

PJ4800

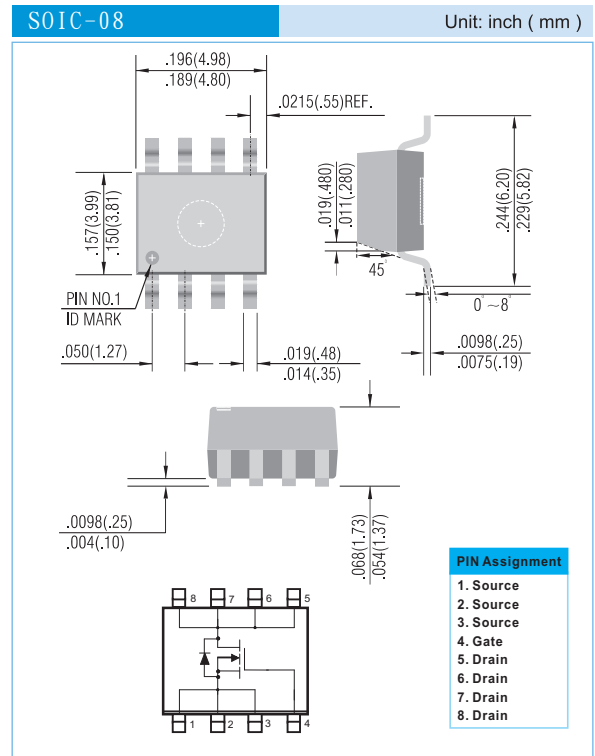
30V N-Channel Enhancement Mode MOSFET

FEATURES

- $R_{DS(ON)}, V_{GS}@10V, I_{DS}@8A=20m\Omega$
- $R_{DS(ON)}, V_{GS}@5.0V, I_{DS}@6A=31m\Omega$
- 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 : 4800



Maximum RATINGS and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	VALUE	UNIT
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C=25^{\circ}C$	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	$T_C=25^{\circ}C$	P_D	3	W
	$T_C=75^{\circ}C$		2	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to +175	$^{\circ}C$
Junction-to-Ambient Thermal Resistance(PCB Mounted) ²		$R_{\theta JA}$	50	$^{\circ}C/W$

Note:

1. Maximum DC current limited by the package
2. Surface mounted on FR4 board, $t \leq 10$ sec

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

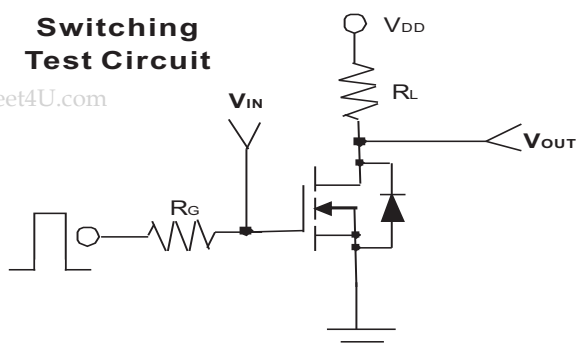
PJ4800

ELECTRICAL CHARACTERISTICS (Tc=25oC,Unless Otherwise Noted)

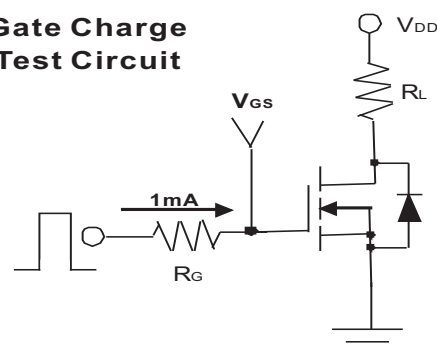
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	30	-	-	V
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1	-	3	V
Drain-Source On-state Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =8A	-	16	20	mΩ
		V _{GS} =5V, I _D =6A	-	23	31	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}		-	1.22	-	nC
Gate-Drain Charge	Q _{GD}		-	3.44	-	nC
Turn-On Delay Time	td(on)		-	7.8	-	nS
Rise Time	tr	V _{DS} =15V, I _D =1A, V _{GS} =10V R _{GS} =6Ω	-	11.6	-	nS
Turn-Off Delay Time	td(off)		-	28.8	-	nS
Fall Time	tf		-	5.6	-	nS
Input Capacitance	C _{ISS}		V _{GS} =0V, V _{DS} =15V f=1MHz	-	520	-
Output Capacitance	C _{OSS}	-		112	-	pF
Reverse Transfer Capacitance	C _{RSS}	-		98	-	pF
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 $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Switching Test Circuit



Gate Charge Test Circuit



PJ4800

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

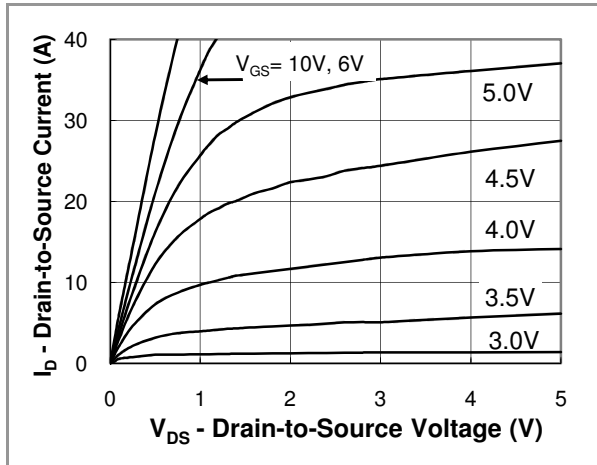


Fig.1 Output Characteristic

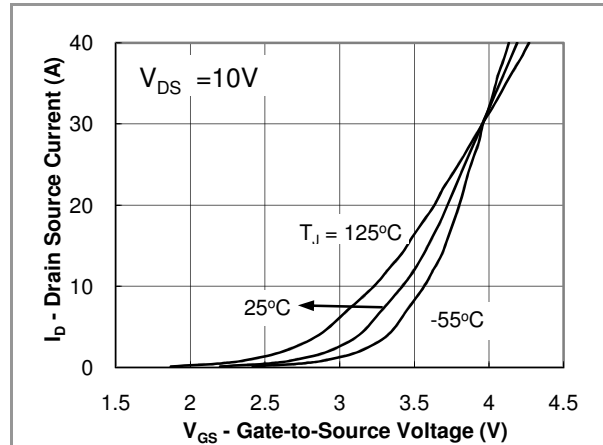


Fig.2 Transfer Characteristic

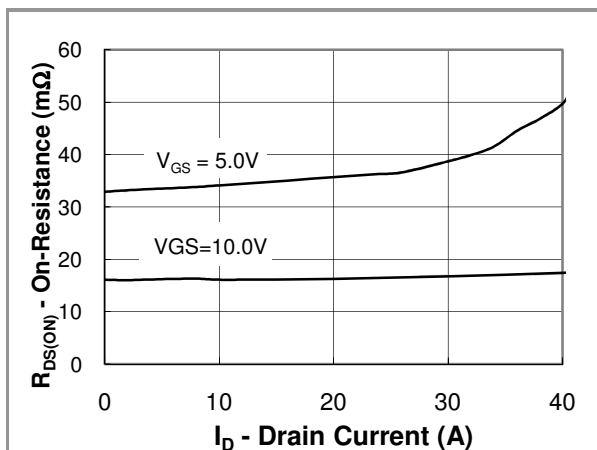


Fig.3 On Resistance vs Drain Current

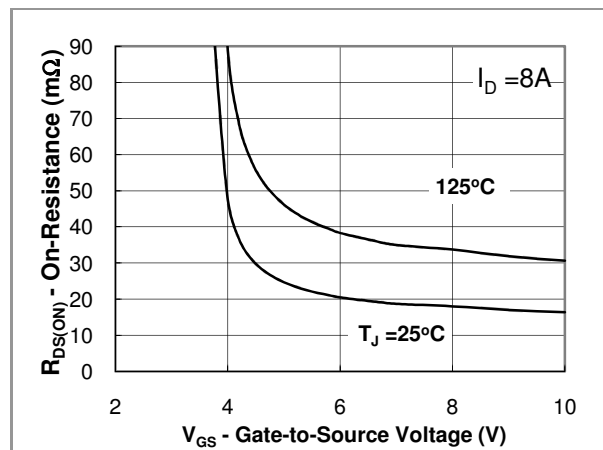


Fig.4 On Resistance vs Gate to Source Voltage

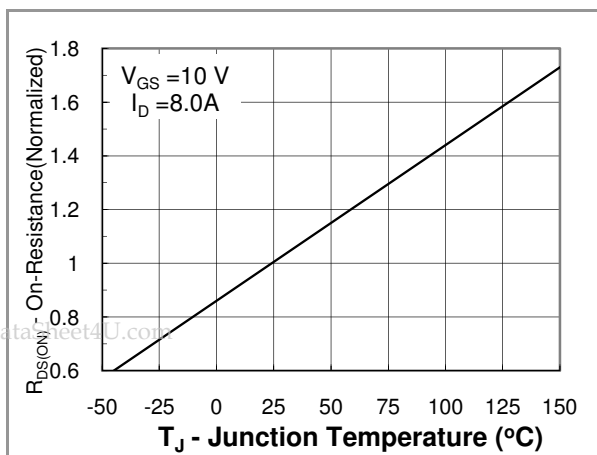


Fig.5 On Resistance vs Junction Temperature

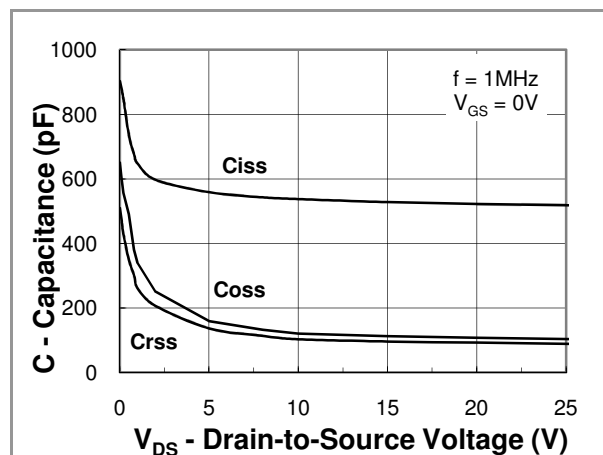


Fig.6 Capacitance



PJ4800

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

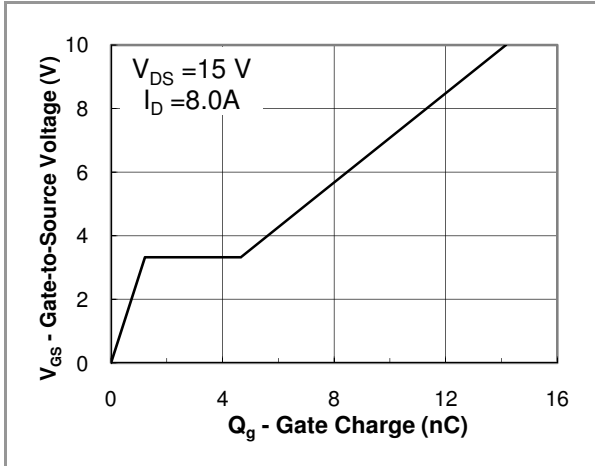


Fig. 7 Gate Charge Waveform

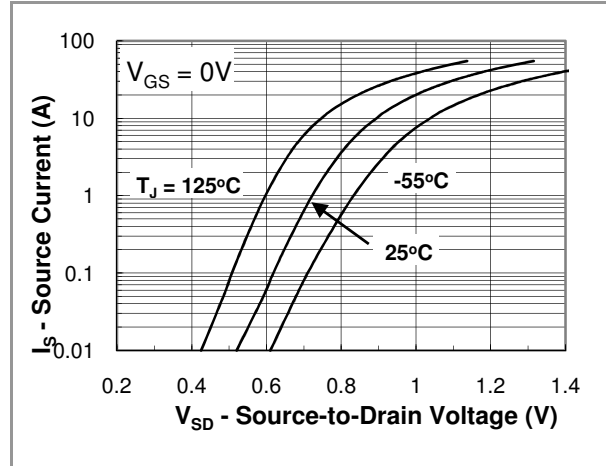


Fig.8 Source-Drain Diode Forward Voltage

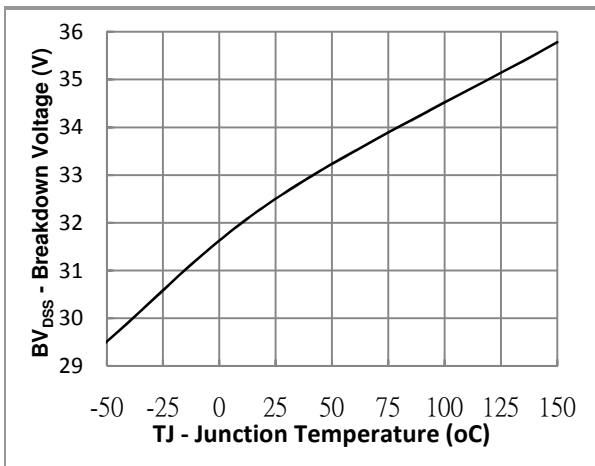


Fig.9 Breakdown Voltage vs Junction Temperature

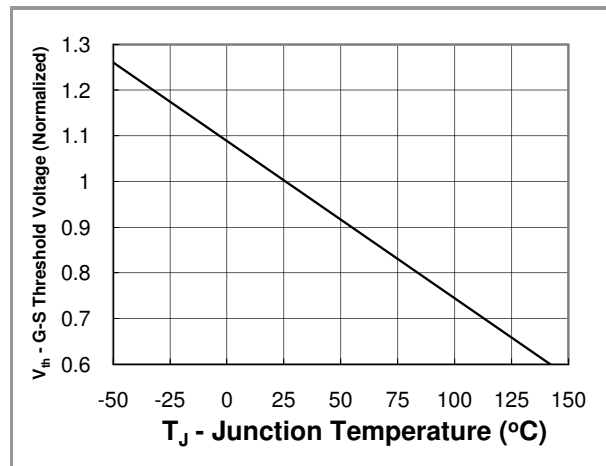
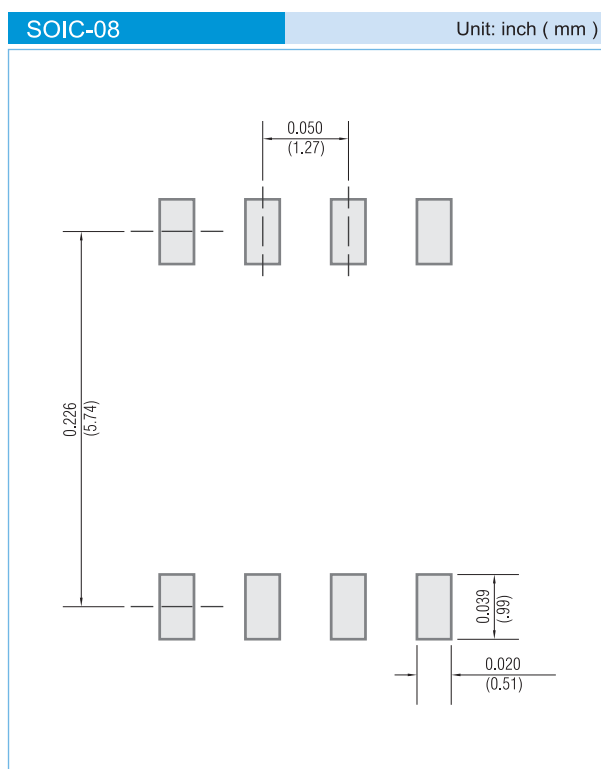


Fig.10 Threshold Voltage vs Junction Temperature

PJ4800

MOUNTING PAD LAYOUT



ORDER INFORMATION

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

LEGAL STATEMENT

Copyright PanJit International, Inc 2010

The information presented in this document is believed to be accurate and reliable. The specifications and information herein are subject to change without notice. Pan Jit makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose. Pan Jit products are not authorized for use in life support devices or systems. Pan Jit does not convey any license under its patent rights or rights of others.