

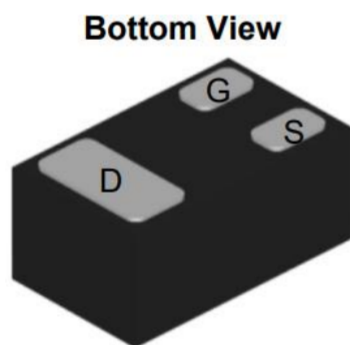
Product Summary

- V_{DS} -30 V
- I_{DS} (at $V_{GS}=-4.5V$) -800m A
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) $\leq 400m\Omega$

Application

- Interfacing Switching
- Portable equipment and battery
- Load Switch

Package and Pin Configuration

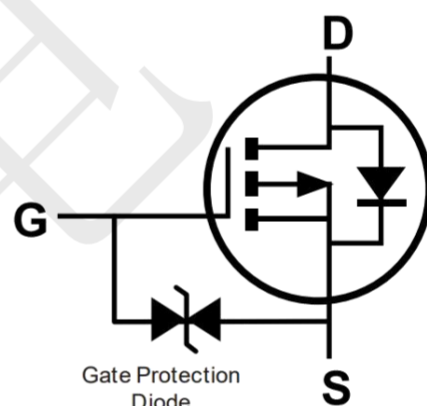


DFN1006-3



Top View
Package Pin Configuration

Circuit diagram



Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current	I_D	-800	mA
Pulsed Drain Current ($t = 100 \mu s$)	I_{DM}	-2100	mA
Maximum Power Dissipation	P_D	100	mW
Operating Junction Temperature Range	T_J	-55 to +150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}C$

Thermal Characteristic

PARAMETER		Symbol	Value	Unit
Thermal Resistance from Junction to Ambient($t \leq 10s$)	PCB Mount (Note)	$R_{\theta JA}$	1250	$^{\circ}C/W$

notes 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2 . When mounted on 1" square PCB (FR4 material).

Electrical Characteristics (T_A=25 °C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D= -250\mu A$	BV_{DSS}	-30	--	--	V
Gate-Source Threshold Voltage	$V_{DS}=V_{GS}, I_D= -250\mu A$	$V_{GS(th)}$	-0.4	-0.7	-1.3	V
Gate-Source Leakage	$V_{DS}=0V, V_{GS}= \pm 8V$	I_{GSS}	--	--	± 10	μA
Zero Gate Voltage Drain Current	$V_{DS}= -30V, V_{GS}=0V$	I_{DSS}	--	-0.1	-1	μA
	$V_{DS}= -30V, T_J=85^{\circ}C$		--	--	-30	μA
Drain-Source On-State Resistance (Note 1)	$V_{GS}= -4.5V, I_D= -0.5A$	$R_{DS(on)}$	--	300	500	m Ω
	$V_{GS}= -2.5V, I_D= -0.5A$		--	400	600	
Forward Transconductance (Note 2)	$V_{DS}= -5V, I_D= -0.5A$	g_{fs}	--	10	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	$V_{DS}= -20V,$ $I_D= -0.5A,$ $V_{GS}= -4.5V$	Q_g	--	6.0	--	nC
Gate-Source Charge (Note 3)		Q_{gs}	--	1.1	--	
Gate-Drain Charge (Note 3)		Q_{gd}	--	1.7	--	
Input Capacitance	$V_{DS}= -15V, V_{GS}= 0V,$ $F= 1.0MHz$	C_{iss}	--	200	--	pF
Output Capacitance		C_{oss}	--	80	--	
Reverse Transfer Capacitance		C_{rss}	--	50	--	
Switching						
Turn-On Delay Time (Note 3)	$V_{DS}= -20V,$ $I_D= -0.5A,$ $V_{GS}= -4.5V,$ $R_G= 3\Omega$	$t_{d(on)}$	--	5.2	--	nS
Rise Time (Note 3)		t_r	--	12	--	
Turn-Off Delay Time (Note 3)		$t_{d(off)}$	--	19	--	
Fall Time (Note 3)		t_f	--	18	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	$V_{GS}= 0V, I_F= -0.5A$	V_{SD}	--	-0.8	-1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I_S	--	--	-0.8	A
Pulsed Current (Note 1)		I_{SM}	--	--	-2.1	A

Notes:

1. Pulse test; pulse width ≤ 300 μS, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

TYPICAL CHARACTERISTICS

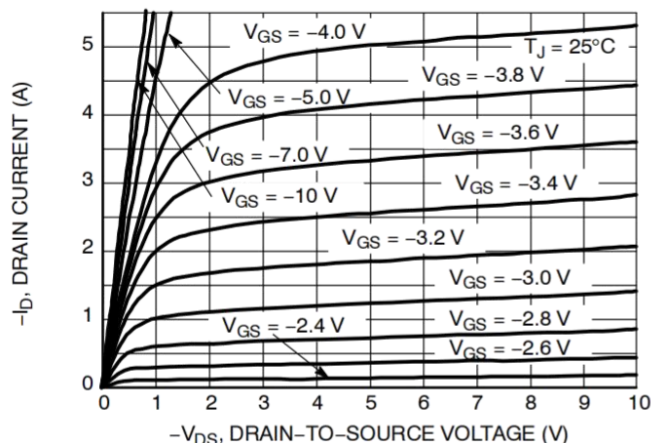


Figure 1. On-Region Characteristics

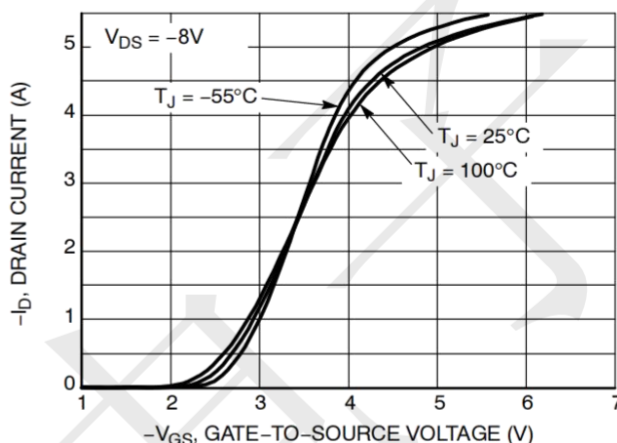


Figure 2. Transfer Characteristics

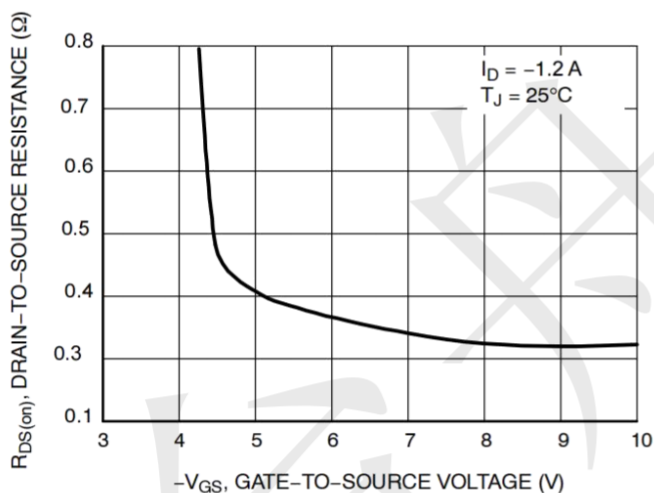


Figure 3. On-Resistance versus Gate-to-Source Voltage

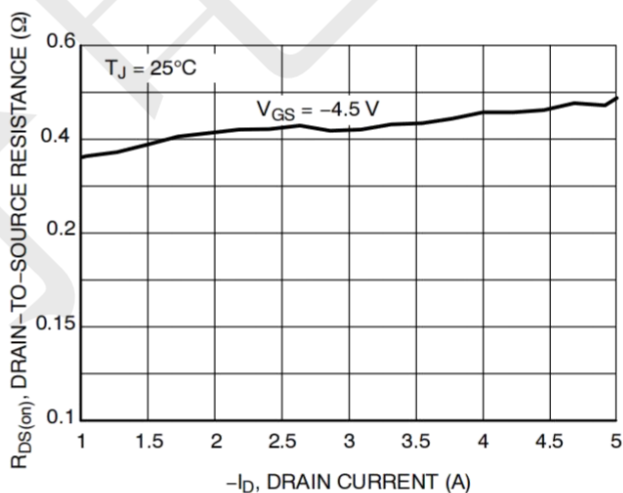


Figure 4. On-Resistance versus Drain Current and Gate Voltage

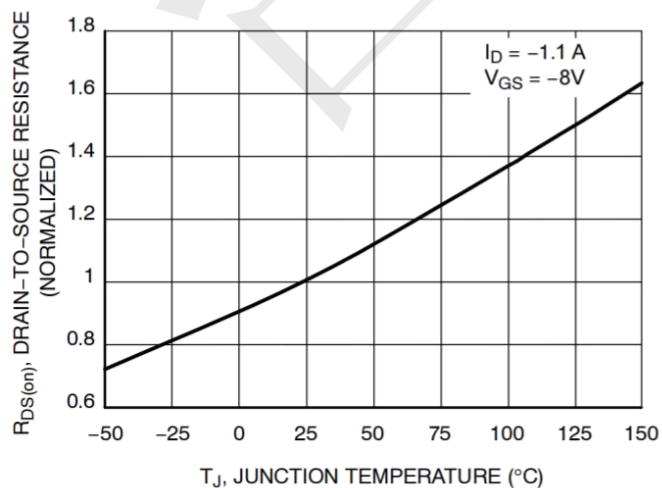


Figure 5. On-Resistance Variation with Temperature

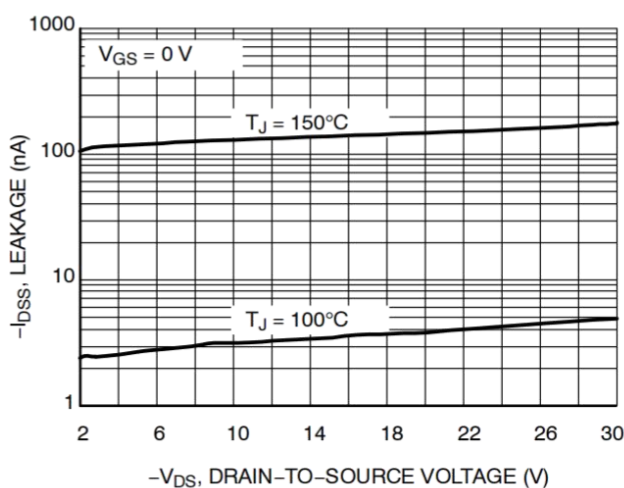
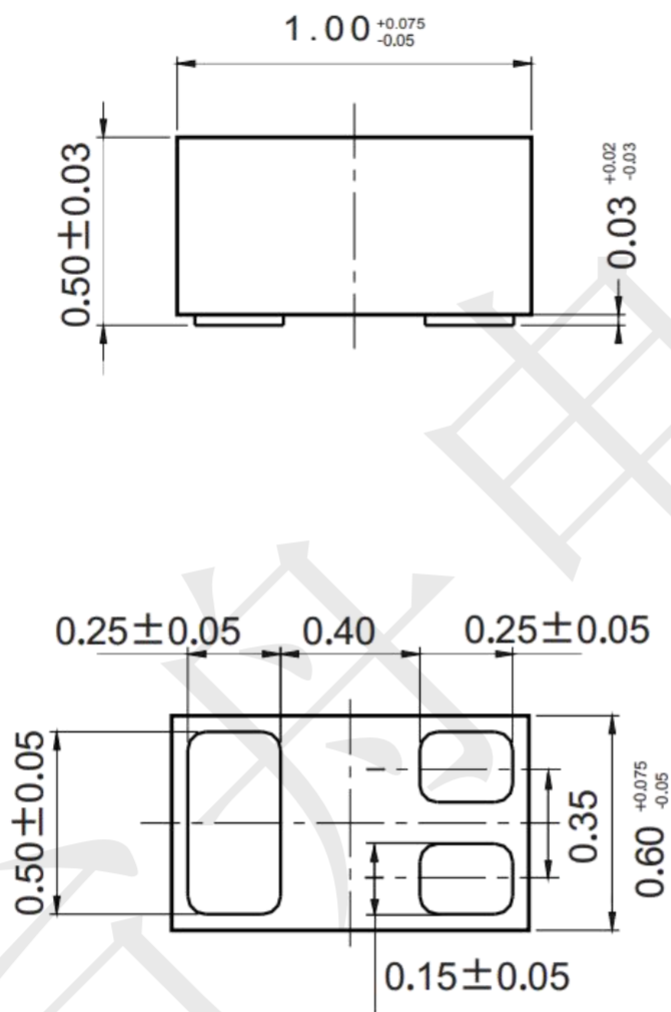


Figure 6. Drain-to-Source Leakage Current versus Voltage

Package Outline Dimensions (unit: mm)

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Mounting Pad Layout (unit: mm)

