



PJ4800

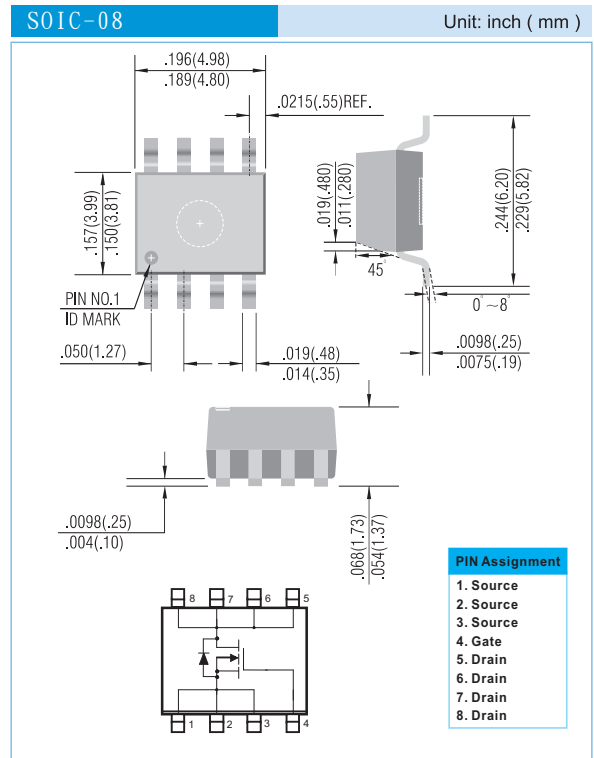
30V N-Channel Enhancement Mode MOSFET

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 ($T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER		SYMBOL	VALUE	UNIT
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C=25^\circ\text{C}$	I_D	8	A
Pulsed Drain Current ⁽¹⁾		I_{DM}	32	A
Avalanche Energy $L=0.1\text{mH}, I_D=8\text{A}, V_{DD}=25\text{V}$		E_{AS}	3.2	mJ
Power Dissipation	$T_C=25^\circ\text{C}$	P_D	3	W
	$T_C=75^\circ\text{C}$		2	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to +175	$^\circ\text{C}$
Junction-to-Ambient Thermal Resistance(PCB Mounted) ²		$R_{\theta JA}$	50	$^\circ\text{C/W}$

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

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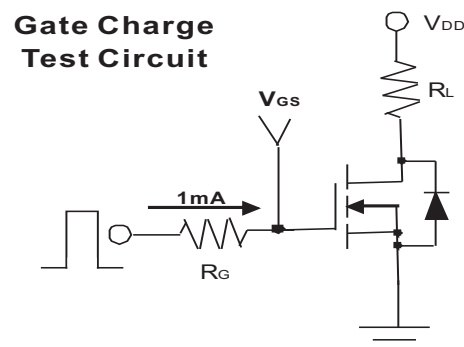
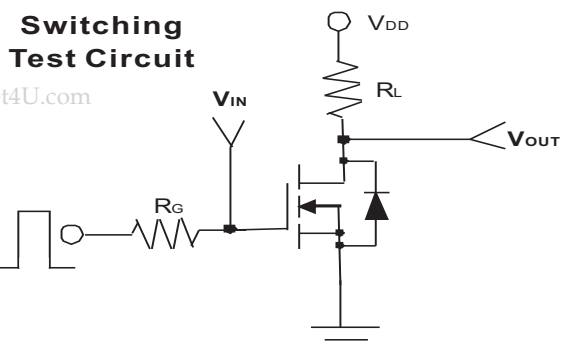


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ELECTRICAL CHARACTERISTICS (Tc=25oC, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	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}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$	-	-	1	μA
		$V_{DS}=24V, V_{GS}=0V, T_J=125^\circ C$	-	-	25	μA
On-State Drain Current	$I_{D(ON)}$	$V_{DS}=10V, V_{GS}=10V$	8	-	-	A
Forward Transconductance	gfs	$V_{DS}=5V, I_D=8A$	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}		-	3.44	-	nC
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=15V, I_D=1A, V_{GS}=10V, R_{GS}=6\Omega$	-	7.8	-	nS
Rise Time	t_r		-	11.6	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	28.8	-	nS
Fall Time	t_f		-	5.6	-	nS
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=15V, f=1MHz$	-	520	-	pF
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 $\leq 2\%$.





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

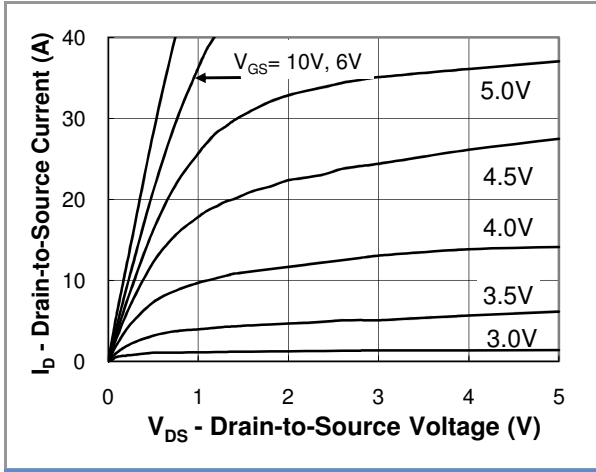


Fig.1 Output Characteristic

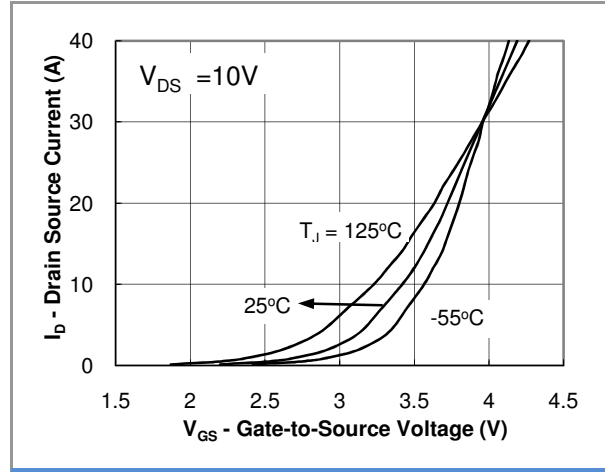


Fig.2 Transfer Characteristic

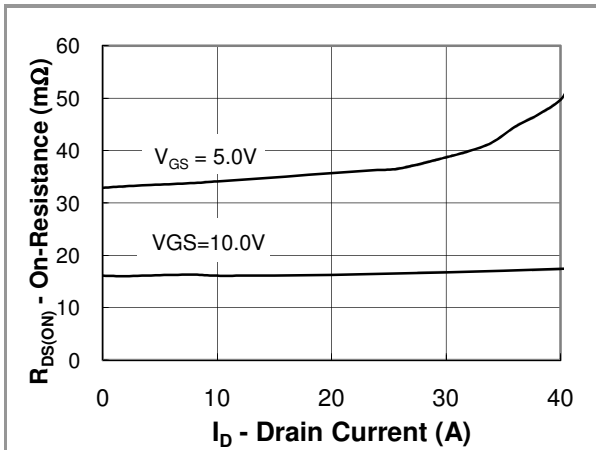


Fig.3 On Resistance vs Drain Current

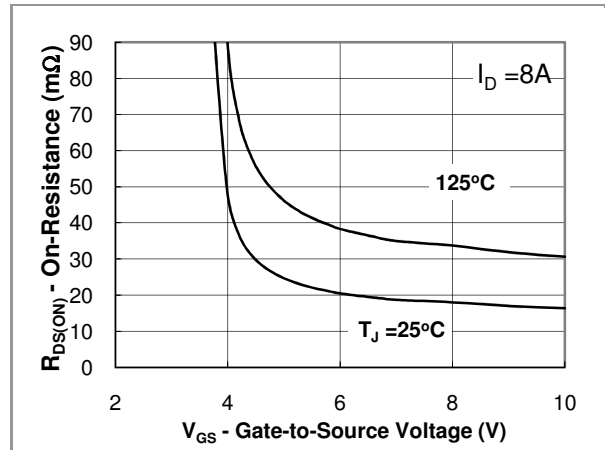


Fig.4 On Resistance vs Gate to Source Voltage

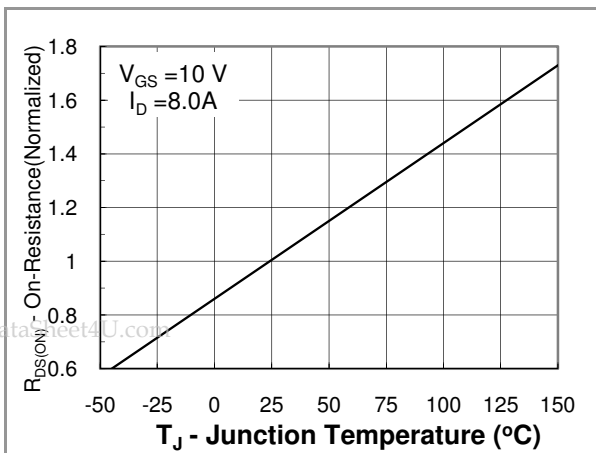


Fig.5 On Resistance vs Junction Temperature

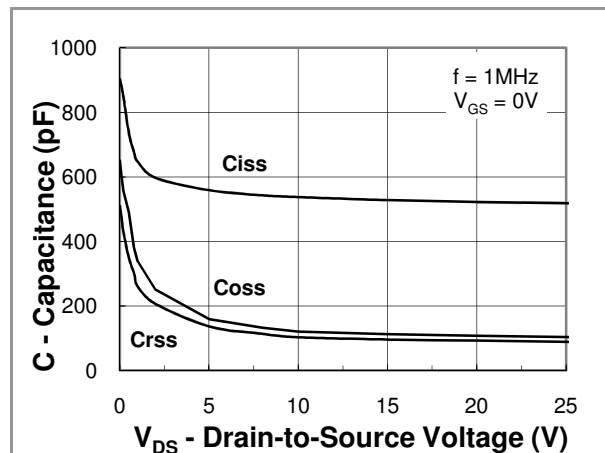


Fig.6 Capacitance



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

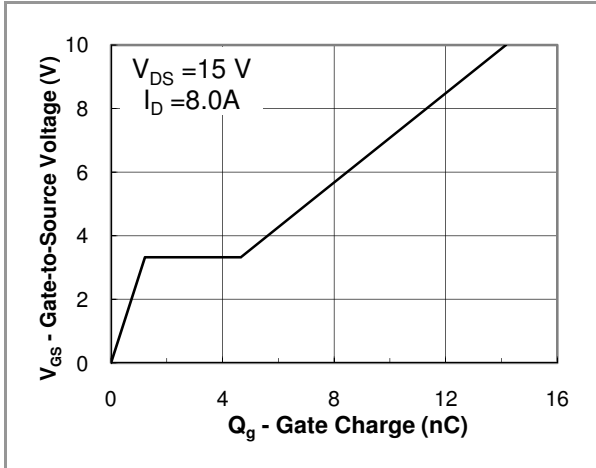


Fig. 7 Gate Charge Waveform

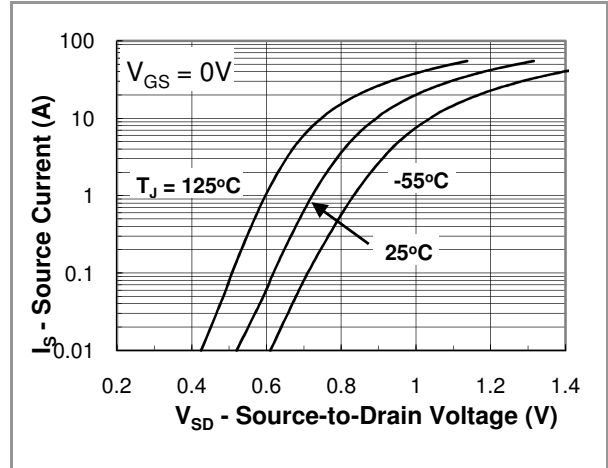


Fig. 8 Source-Drain Diode Forward Voltage

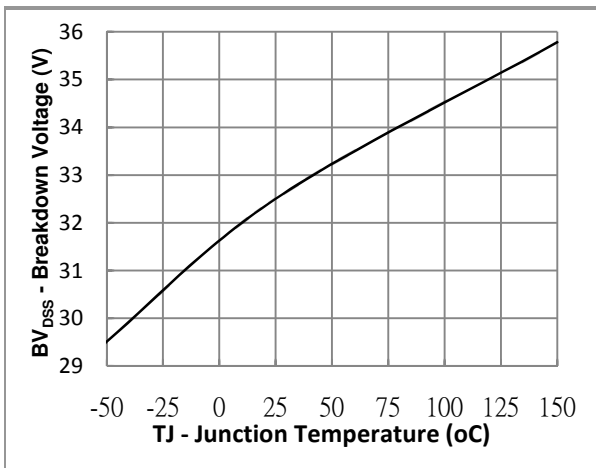


Fig.9 Breakdown Voltage vs Junction Temperature

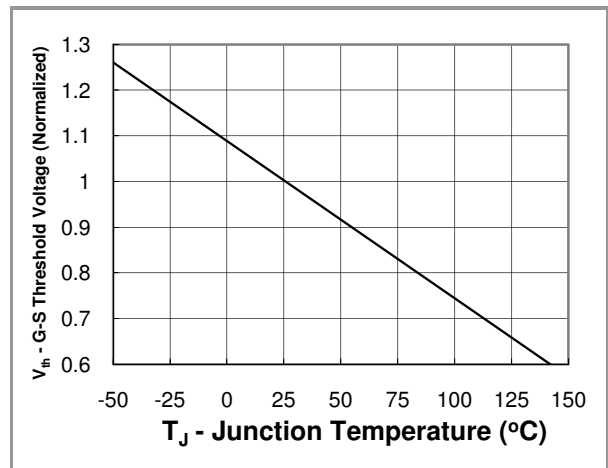
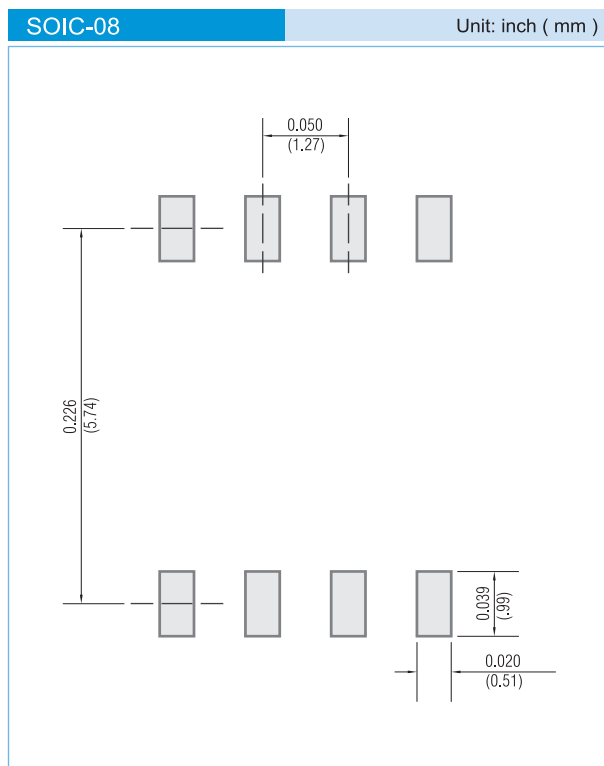


Fig.10 Threshold Voltage vs Junction Temperature



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MOUNTING PAD LAYOUT



ORDER INFORMATION

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

LEGAL STATEMENT

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