PJP75N75

75V N-Channel Enhancement Mode MOSFET

FEATURES

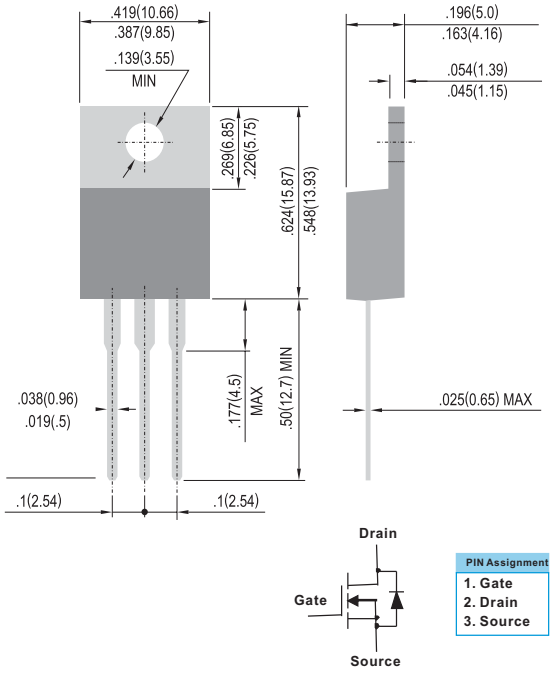
- $R_{DS(ON)}$, V_{GS}@10V,I_{DS}@30A=12mΩ
- $R_{DS(ON)}$, V_{GS}@4.5V,I_{DS}@30A=18mΩ

- 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

MECHANICAL DATA

- Case: TO-220AB Molded Plastic
- Terminals : Solderable per MIL-STD-750,Method 2026
- 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

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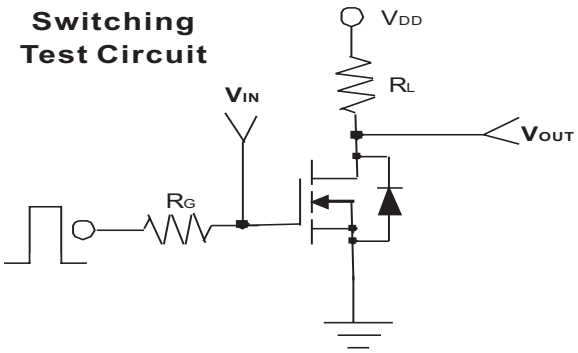
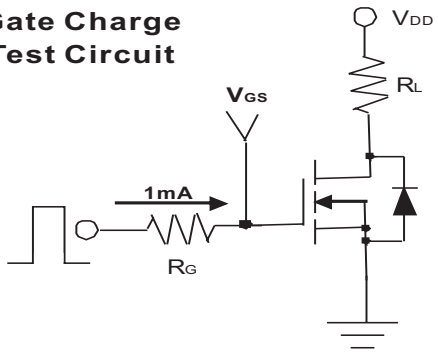
ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=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	-	14.2	18	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=30A	-	9.5	12	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	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	68	
Turn-Off Fall Time	t_f		-	8.1	12	
Input Capacitance	C_{iss}	V_{DS}=25V, V_{GS}=0V f=1.0MH_Z	-	3200	-	pF
Output Capacitance	C_{oss}		-	260	-	
Reverse Transfer Capacitance	C_{rss}		-	210	-	
Source-Drain Diode						
Max. Diode Forward Current	I_s	-	-	-	75	A
Diode Forward Voltage	V_{SD}	I_S=30A , V_{GS}=0V	-	0.92	1.5	V

Switching Test Circuit



Gate Charge Test Circuit



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

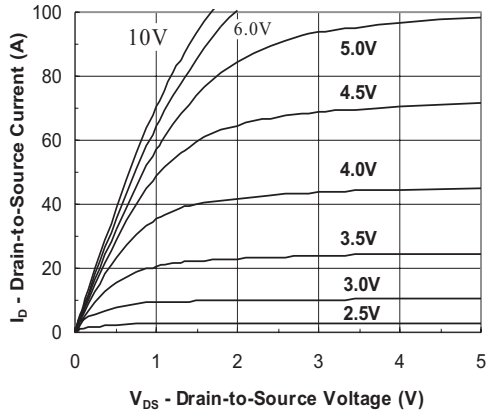

FIG.1- Output Characteristic

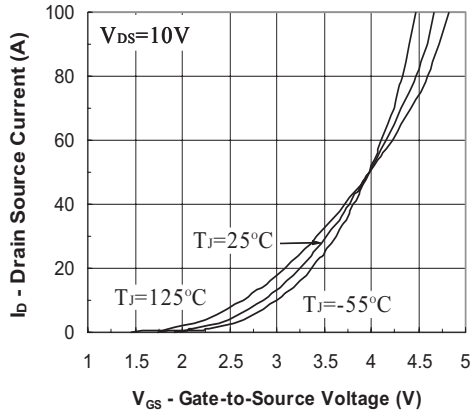

FIG.2- Transfer Characteristic

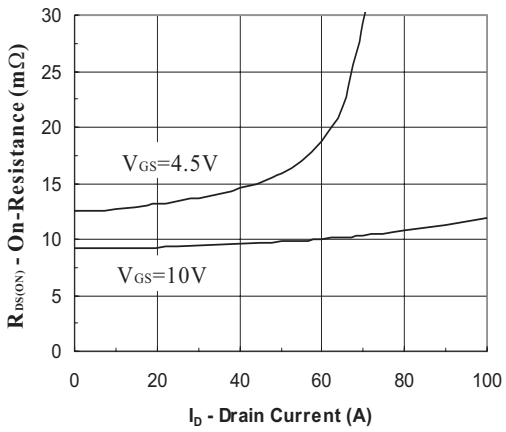

FIG.3- On Resistance vs Drain Current

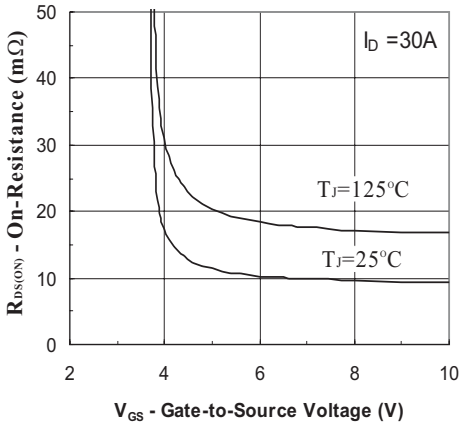

FIG.4- On Resistance vs Gate to Source Voltage

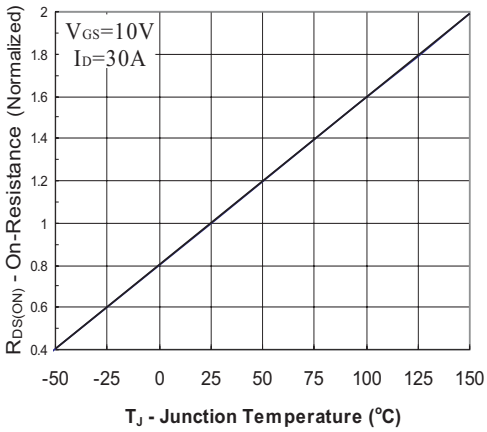

FIG.5- On Resistance vs Junction Temperature

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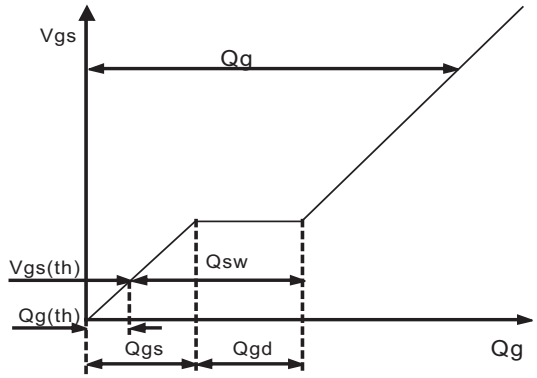

Fig.6 - Gate Charge Waveform

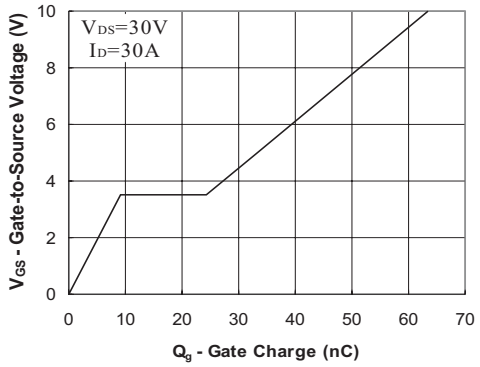

Fig.7 - Gate Charge

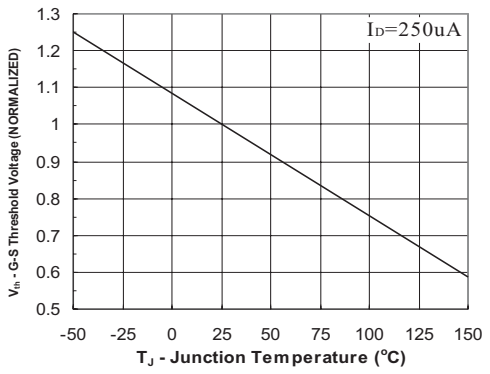

Fig.8 - Threshold Voltage vs Temperature

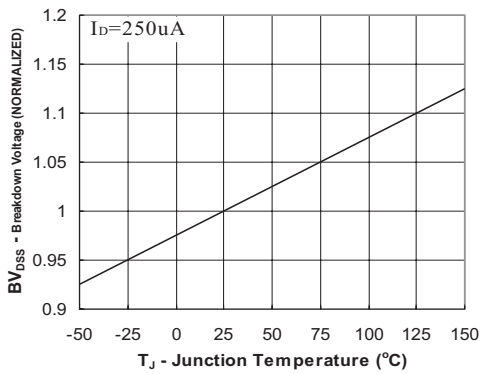

Fig.9 - Breakdown Voltage vs Junction Temperature

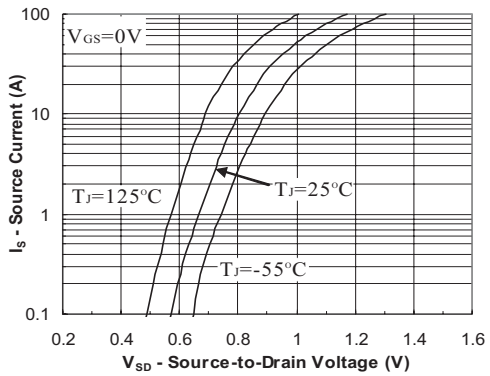

Fig.10 - Source-Drain Diode Forward Voltage

LEGAL STATEMENT