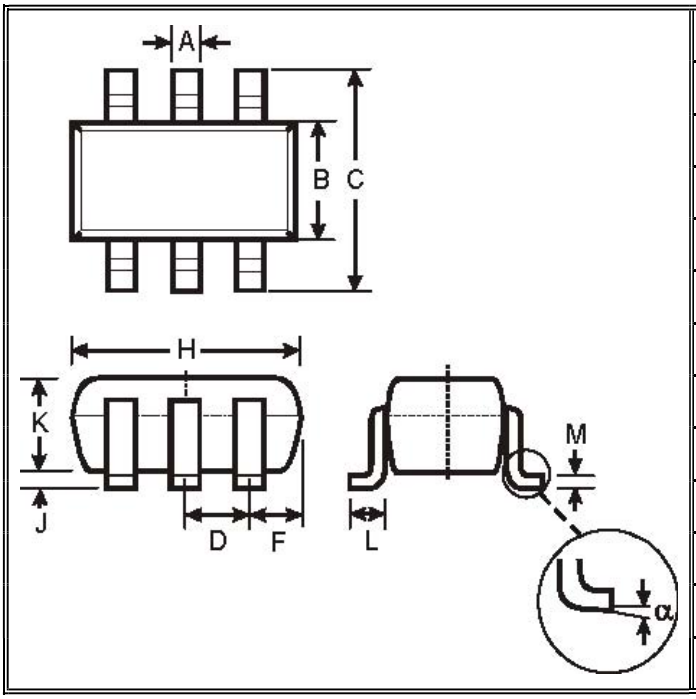
- Load Switch
- Portable Devices
- DCDC conversion

Pin Configuration

Top View



Package Information



SOT23-6L: mm			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	-	-	0.95
F	-	-	-
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
α	0°	8°	-

- **Absolute Maximum Ratings** @T_A=25℃ unless otherwise noted

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DSS}	-20	V
Gate-Source Voltage		V_{GSS}	±12	V
Drain Current (Note 1)	Continuous T_A=25°C	I_D	-5	A
	Pulsed (Note 2)		-20	A
Total Power Dissipation (Note 1)		P_D	1500	mW
Operating and Storage Junction Temperature Range		T_J, T_{STG}	-55 to +150	°C

Note:

The value of P_D is measured with the device mounted on 1in ^{2} FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C. The current rating is based on the DC thermal resistance rating.

1. Minimum footprint
2. Maximum footprint.

- **Electrical Characteristics** @TA = 25℃ unless otherwise noted, no self-heating.

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D=-250uA	-20	--	--	V
Drain Cut-off Current	I_{DSS}	V_{DS} = -20 V , V_{GS} = 0V	--	--	-1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS} =±12 V , V_{DS} = 0V	--	--	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	I_D = -250 uA , V_{DS} = V_{GS}	-0.45	-0.75	-1.5	V
Drain-Source On-state Resistance	$R_{DS(on)}$	V_{GS} = -4.5V ,I_D =-3 A	--	70	82	mR
		V_{GS} = -2.5V , I_D = -2A	--	85	100	mR
Forward Transconductance	g_{FS}	V_{DS} = -5V, I_D = -2.8A	--	6.5	--	S
Input Capacitance	C_{iss}	V_{DS} = -6V , V_{GS} = 0V f = 1 MHz	--	415	--	pF
Output Capacitance	C_{oss}		--	223	--	pF
Feedback Capacitance	C_{rss}		--	87	--	pF
Turn-on Delay Time	$t_{d(on)}$	V_{DD} = -6V , R_L = 6R,I_D = -1.0A, V_{GEN} = -4.5V, R_G = 6R	--	13	25	ns
Turn-off Delay Time	$t_{d(off)}$		--	42	70	ns
Drain-Source Diode Forward Voltage	V_{SD}	Is = -1.6A, V_{GS} = 0V	-0.5	--	-1.2	V

- **Typical Performance Characteristics**

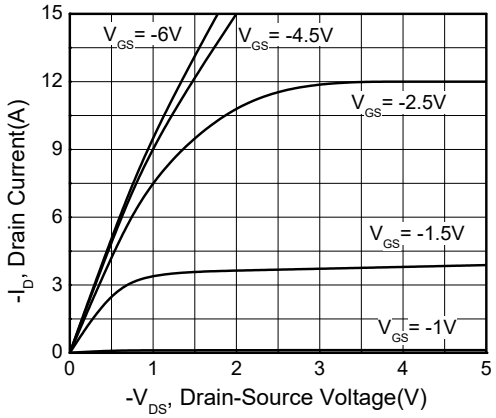


Fig 1. Output Characteristics

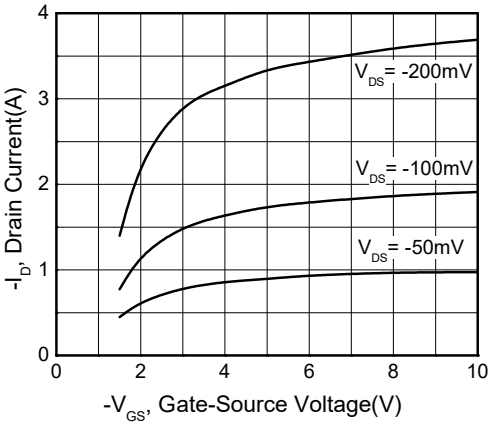


Fig 2. Transfer Characteristics

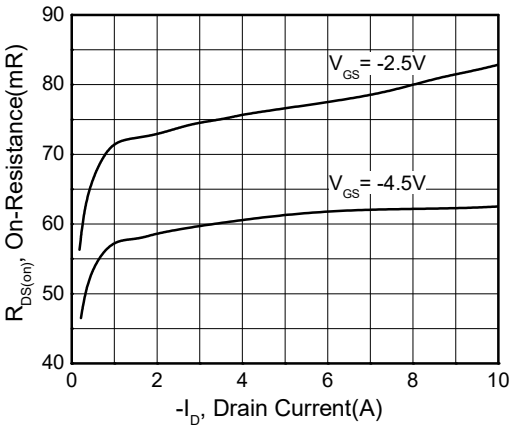


Fig 3. On-Resistance vs. Drain Current

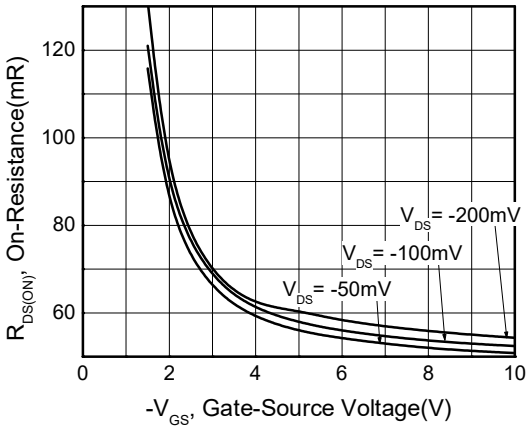


Fig 4. On-Resistance vs.Gate-Source Valtage

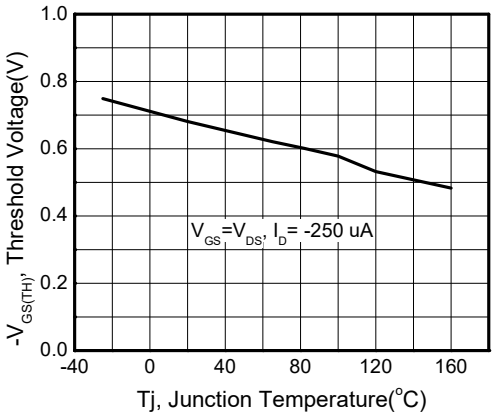


Fig 5. Threshold Voltage

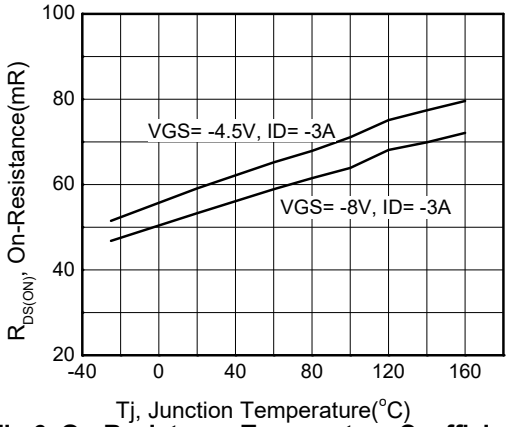


Fig 6. On-Resistance Temperature Coefficient

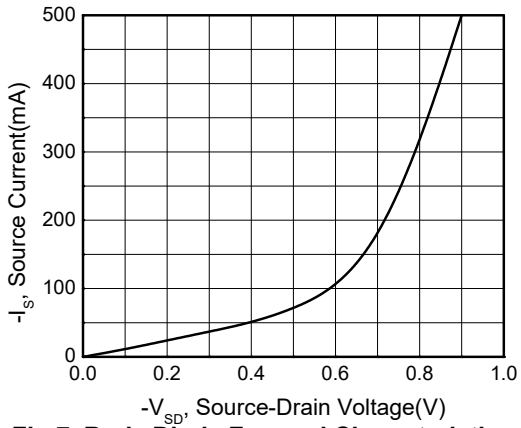


Fig 7. Body Diode Forward Characteristics

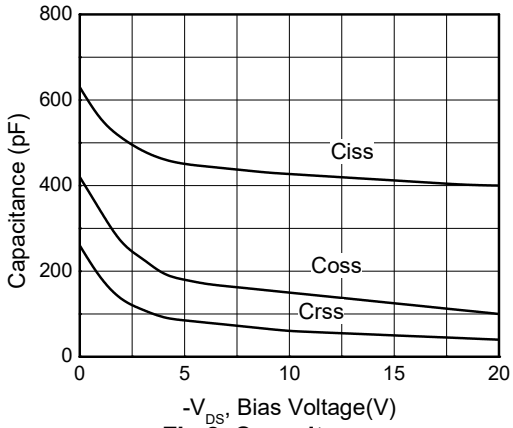


Fig 8. Capacitance

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