



PJD15N06L

60V N-Channel Enhancement Mode MOSFET

FEATURES

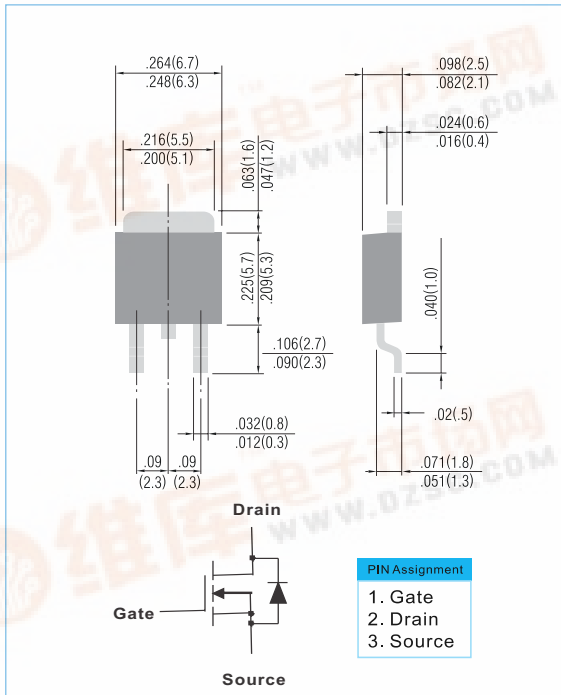
- $R_{DS(ON)}$, $V_{GS}@10V, I_{DS}@10A=40m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V, I_{DS}@8.0A=50m\Omega$
- Advanced Trench Process Technology
- High Density Cell Design For Ultra Low On-Resistance
- Specially Designed for DC/DC Converters
- Fully Characterized Avalanche Voltage and Current
- Pb free product : 99% Sn above can meet RoHS environment substance directive request

MECHANICALDATA

- Case: TO-252 Molded Plastic
- Terminals : Solderable per MIL-STD-750D,Method 1036.3
- Marking : 15N06L

DPAK / TO-252

Unit: inch (mm)



Maximum RATINGS and Thermal Characteristics ($T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER	Symbol	Limit	Units
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	15	A
Pulsed Drain Current ¹⁾	I_{DM}	60	A
Maximum Power Dissipation	P_D	38 22	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	$^{\circ}C$
Avalanche Energy with Single Pulse $I_D=21A, V_{DD}=30V, L=0.5mH$	E_{AS}	120	mJ
Junction-to-Case Thermal Resistance	$R_{\theta JC}$	3.3	$^{\circ}C/W$
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

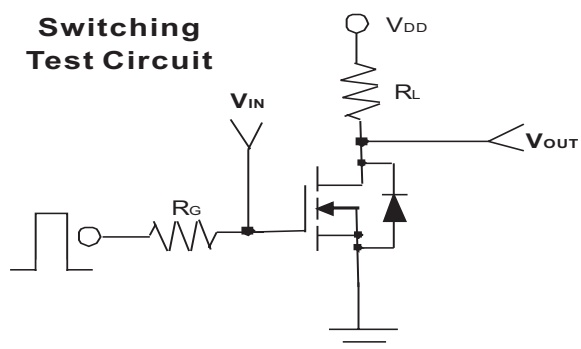


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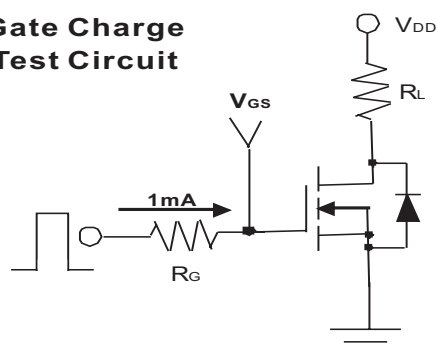
ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	-	3	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=8.0A$	-	36	50	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=10A$	-	32	40	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	-	-	1	μA
Gate Body Leakage	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	±100	nA
Forward Transconductance	g_{fS}	$V_{DS}=10V, I_D=10A$	20	-	-	S
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=30V, I_D=10A, V_{GS}=5V$	-	17.20	-	nC
		$V_{DS}=30V, I_D=10A$ $V_{GS}=10V$	-	32.5	-	
Gate-Source Charge	Q_{gs}		-	3.6	-	
Gate-Drain Charge	Q_{gd}		-	5.4	-	
Turn-On Delay Time	$T_{d(on)}$	$V_{DD}=30V, R_L=30\Omega$ $I_D=1A, V_{GEN}=10V$ $R_G=3.6\Omega$	-	13.2	16.5	ns
Turn-On Rise Time	t_{rr}		-	5.8	7.6	
Turn-Off Delay Time	$t_{d(off)}$		-	42	55	
Turn-Off Fall Time	t_f		-	6.2	7.8	
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V$ $f=1.0MHz_z$	-	1750	-	pF
Output Capacitance	C_{oss}		-	130	-	
Reverse Transfer Capacitance	C_{rss}		-	80	-	
Source-Drain Diode						
Max. Diode Forward Current	I_s	-	-	-	10	A
Diode Forward Voltage	V_{SD}	$I_s=10A, V_{GS}=0V$	-	0.9	1.2	V

Switching Test Circuit



Gate Charge Test Circuit



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

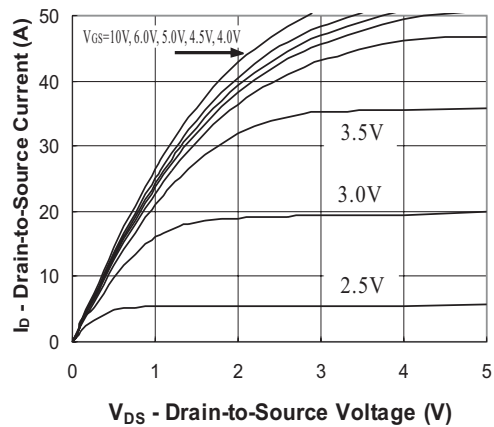


FIG.1- Output Characteristic

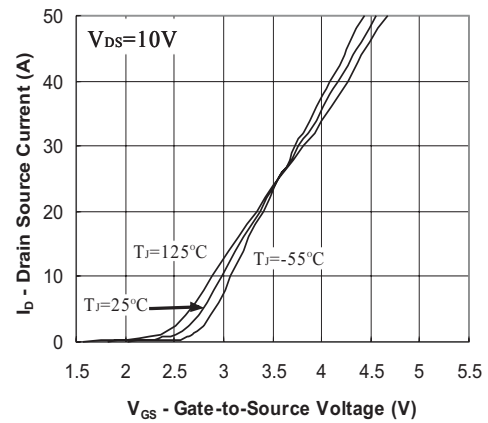


FIG.2- Transfer Characteristic

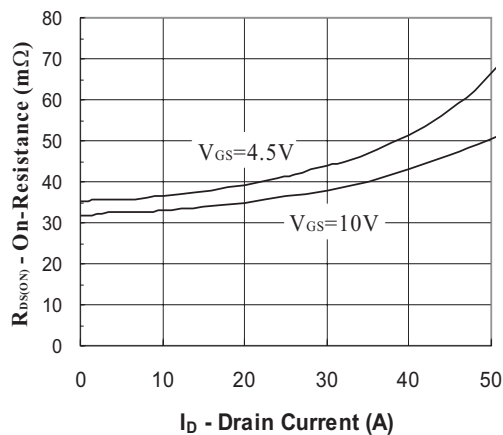


FIG.3- On Resistance vs Drain Current

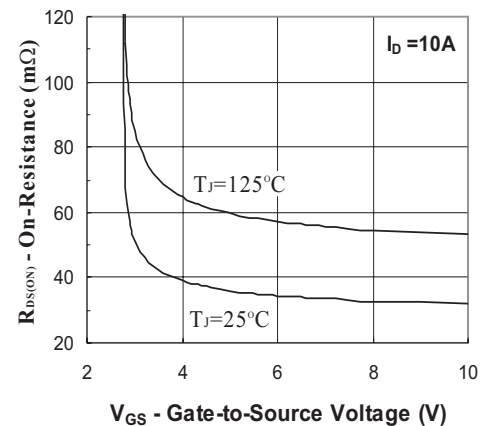


FIG.4- On Resistance vs Gate to Source Voltage

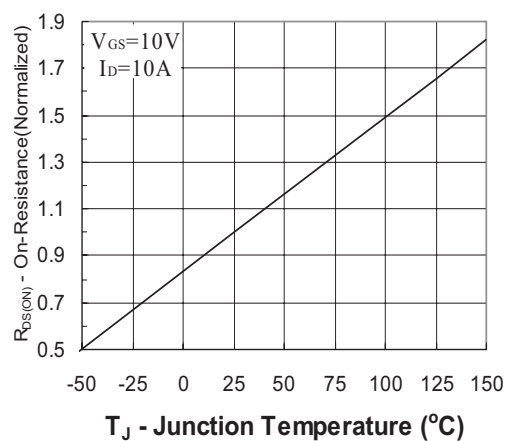


FIG.5- On Resistance vs Junction Temperature

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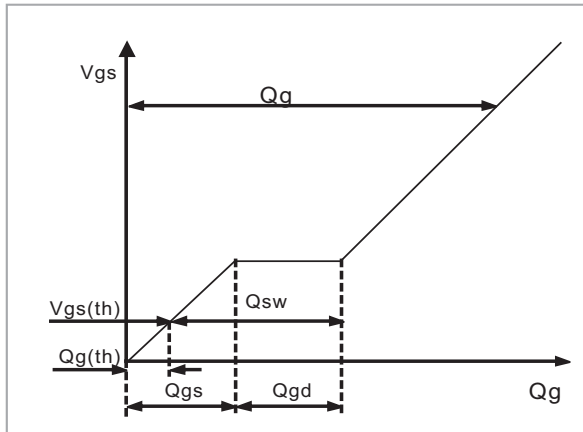


Fig. 6 - Gate Charge Waveform

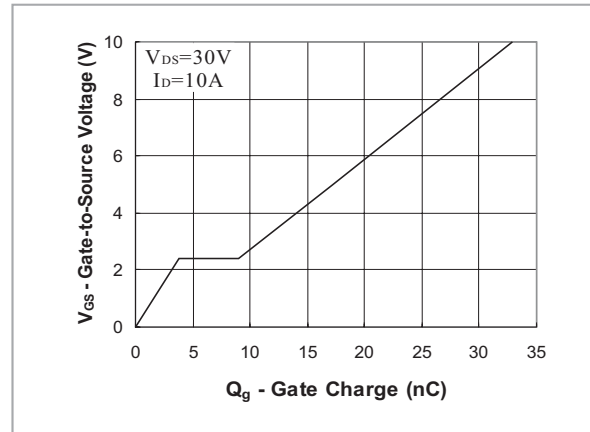


Fig. 7 - Gate Charge

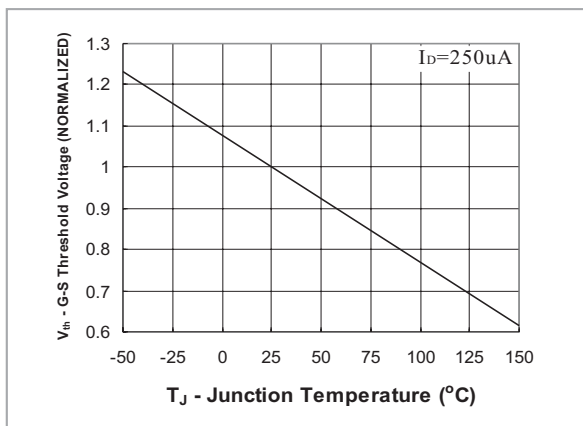


Fig. 8 - Threshold Voltage vs Temperature

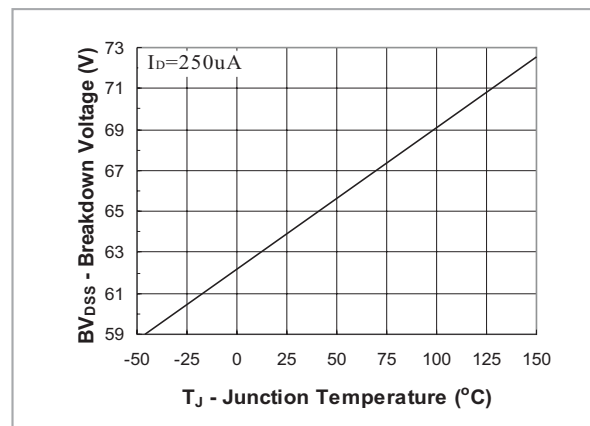


Fig. 9 - Breakdown Voltage vs Junction Temperature

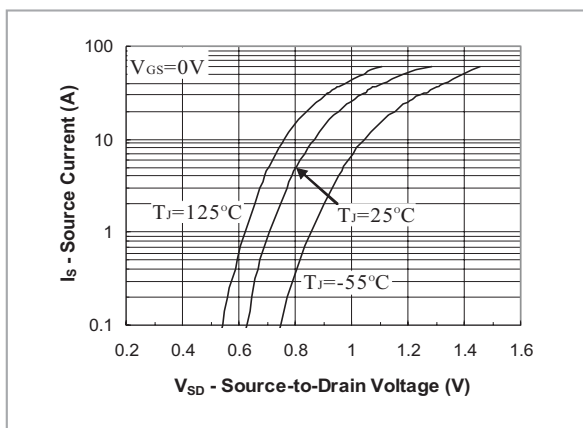


Fig. 10 - Source-Drain Diode Forward Voltage

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