PJD15N06L

60V N-Channel Enhancement Mode MOSFET

FEATURES

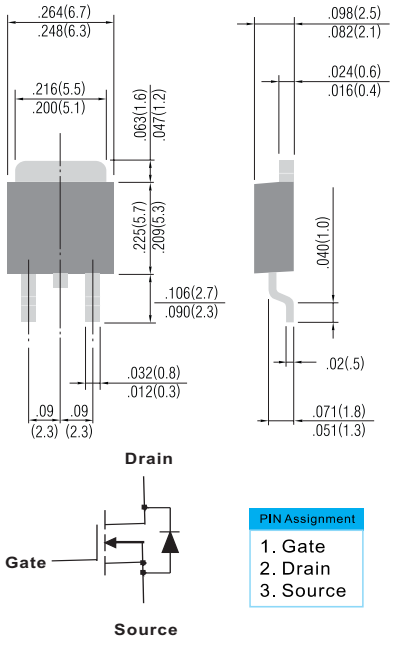
- $R_{DS(ON)}$, V_{GS}@10V,I_{DS}@10A=40mΩ
- $R_{DS(ON)}$, V_{GS}@4.5V,I_{DS}@8.0A=50mΩ

- 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°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	T_A=25°C T_A=75°C	P_D	38 22	W
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55 to + 150	°C
Avalanche Energy with Single Pulse ID=21A, VDD=30V, L=0.5mH		E_{AS}	120	mJ
Junction-to-Case Thermal Resistance		$R_{\theta JC}$	3.3	°C/W
Junction-to Ambient Thermal Resistance(PCB mounted)[2]		$R_{\theta JA}$	50	°C/W

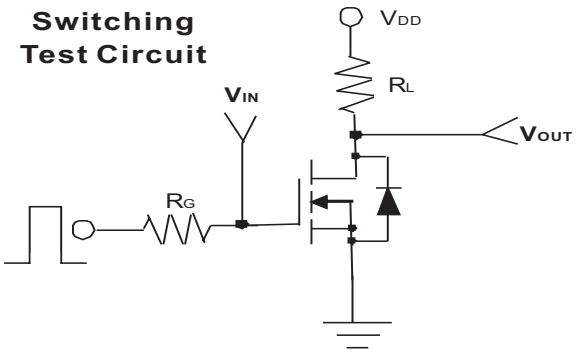
Note: 1. Maximum DC current limited by the package
2. Surface mounted on FR4 board, t ≤ 10 sec

PJD15N06L

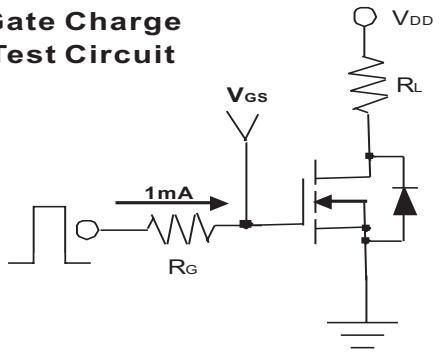
ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250uA	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	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	uA
Gate Body Leakage	I_{GSS}	V_{GS}=±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=30Ω I_D=1A , V_{GEN}=10V R_G=3.6Ω	-	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=1.0MH_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



PJD15N06L

Typical Characteristics Curves (T_A=25°C, unless otherwise noted)

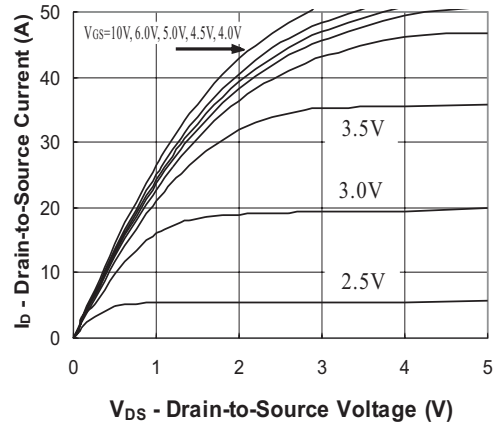


FIG.1- Output Characteristic

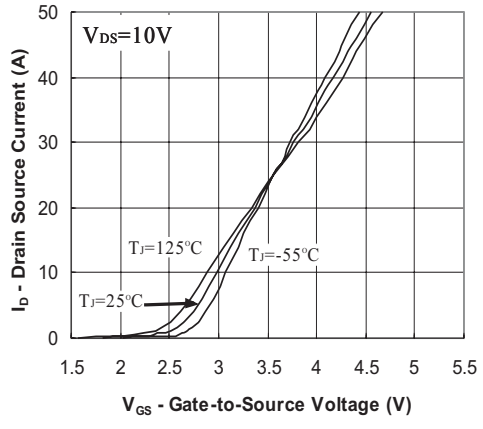


FIG.2- Transfer Characteristic

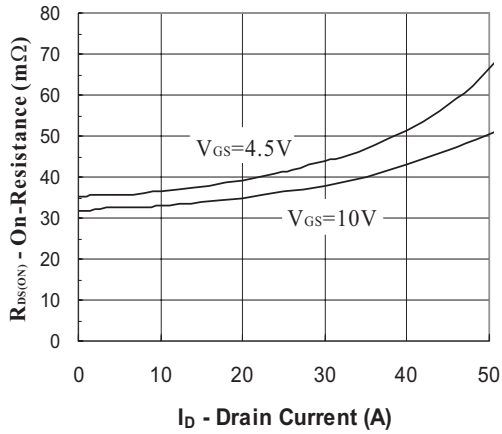


FIG.3- On Resistance vs Drain Current

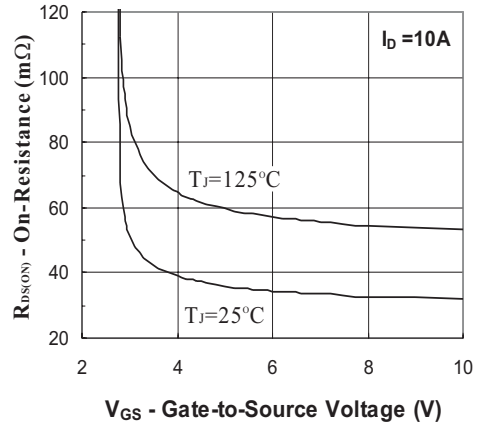


FIG.4- On Resistance vs Gate to Source Voltage

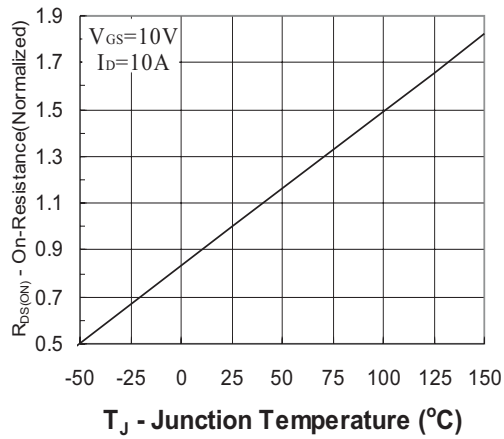


FIG.5- On Resistance vs Junction Temperature

PJD15N06L

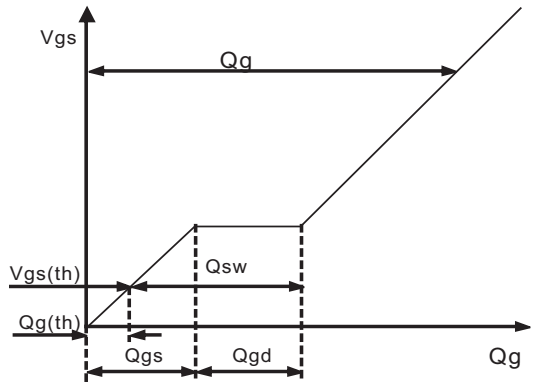


Fig.6 - Gate Charge Waveform

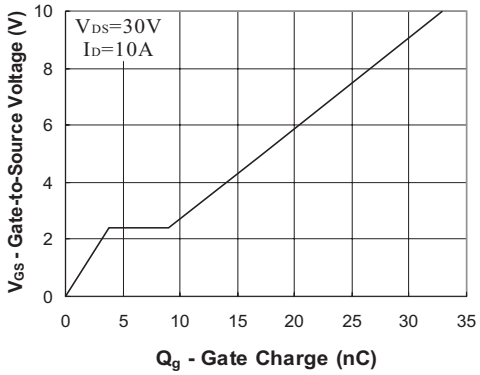


Fig.7 - Gate Charge

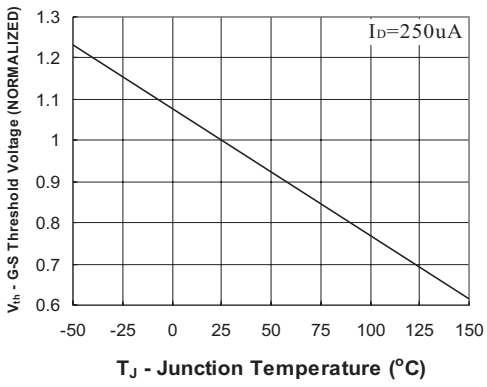


Fig.8 - Threshold Voltage vs Temperature

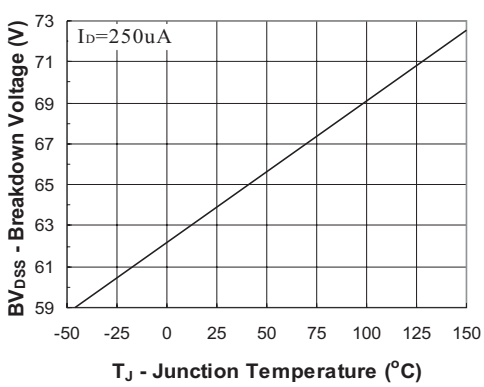


Fig.9 - Breakdown Voltage vs Junction Temperature

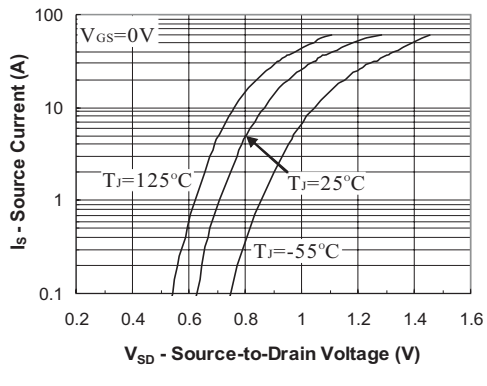


Fig.10 - Source-Drain Diode Forward Voltage

LEGAL STATEMENT