

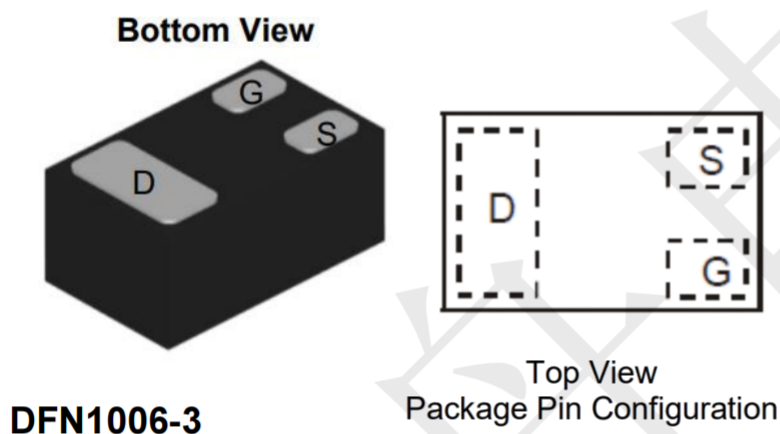
Product Summary

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

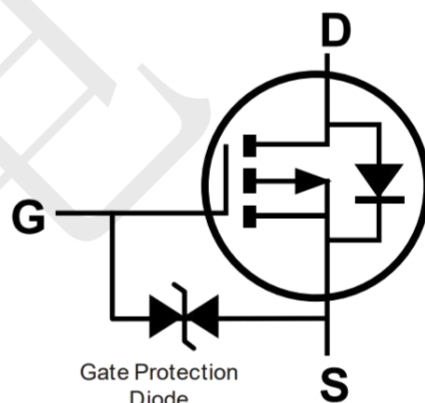
Application

- Interfacing Switching
- Portable equipment and battery
- Load Switch

Package and Pin Configuration



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($t \leq 10s$)	$R_{\theta JA}$	1250	$^{\circ}C/W$

PCB Mount
(Note)

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 = -250μA	BV _{DSS}	-30	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = -250μA	V _{GS(th)}	-0.4	-0.7	-1.3	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±8V	I _{GSS}	--	--	±10	uA
Zero Gate Voltage Drain Current	V _{DS} = -30V, V _{GS} =0V	I _{DSS}	--	-0.1	-1	μA
	V _{DS} = -30V, T _J =85°C		--	--	-30	μA
Drain-Source On-State Resistance (Note 1)	V _{GS} = -4.5V, I _D = -0.5A	R _{DS(on)}	--	300	500	mΩ
	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 = 3Ω	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

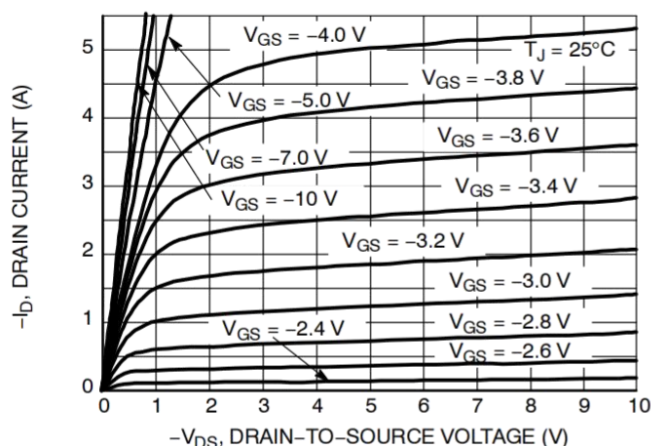


Figure 1. On-Region Characteristics

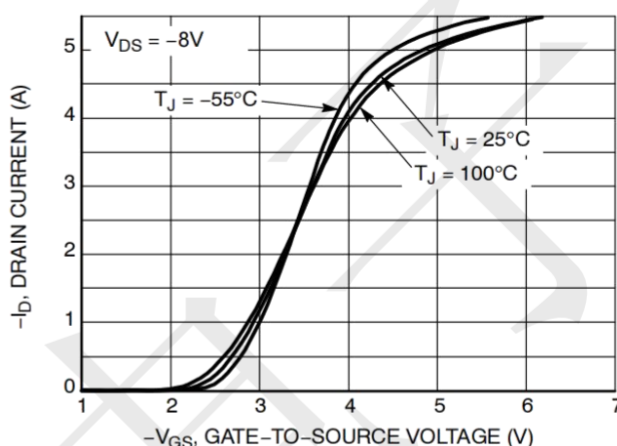


Figure 2. Transfer Characteristics

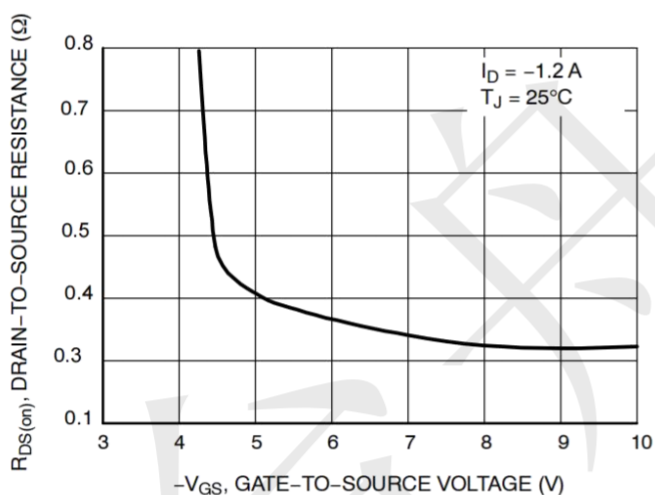


Figure 3. On-Resistance versus Gate-to-Source Voltage

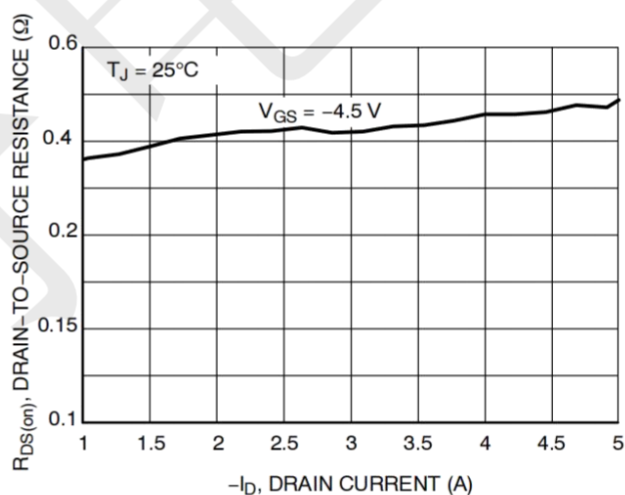


Figure 4. On-Resistance versus Drain Current and Gate Voltage

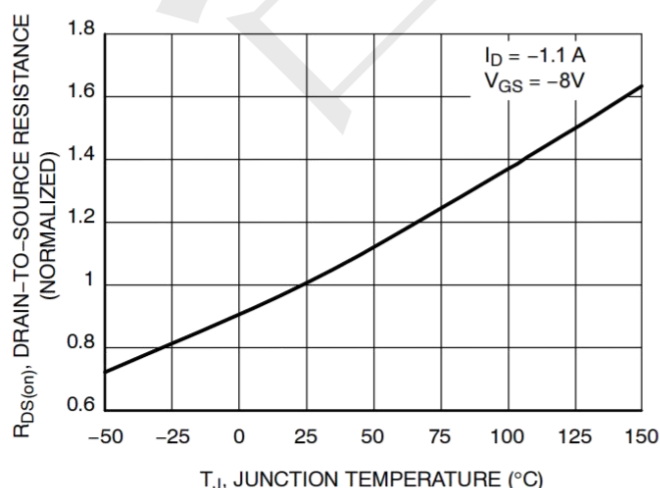


Figure 5. On-Resistance Variation with Temperature

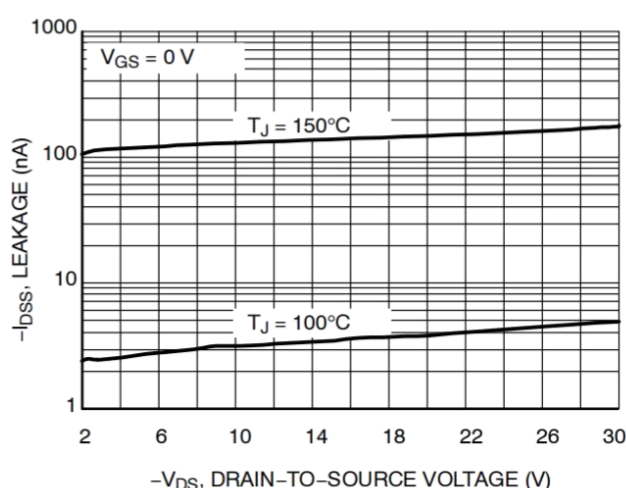
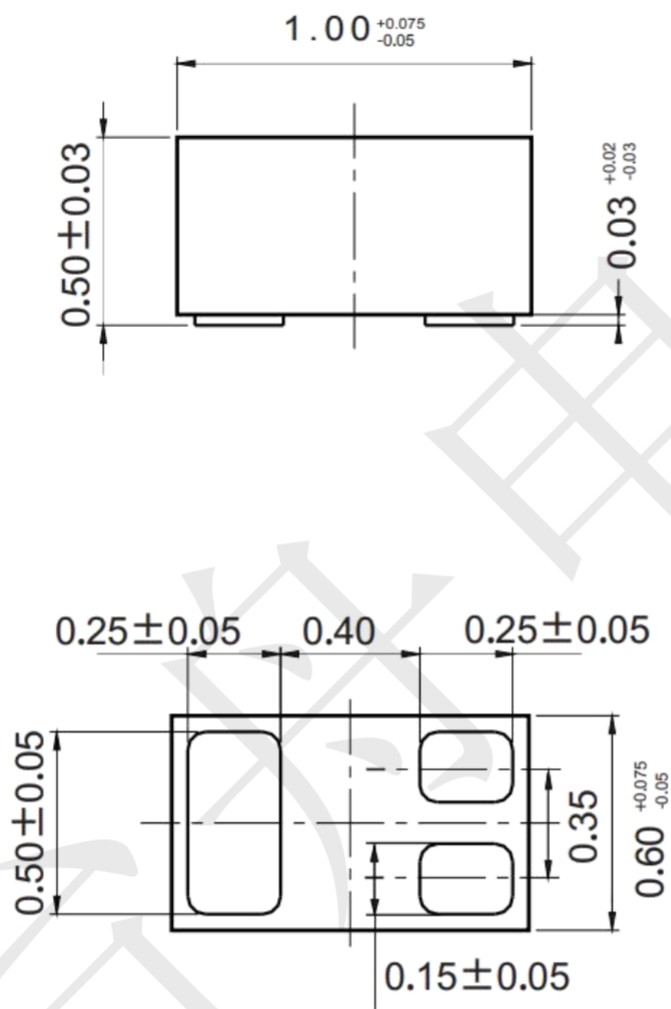


Figure 6. Drain-to-Source Leakage Current versus Voltage

Package Outline Dimensions (unit: mm)

DFN1006-3



Mounting Pad Layout (unit: mm)

