

## P-Channel Enhancement Mode MOSFET

- **Features**

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

- **General Description**

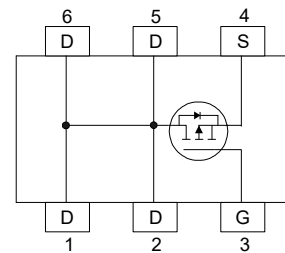
This device is particularly suited for low voltage application such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package Excellent thermal and electrical capabilities.

- **Applications**

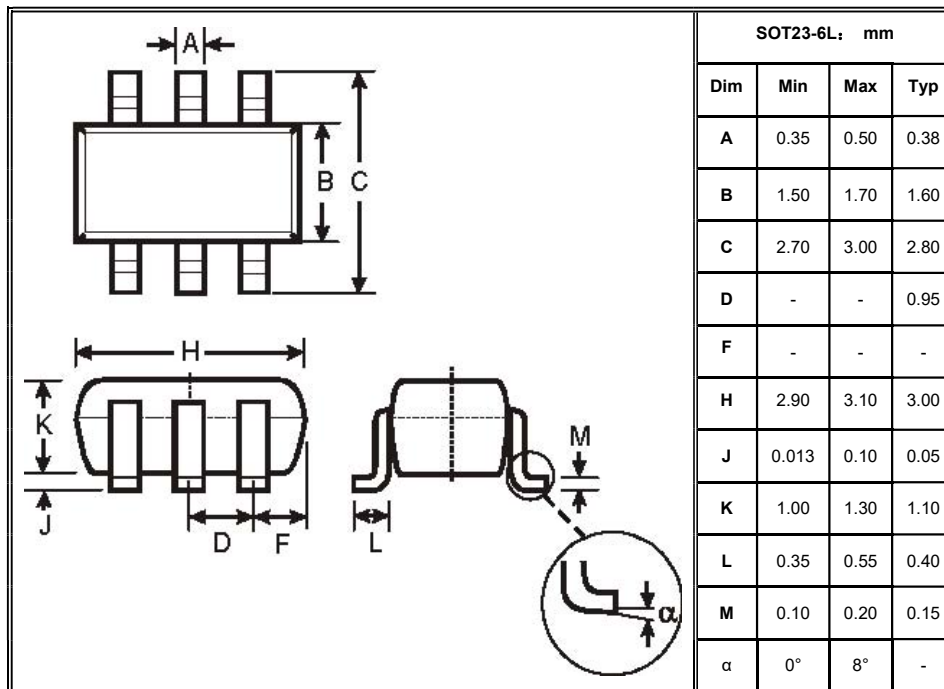
- Load Switch
- Portable Devices
- DCDC conversion

- **Pin Configuration**

Top View



- **Package Information**



● **Absolute Maximum Ratings** @ $T_A=25^\circ\text{C}$  unless otherwise noted

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		$V_{DSS}$	-20	V
Gate-Source Voltage		$V_{GSS}$	$\pm 12$	V
Drain Current (Note 1)	Continuous $T_A=25^\circ\text{C}$	$I_D$	-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	$^\circ\text{C}$

Note:

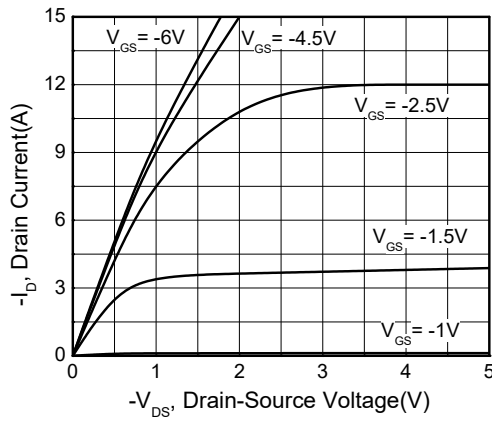
The value of  $P_D$  is measured with the device mounted on  $1\text{in}^2$  FR-4 board with 2oz. Copper, in a still air environment with  $T_A=25^\circ\text{C}$ . The current rating is based on the DC thermal resistance rating.

1. Minimum footprint
2. Maximum footprint.

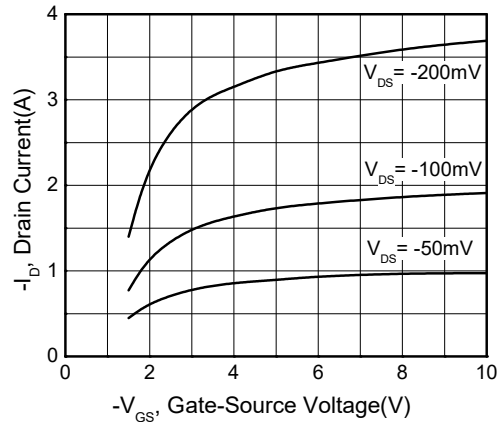
● **Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise noted, no self-heating.

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu\text{A}$	-20	--	--	V
Drain Cut-off Current	$I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0V$	--	--	-1	$\mu\text{A}$
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$	--	--	$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$I_D = -250\mu\text{A}, V_{DS} = V_{GS}$	-0.45	-0.75	-1.5	V
Drain-Source On-state Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -3A$	--	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	$C_{iss}$	$V_{DS} = -6V, V_{GS} = 0V$ $f = 1\text{MHz}$	--	415	--	pF
Output Capacitance	$C_{oss}$		--	223	--	pF
Feedback Capacitance	$C_{riss}$		--	87	--	pF
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -6V, R_L = 6R, I_D = -1.0A,$	--	13	25	ns
Turn-off Delay Time	$t_{d(off)}$	$V_{GEN} = -4.5V, R_G = 6R$	--	42	70	ns
Drain-Source Diode Forward Voltage	$V_{SD}$	$I_S = -1.6A, V_{GS} = 0V$	-0.5	--	-1.2	V

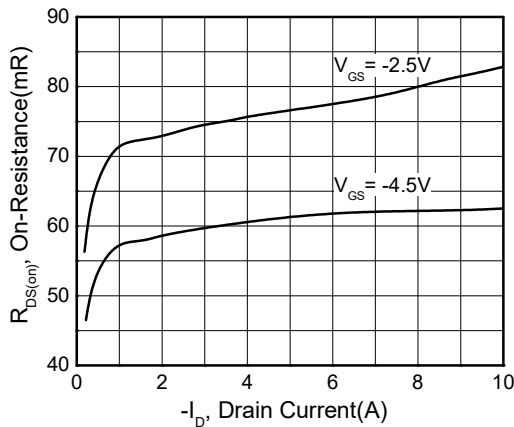
● Typical Performance Characteristics



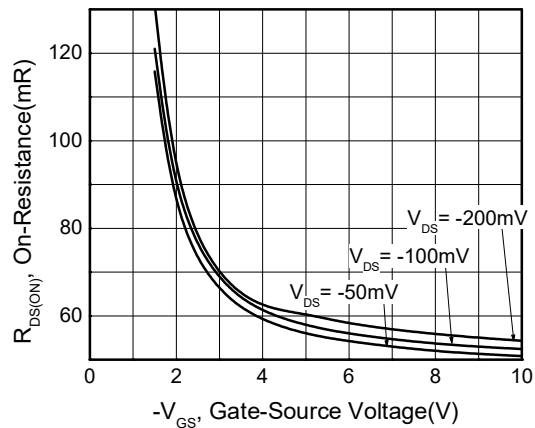
**Fig 1. Output Characteristics**



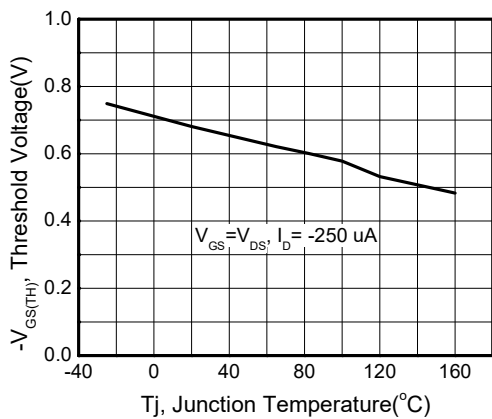
**Fig 2. Transfer Characteristics**



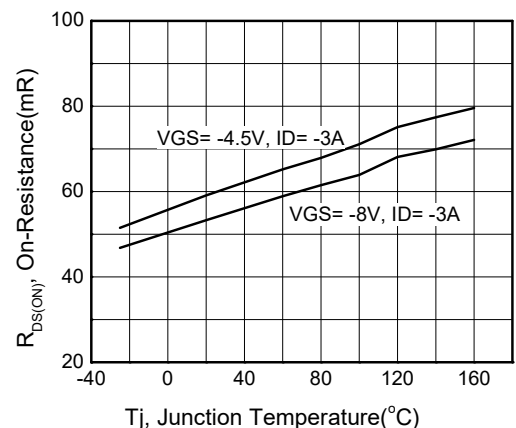
**Fig 3. On-Resistance vs. Drain Current**



**Fig 4. On-Resistance vs. Gate-Source Voltage**



**Fig 5. Threshold Voltage**



**Fig 6. On-Resistance Temperature Coefficient**

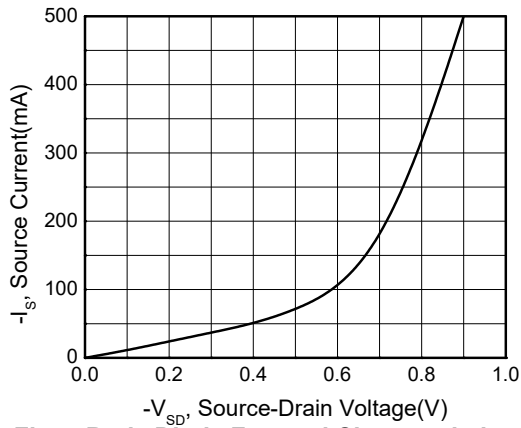


Fig 7. Body Diode Forward Characteristics

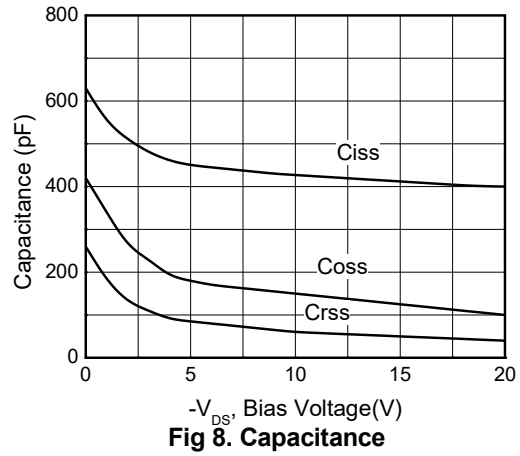


Fig 8. Capacitance

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