

PJP1N80 / PJU1N80

800V N-Channel Enhancement Mode MOSFET

TO-220AB/TO-251

FEATURES

- 1A, 800V, $R_{DS(ON)}=16\Omega@V_{GS}=10V, I_D=0.5A$
- Low ON Resistance
- Fast Switching
- Low Gate Charge
- Fully Characterized Avalanche Voltage and Current
- Specially Designed for AC Adapter, Battery Charge and SMPS
- In compliance with EU RoHs 2002/95/EC Directives

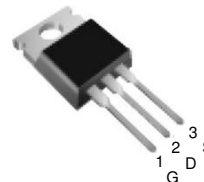
MECHANICAL DATA

- Case: TO-220AB / TO-251 Molded Plastic
- Terminals : Solderable per MIL-STD-750,Method 2026

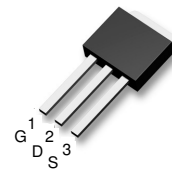
ORDERING INFORMATION

TYPE	MARKING	PACKAGE	PACKING
PJP1N80	P1N80	TO-220AB	50PCS/TUBE
PJU1N80	U1N80	TO-251	80PCS/TUBE

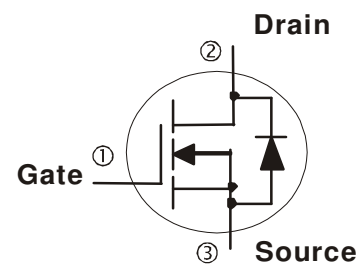
TO-220AB



TO-251



INTERNAL SCHEMATIC DIAGRAM



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

PARAMETER	Symbol	PJP1N80	PJU1N80	Units
Drain-Source Voltage	V_{DS}	800		V
Gate-Source Voltage	V_{GS}	± 30		V
Continuous Drain Current	I_D	1	1	A
Pulsed Drain Current ¹⁾	I_{DM}	4	4	A
Maximum Power Dissipation Derating factor	P_D	45 0.36	31 0.25	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150		$^\circ\text{C}$
Avalanche Energy with Single Pulse $I_{AS}=1.4A, V_{DD}=50V, L=10mH$	E_{AS}	9.8		mJ
Junction-to-Case Thermal Resistance	$R_{\theta JC}$	2.78	4	$^\circ\text{C/W}$
Junction-to Ambient Thermal Resistance	$R_{\theta JA}$	62.5	100	$^\circ\text{C/W}$

Note: 1. Maximum DC current limited by the package

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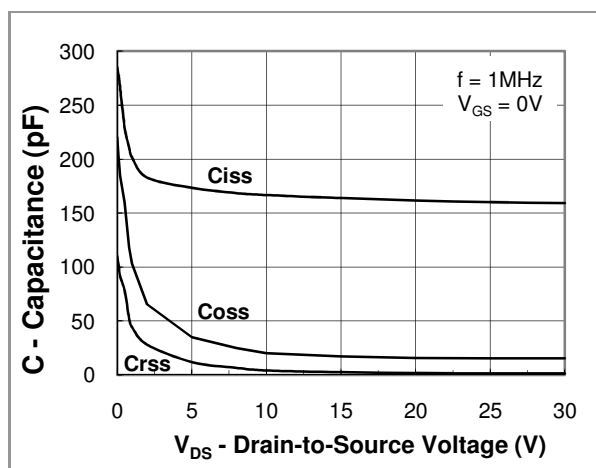
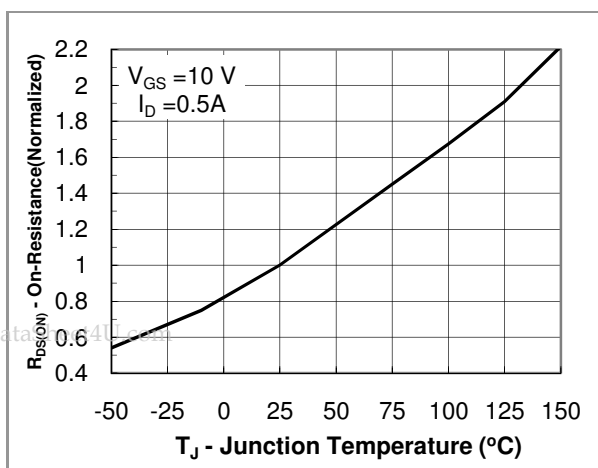
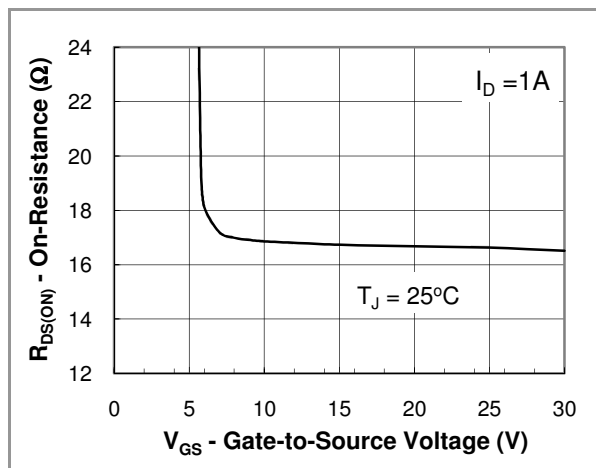
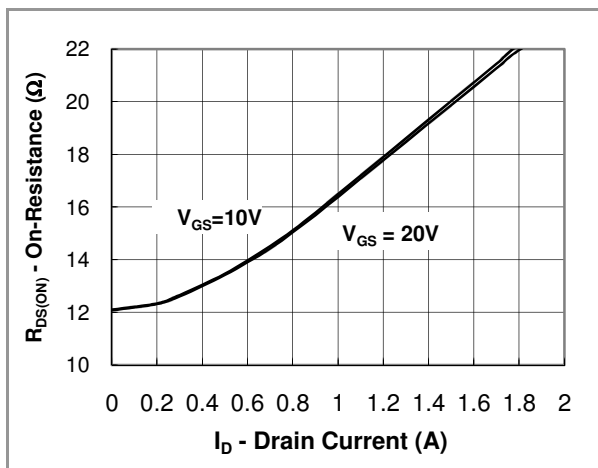
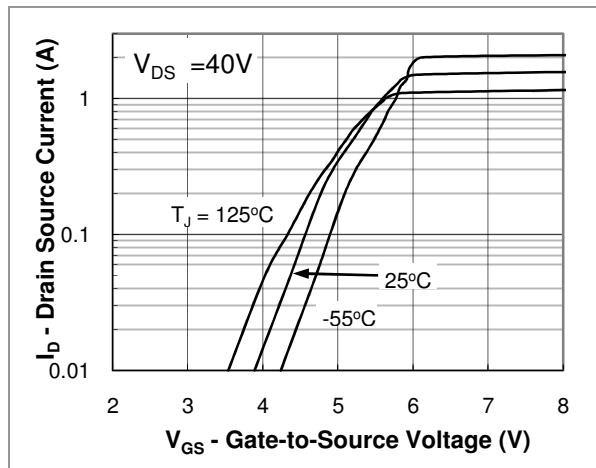
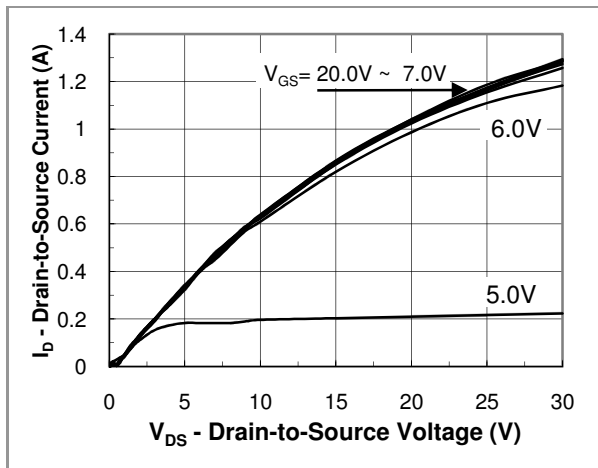
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	800	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	3.1	-	4.4	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 0.5A	-	13.5	16	Ω
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =800V, V _{GS} =0V	-	-	10	uA
Gate Body Leakage	I _{GSS}	V _{GS} =±30V, V _{DS} =0V	-	-	±100	nA
Dynamic						
Total Gate Charge	Q _g	V _{DS} =640V, I _D =0.8A V _{GS} =10V	-	6.8	-	nC
Gate-Source Charge	Q _{gs}		-	1.3	-	
Gate-Drain Charge	Q _{gd}		-	3.1	-	
Turn-On Delay Time	t _{d(on)}	V _{DD} =400V, I _D =0.8A V _{GS} =10V , R _G =25Ω	-	11.4	-	ns
Turn-On Rise Time	t _r		-	14.3	-	
Turn-Off Delay Time	t _{d(off)}		-	36.7	-	
Turn-Off Fall Time	t _f		-	15.7	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V f=1.0MHz	-	160	200	pF
Output Capacitance	C _{oss}		-	15	19	
Reverse Transfer Capacitance	C _{rss}		-	1.35	1.75	
Source-Drain Diode						
Max. Diode Forward Current	I _S	-	-	-	1.0	A
Max.Pulsed Source Current	I _{SM}	-	-	-	4.0	A
Diode Forward Voltage	V _{SD}	I _S =1A , V _{GS} =0V	-	-	1.5	V
Reverse Recovery Time	t _{rr}	V _{GS} =0V, I _F =1A di/dt=100A/us	-	160	-	ns
Reverse Recovery Charge	Q _{rr}		-	0.3	-	uC

NOTE : Plus Test: Pluse Width ≤ 300us, Duty Cycle ≤ 2%.

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



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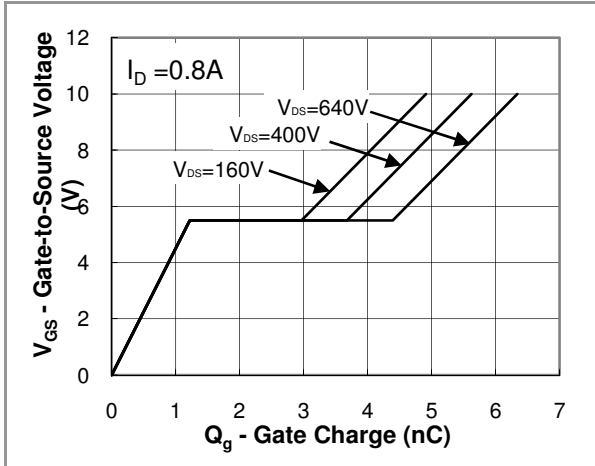


Fig. 7 Gate Charge Waveform

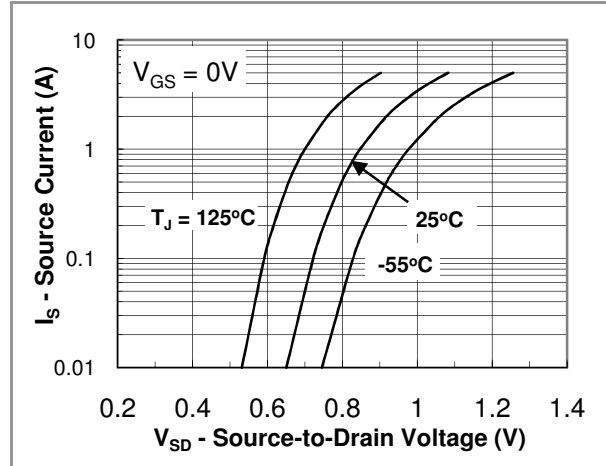


Fig.8 Source-Drain Diode Forward Voltage

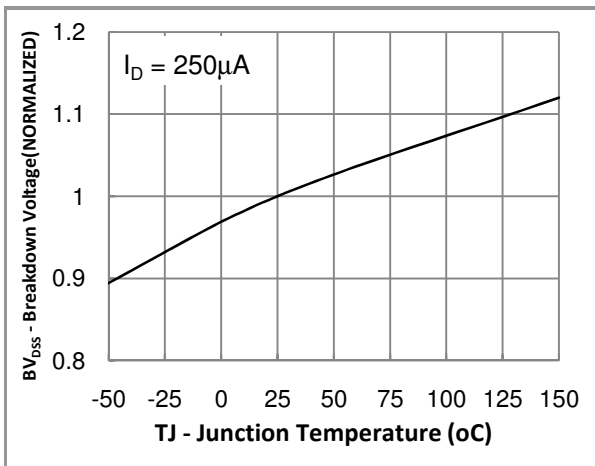


Fig.9 Breakdown Voltage vs Junction Temperature



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LEGAL STATEMENT

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HALOGEN FREE PRODUCT DECLARATION

(Use green molding compound:ELER-8)

1. Pan Jit can produce halogen free product use molding compound for packing from Mar.2008 that contain Br<700 ppm,Cl<700ppm, Br+Cl<1000ppm,Sb₂O₃<100ppm.
2. If your company need halogen free product shall be note requirement green compound material on order for the halogen free product request.