PJP75N75

75V N-Channel Enhancement Mode MOSFET

FEATURES

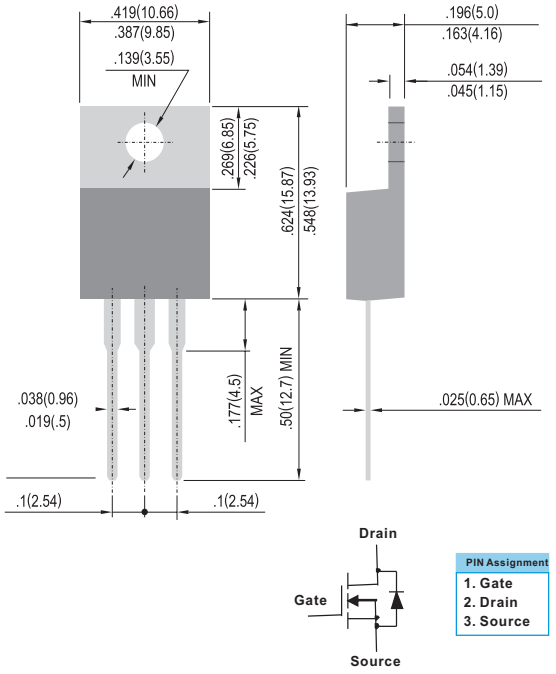
- $R_{DS(ON)}$, V_{GS}@10V,I_{DS}@30A=12.5mΩ
- $R_{DS(ON)}$, V_{GS}@4.5V,I_{DS}@30A=20mΩ

- 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-220AB Molded Plastic
- Terminals : Solderable per MIL-STD-750D,Method 1036.3
- Marking : P75N75

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}	75	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=41A, VDD=25V, L=0.5mH		E_{AS}	420	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

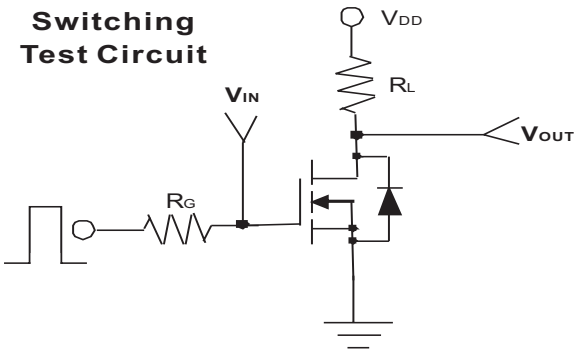
PAN JIT RESERVES THE RIGHT TO IMPROVE PRODUCT DESIGN,FUNCTIONS AND RELIABILITY WITHOUT NOTICE

PJP75N75

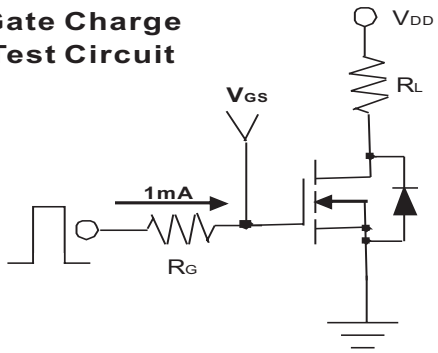
ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250uA	75	-	-	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	-		20.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=30A	-		12.5	
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	30	-	-	S
Dynamic						
Total Gate Charge	Q_g	V_{DS}=30V,I_D=30A,V_{GS}=5V	-	33	-	nC
		V_{DS}=30V, I_D=30A V_{GS}=10V	-	63.5	-	
Gate-Source Charge	Q_{gs}		-	9.2	-	
Gate-Drain Charge	Q_{gd}		-	15	-	
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	20	ns
Turn-On Rise Time	t_{rr}		-	16.5	14	
Turn-Off Delay Time	$t_{d(off)}$		-	52	66	
Turn-Off Fall Time	t_f		-	8.1	9.6	
Input Capacitance	C_{iss}	V_{DS}=25V, V_{GS}=0V f=1.0MH_Z	-	3800	-	pF
Output Capacitance	C_{oss}		-	650	-	
Reverse Transfer Capacitance	C_{rss}		-	490	-	
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

Switching Test Circuit



Gate Charge Test Circuit



PJP75N75

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

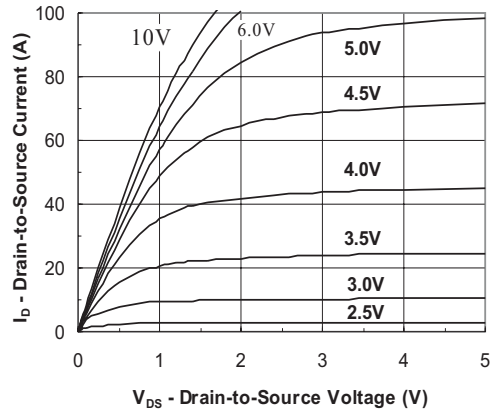


FIG.1- Output Characteristic

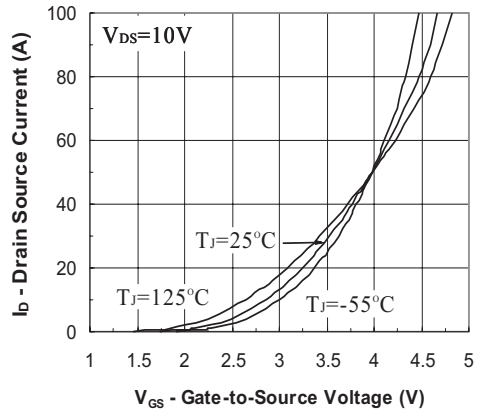


FIG.2- Transfer Characteristic

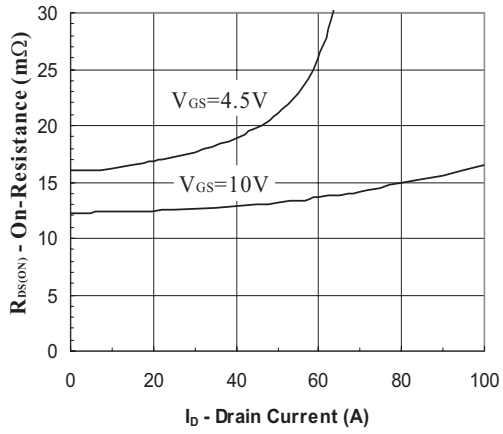


FIG.3- On Resistance vs Drain Current

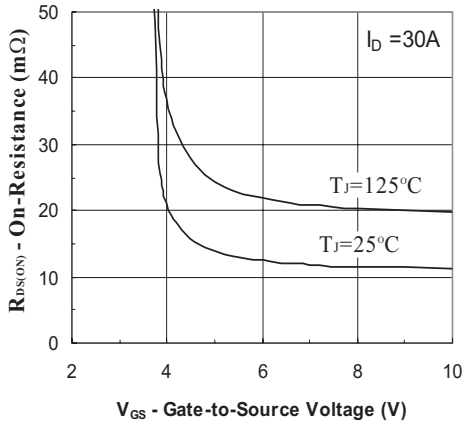


FIG.4- On Resistance vs Gate to Source Voltage

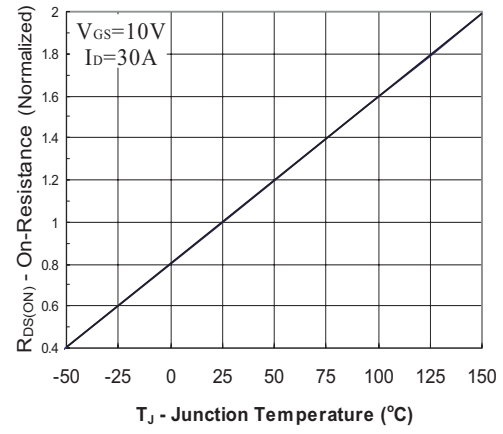


FIG.5- On Resistance vs Junction Temperature

PJP75N75

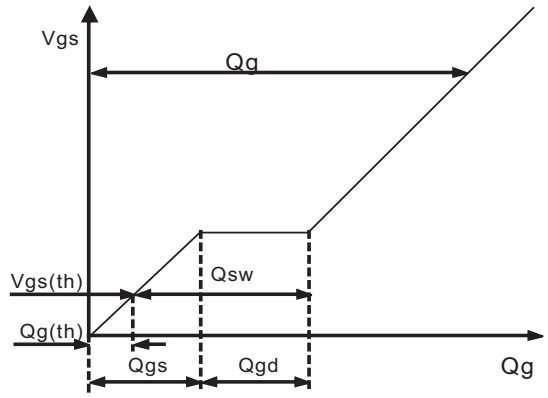


Fig.6 - Gate Charge Waveform

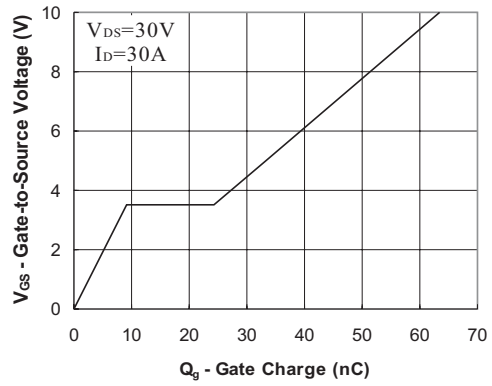


Fig.7 - Gate Charge

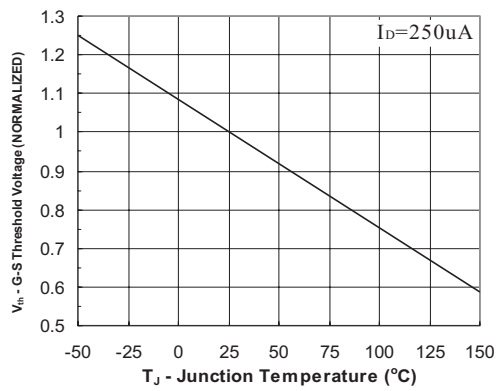


Fig.8 - Threshold Voltage vs Temperature

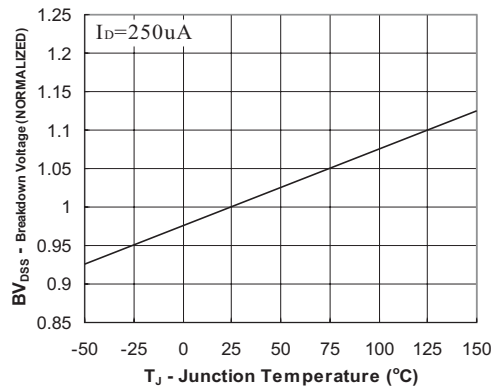


Fig.9 - Breakdown Voltage vs Junction Temperature

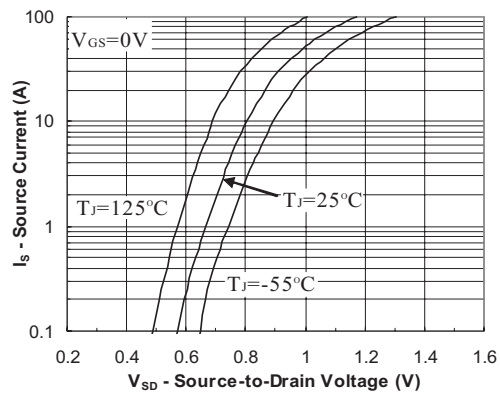


Fig.10 - Source-Drain Diode Forward Voltage

LEGAL STATEMENT

Copyright PanJit International, Inc 2006

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.