

PJ4812

30V N-Channel Enhancement Mode MOSFET

FEATURES

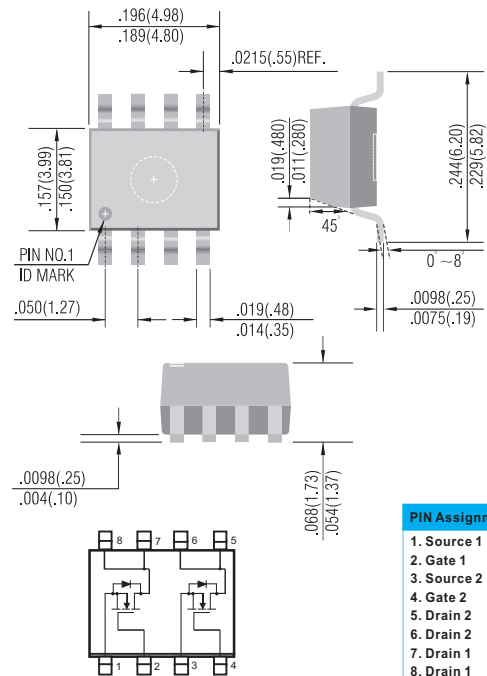
- $R_{DS(ON)}$, $V_{GS}@10V, I_{DS}@8A=17m\Omega$
- $R_{DS(ON)}$, $V_{GS}@5.0V, I_{DS}@6A=34m\Omega$
- Advanced Trench Process Technology
- High Density Cell Design For Ultra Low On-Resistance
- Specially Designed for DC/DC Converters
- Fully Characterized Avalanche Voltage and Current
- Pb free product : 99% Sn above can meet RoHS environment substance directive request

MECHANICAL DATA

- Case: SOIC-08 Package
- Terminals : Solderable per MIL-STD-750D, Method 1036.3
- Marking : 4812

SOIC-08

Unit: inch (mm)



ABSOLUTE MAXIMUM RATINGS (T_C=25°C unless otherwise noted)

PARAMETER		SYMBOL	VALUE	UNIT
Drain-Source Voltage		V _{DS}	30	V
Gate-Source Voltage		V _{GS}	±20	V
Continous Drain Current	T _C =25°C	I _D	8	A
Pulsed Drain Current ⁽¹⁾		I _{DM}	32	A
Avalanche Energy L=0.1mH, I _D =8A, V _{DD} =25V		E _{AS}	3.2	mJ
Power Dissipation	T _C =25°C	P _D	2.4	W
	T _C =75°C		1.2	
Operating Junction and Stroage Temperature Range		T _J , T _{STG}	-55 to +175	°C
Junction-to-Ambient Thermal Resistance (PCB Mounted) ²		R _{ΘJA}	62.5	°C/W

- Note :** 1. Maximum DC current limited by the package
2. Surface mounted on FR4 board, t ≤ 10 sec

PANJIT RESERVES THE RIGHT TO IMPROVE PRODUCT DESIGN,FUNCTIONS AND RELIABILITY WITHOUT NOTICE

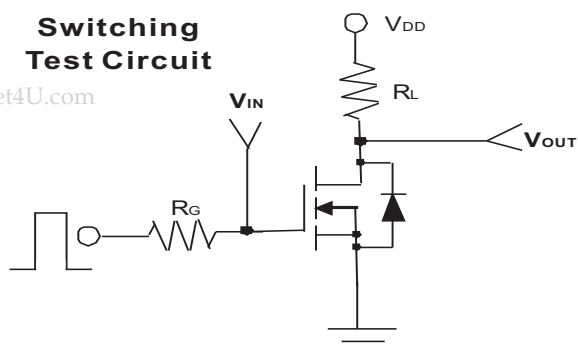
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ELECTRICAL CHARACTERISTICS (T_c=25°C, Unless Otherwise Noted)

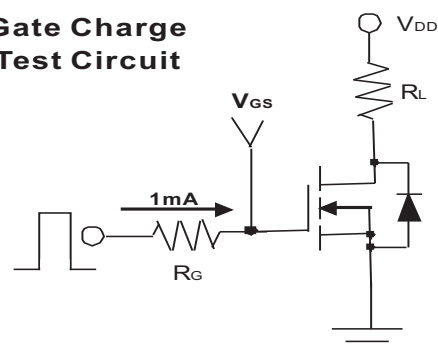
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	30	-	-	V
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1	-	3	V
Drain-Source On-state Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =8A	-	15	17	mΩ
		V _{GS} =5V, I _D =6A	-	26	34	mΩ
Gate-Body Leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±20V	-	-	±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V	-	-	1	μA
		V _{DS} =24V, V _{GS} =0V, T _J =125°C	-	-	25	μA
On-State Drain Current	I _{D(ON)}	V _{DS} =10V, V _{GS} =10V	8	-	-	A
Forward Transconductance	g _{fs}	V _{DS} =5V, I _D =8A	10	-	-	S
DYNAMIC						
Total Gate Charge	Q _G	V _{DS} =15V, V _{GS} =5V, I _D =8A	-	7.0	-	nC
		V _{DS} =15V, V _{GS} =10V, I _D =8A	-	14.2	-	nC
Gate-Source Charge	Q _{GS}	V _{DS} =15V, V _{GS} =10V, I _D =8A	-	1.22	-	nC
Gate-Drain Charge	Q _{GD}	V _{DS} =15V, V _{GS} =10V, I _D =8A	-	3.44	-	nC
Turn-On Delay Time	t _{d(on)}	V _{DS} =15V, I _D =1A, V _{GS} =10V, R _{GS} =6Ω	-	7.8	-	nS
Rise Time	t _r	V _{DS} =15V, I _D =1A, V _{GS} =10V, R _{GS} =6Ω	-	11.6	-	nS
Turn-Off Delay Time	t _{d(off)}	V _{DS} =15V, I _D =1A, V _{GS} =10V, R _{GS} =6Ω	-	28.8	-	nS
Fall Time	t _f	V _{DS} =15V, I _D =1A, V _{GS} =10V, R _{GS} =6Ω	-	5.6	-	nS
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =15V, f=1MHz	-	520	-	pF
Output Capacitance	C _{OSS}	V _{GS} =0V, V _{DS} =15V, f=1MHz	-	112	-	pF
Reverse Transfer Capacitance	C _{RSS}	V _{GS} =0V, V _{DS} =15V, f=1MHz	-	98	-	pF
Gate Resistance	R _g	V _{GS} =15mV, V _{DS} =0V, f=1MHz	-	2.0	-	Ω
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS						
Continuous Current	I _S		-	-	2.3	A
Forward Voltage	V _{SD}	I _F =2.3A, V _{GS} =0V	-	-	1.2	V

NOTE : Plus Test: Pluse Width ≤ 300us, Duty Cycle ≤ 2%.

Switching Test Circuit



Gate Charge Test Circuit



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Typical Characteristics Curves ($T_a=25^\circ\text{C}$, unless otherwise noted)

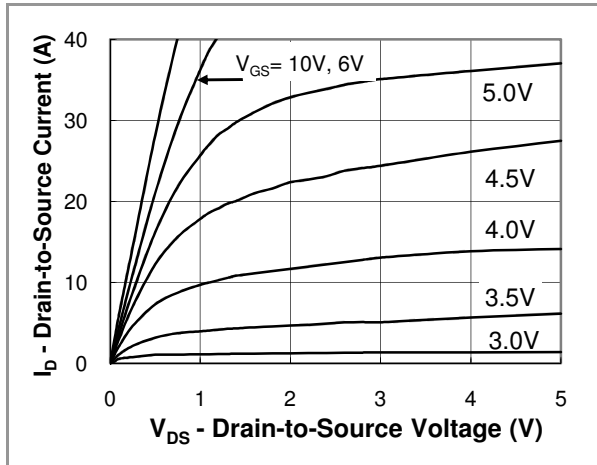


Fig.1 Output Characteristic

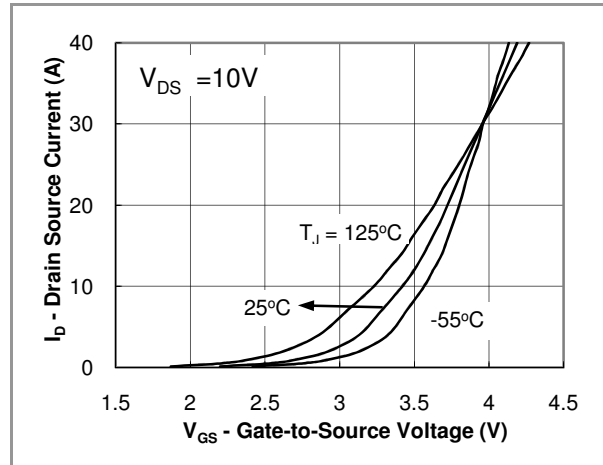


Fig.2 Transfer Characteristic

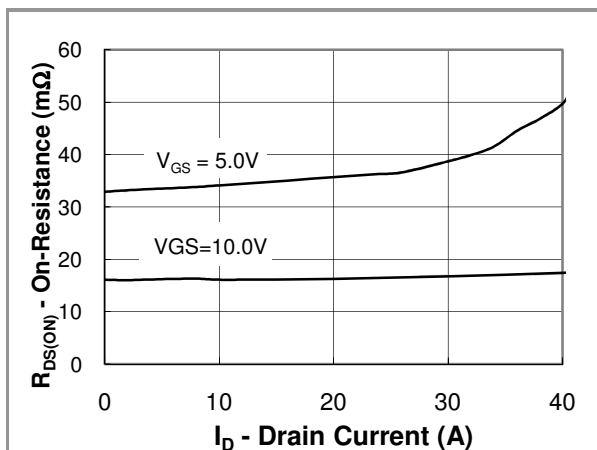


Fig.3 On Resistance vs Drain Current

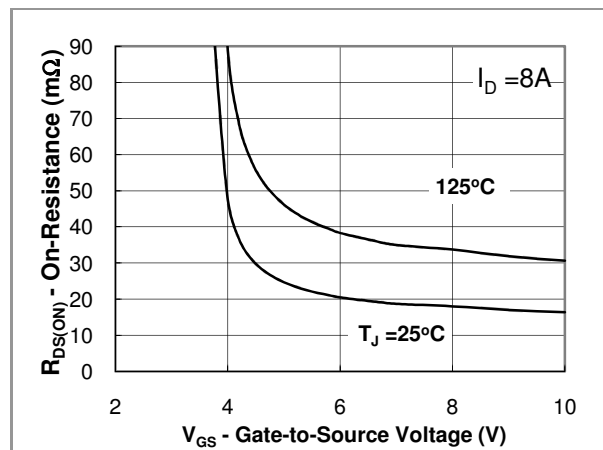


Fig.4 On Resistance vs Gate to Source Voltage

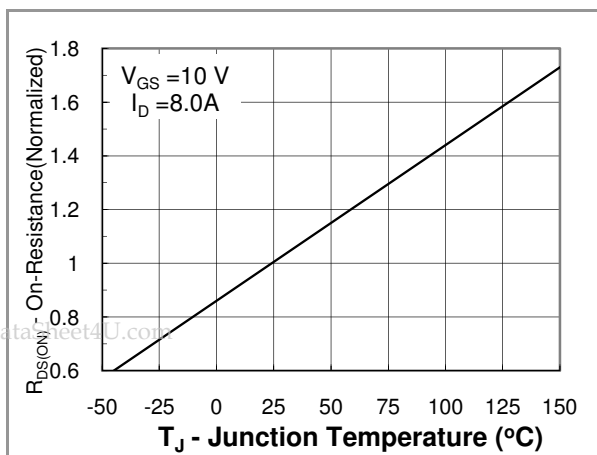


Fig.5 On Resistance vs Junction Temperature

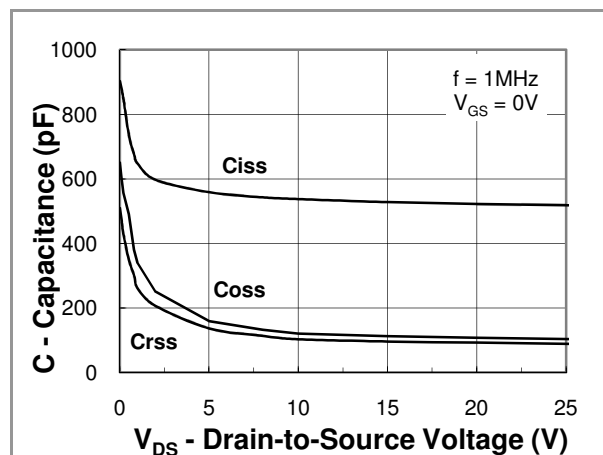


Fig.6 Capacitance

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Typical Characteristics Curves ($T_a=25^{\circ}\text{C}$, unless otherwise noted)

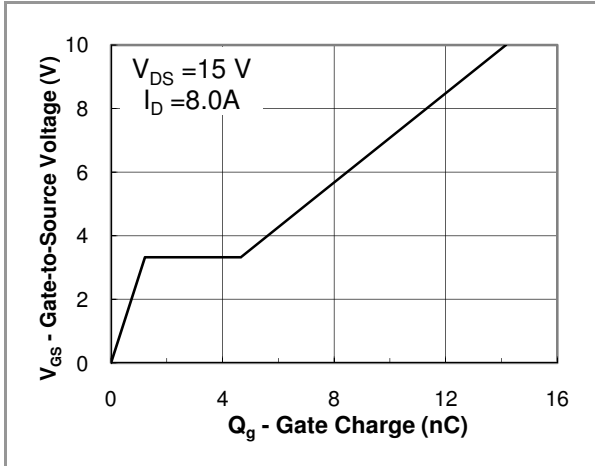


Fig. 7 Gate Charge Waveform

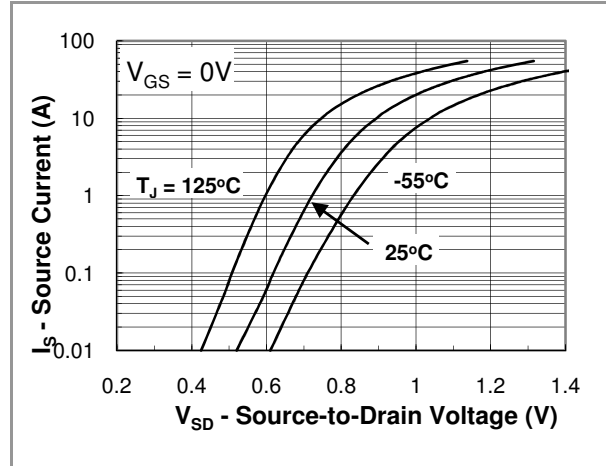


Fig.8 Source-Drain Diode Forward Voltage

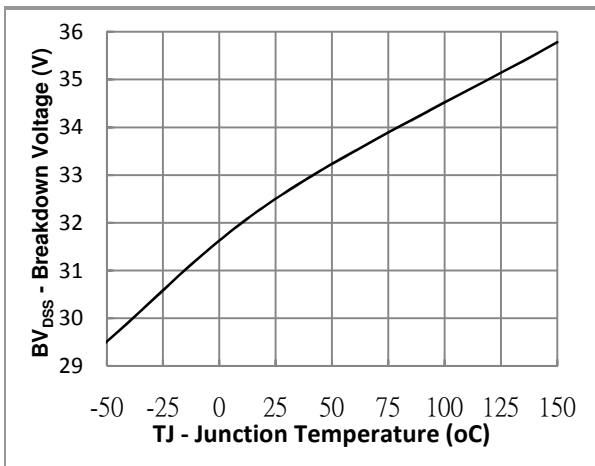


Fig.9 Breakdown Voltage vs Junction Temperature

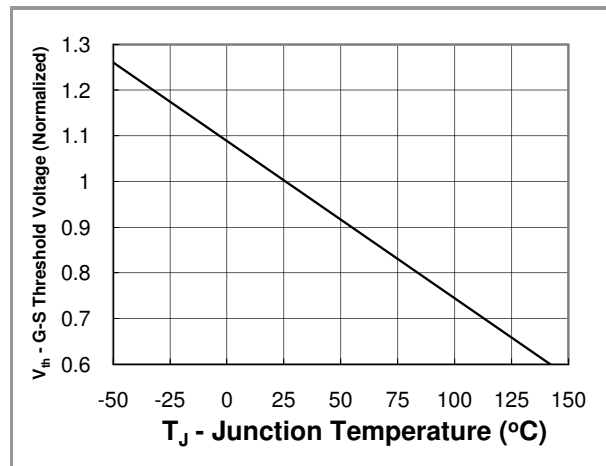
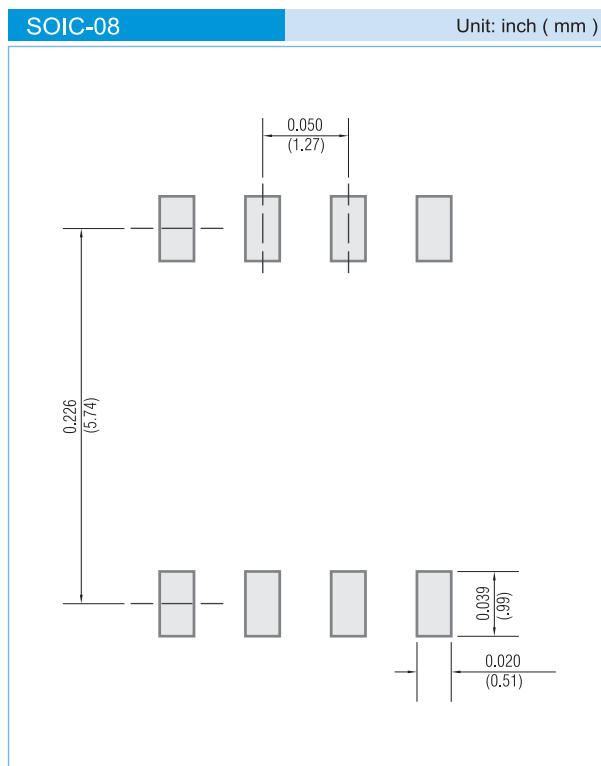


Fig.10 Threshold Voltage vs Junction Temperature

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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
T/R - 3K per 13" plastic Reel

LEGAL STATEMENT

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