PANJIT SEMI CONDUCTOR

PJP75N06

60V N-Channel Enhancement Mode MOSFET

FEATURES

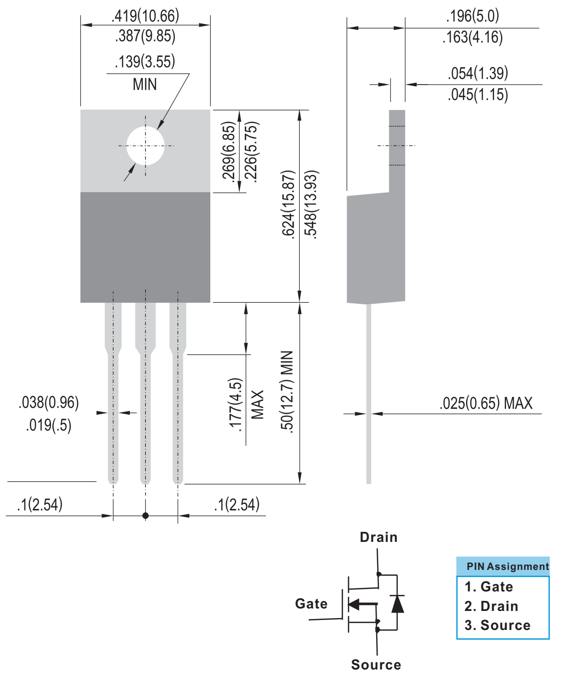
- $R_{DS(ON)}$, V_{GS}@10V,I_{DS}@30A=13mΩ
- $R_{DS(ON)}$, V_{GS}@4.5V,I_{DS}@30A=18mΩ

- Advanced Trench Process Technology
- High Density Cell Design For Ultra Low On-Resistance
- Specially Designed for Converters and Power Motor Controls
- Fully Characterized Avalanche Voltage and Current
- Pb free product : 99% Sn above can meet RoHS environment substance directive request

MECHANICALDATA

- Case: TO-220 Molded Plastic
- Terminals : Solderable per MIL-STD-750D,Method 1036.3
- Marking : P75N06

TO-220AB 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	75	A
Pulsed Drain Current [1)]		I_{DM}	350	A
Maximum Power Dissipation	T_A=25°C T_A=75°C	P_D	105 62.5	W
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55 to + 150	°C
Avalanche Energy with Single Pulse ID=40A, VDD=25V, L=0.5mH		E_{AS}	400	mJ
Junction-to-Case Thermal Resistance		$R_{\theta JC}$	1.2	°C/W
Junction-to Ambient Thermal Resistance(PCB mounted)[2]		$R_{\theta JA}$	62	°C/W

Note: 1. Maximum DC current limited by the package

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

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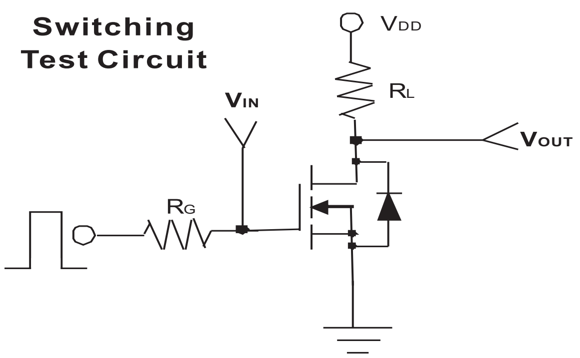
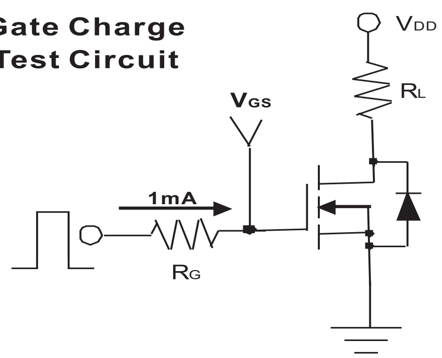
ELECTRICALCHARACTERISTICS

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=30A	-	13.5	18.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=30A	-	10.5	13.0	mΩ
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=15A	40	-	-	S
Dynamic						
Total Gate Charge	Q_g	V_{DS}=30V, I_D=30A, V_{GS}=5V	-	42	-	nC
		V_{DS}=30V, I_D=30A V_{GS}=10V	-	82	-	nC
Gate-Source Charge	Q_{gs}	V_{DS}=30V, I_D=30A V_{GS}=10V	-	10	-	nC
Gate-Drain Charge	Q_{gd}	V_{DS}=30V, I_D=30A V_{GS}=10V	-	13.5	-	nC
Turn-On Delay Time	$T_{d(on)}$	V_{DD}=30V, R_L=15Ω I_D=2A, V_{GEN}=10V R_G=2.5Ω	-	18.5	25	ns
Turn-On Rise Time	t_{rr}		-	16.5	20	ns
Turn-Off Delay Time	$t_{d(off)}$		-	60	90	ns
Turn-Off Fall Time	t_f		-	9.0	20	ns
Input Capacitance	C_{iss}	V_{DS}=25V, V_{GS}=0V f=1.0MHz	-	4200	-	pF
Output Capacitance	C_{oss}		-	810	-	pF
Reverse Transfer Capacitance	C_{rss}		-	550	-	pF
Source-Drain Diode						
Max. Diode Forward Current	I_s	-	-	-	75	A
Diode Forward Voltage	V_{SD}	I_S=30A, V_{GS}=0V	-	0.98	1.5	V





PJP75N06

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

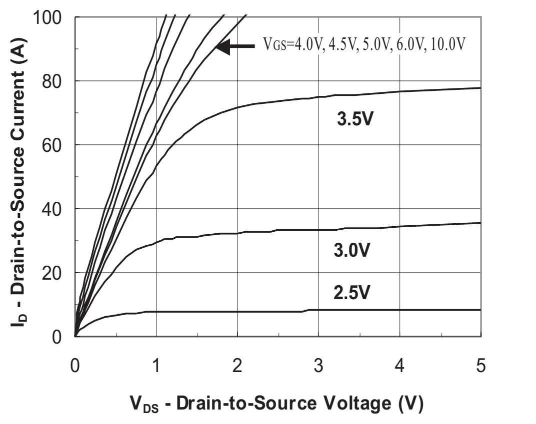


FIG.1- Output Characteristic

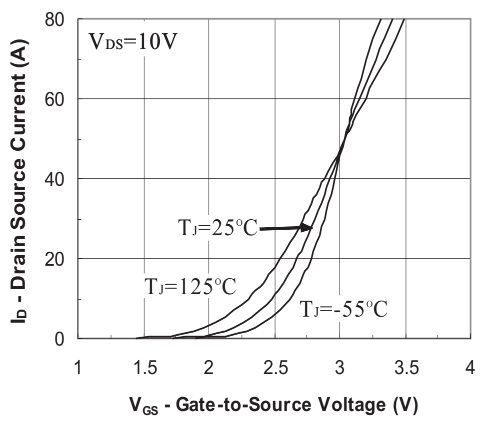


FIG.2- Transfer Characteristic

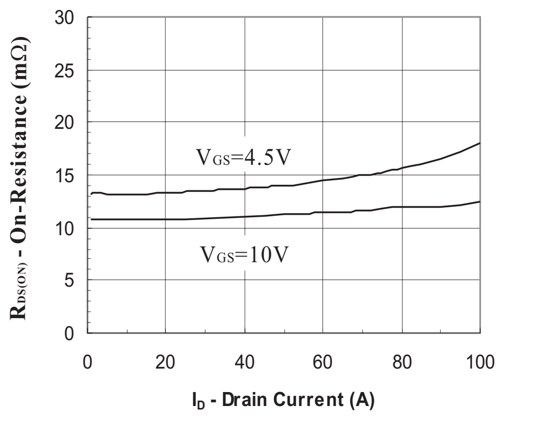


FIG.3- On Resistance vs Drain Current

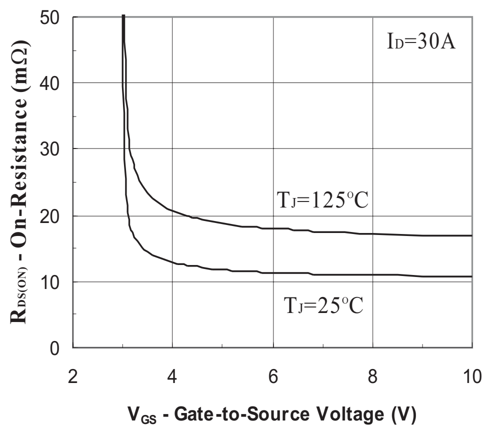


FIG.4- On Resistance vs Gate to Source Voltage

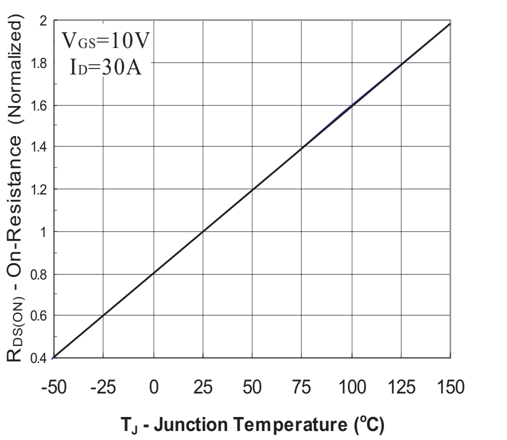


FIG.5- On Resistance vs Junction Temperature

PJP75N06

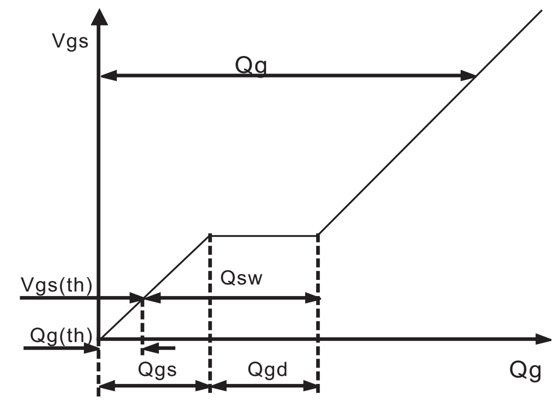


Fig.6 - Gate Charge Waveform

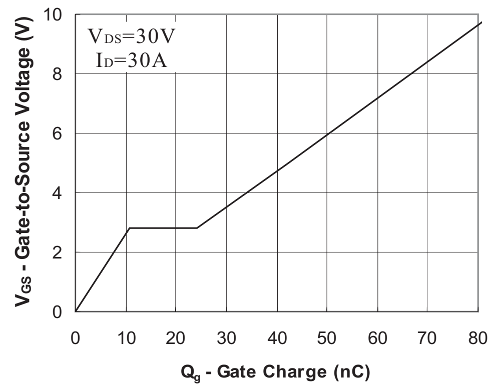


Fig.7 - Gate Charge

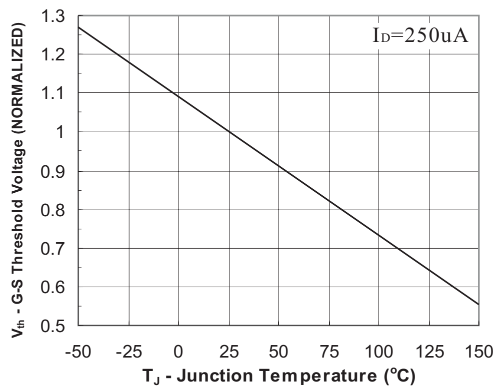


Fig.8 - Threshold Voltage vs Temperature

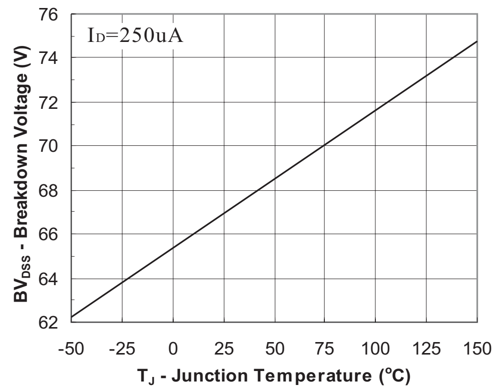


Fig.9 - Breakdown Voltage vs Junction Temperature

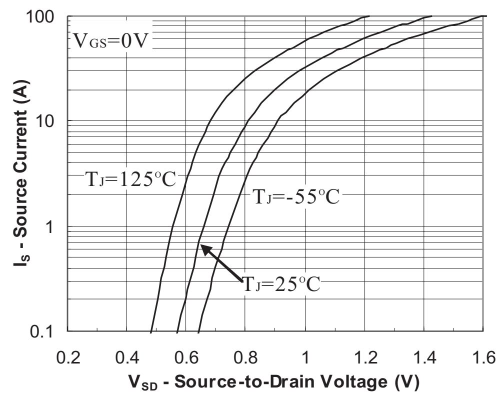


Fig.10 - Source-Drain Diode Forward Voltage

LEGAL STATEMENT