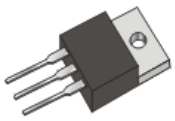
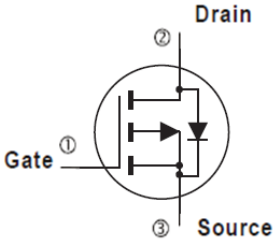
PJP100P03

30V P-Channel Enhancement Mode MOSFET

Voltage	-30 V	Current	-100 A



TO-220AB



Features

- $R_{DS(ON)}$, V_{GS}@-10V,I_D@-20A<5mΩ
- $R_{DS(ON)}$, V_{GS}@-4.5V,I_D@-15A<7.5mΩ
- High switching speed
- Improved dv/dt capability
- Low Gate Charge
- Low reverse transfer capacitance
- Lead free in compliance with EU RoHS 2011/65/EU directive.
- Green molding compound as per IEC61249 Std..
  (Halogen Free)

Mechanical Data

- Case : TO-220AB Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0667 ounces, 1.89 grams

Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25°C	I_D	-100	A
	T_C=100°C		-63	
Pulsed Drain Current (Note 1)	T_C=25°C	I_{DM}	-400	
Power Dissipation	T_C=25°C	P_D	119	W
	T_C=100°C		48	
Continuous Drain Current	T_A=25°C	I_D	-15.8	A
	T_A=70°C		-12.6	A
Power Dissipation	T_A=25°C	P_D	2.0	W
Power Dissipation	T_A=70°C		1.3	
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150	°C
Typical Thermal Resistance (Note 4,5)	Junction to Case	$R_{\theta JC}$	1.05	°C/W
	Junction to Ambient	$R_{\theta JA}$	62.5	

- Limited only By Maximum Junction Temperature

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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	-30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250uA	-1	-1.6	-2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=-10V,I_D=-20A	-	3.9	5	mΩ
		V_{GS}=-4.5V,I_D=-15A	-	5.7	7.5	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V,V_{GS}=0V	-	-	-1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
Dynamic (Note 6)						
Total Gate Charge	Q_g	V_{DS}=-15V, I_D=-10A, V_{GS}=-10V (Note 2,3)	-	107	-	nC
Gate-Source Charge	Q_{gs}		-	18	-	
Gate-Drain Charge	Q_{gd}		-	18	-	
Input Capacitance	Ciss	V_{DS}=-25V, V_{GS}=0V, f=1.0MHZ	-	6067	-	pF
Output Capacitance	Coss		-	709	-	
Reverse Transfer Capacitance	Crss		-	361	-	
Turn-On Delay Time	$td_{(on)}$	V_{DS}=-15V,I_D=-1A, V_{GS}=-10V, R_G=6Ω (Note 2,3)	-	22	-	ns
Turn-On Rise Time	t_r		-	48	-	
Turn-Off Delay Time	$td_{(off)}$		-	197	-	
Turn-Off Fall Time	t_f		-	90	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	-100	A
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V	-	-0.68	-1	V

NOTES :

1. Pulse width≤300us, Duty cycle≤2%
2. Essentially independent of operating temperature typical characteristics
3. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J =25°C.
4. The maximum current rating is package limited
5. $R_{\Theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. Mounted on a 1 inch^2 with 2oz.square pad of copper.
6. Guaranteed by design, not subject to production testing

PJP100P03

TYPICAL CHARACTERISTIC CURVES

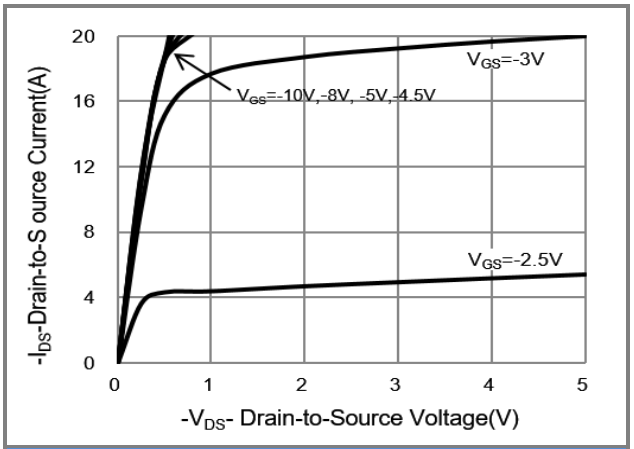

Fig.1 Output Characteristics

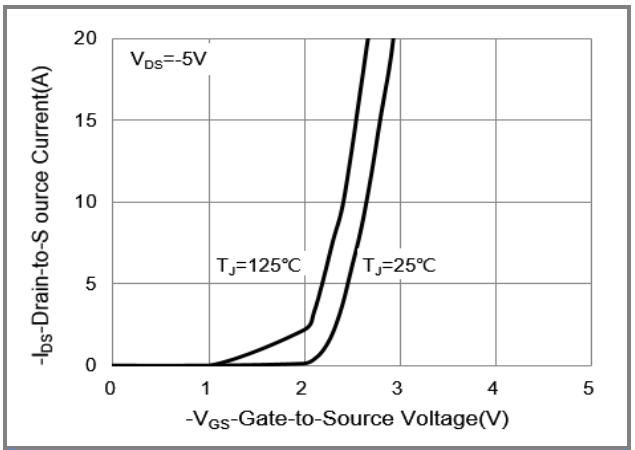

Fig.2 Transfer Characteristics

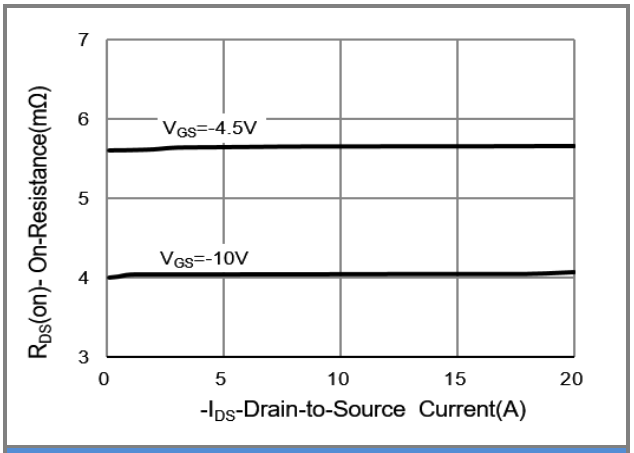

Fig.3 On-Resistance vs. Drain Current

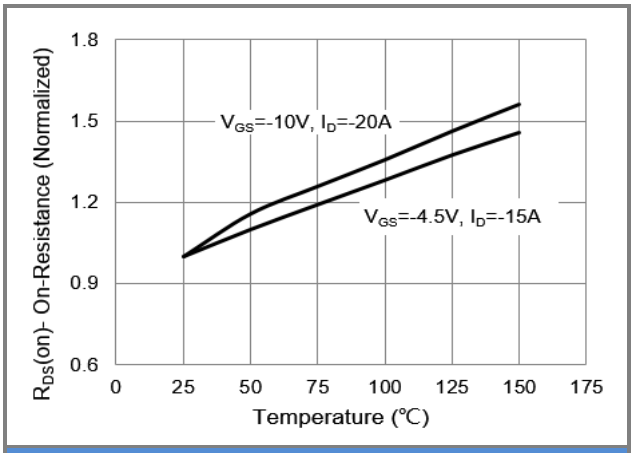

Fig.4 On-Resistance vs. Junction Temperature

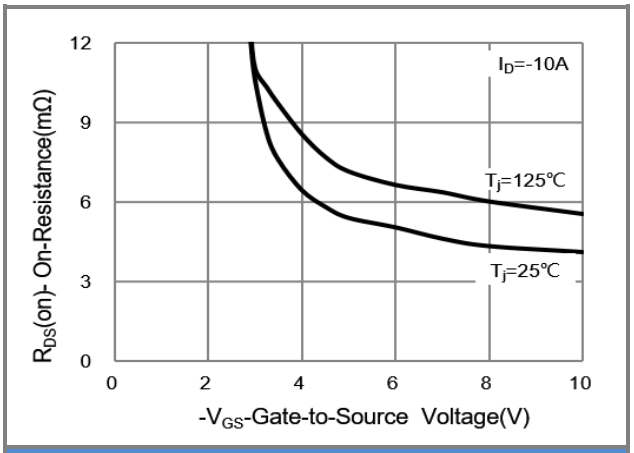

Fig.5 On-Resistance Variation with VGS.

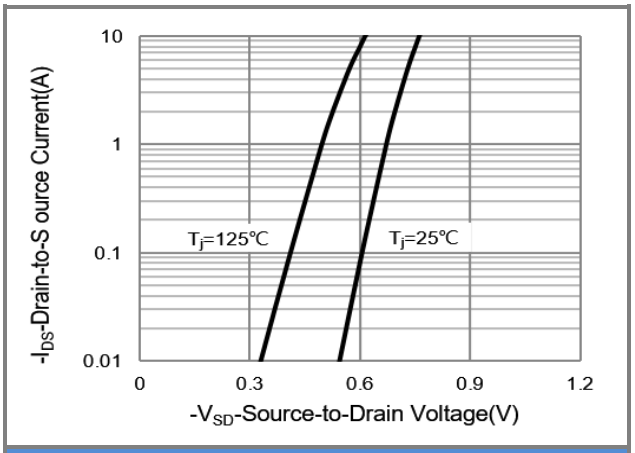

Fig.6 Body Diode Characteristics

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TYPICAL CHARACTERISTIC CURVES

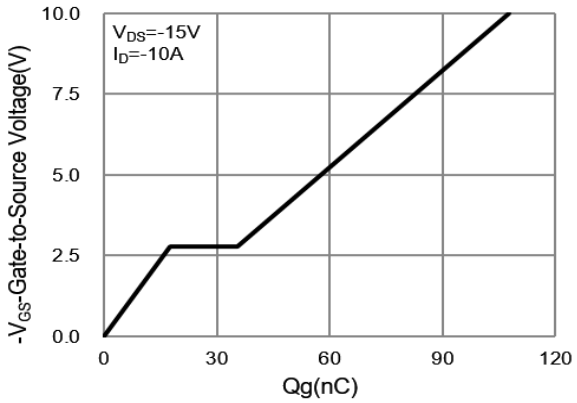

Fig.7 Gate Charge

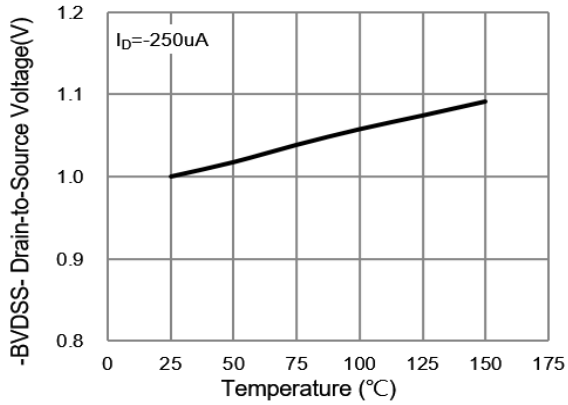

Fig.8 Breakdown Voltage Variation vs. Temperature

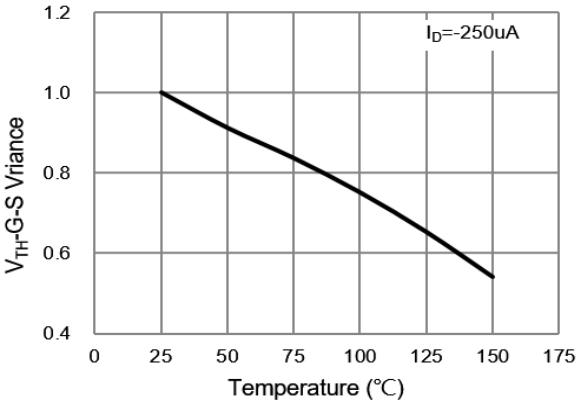

Fig.9 Threshold Voltage Variation with Temperature

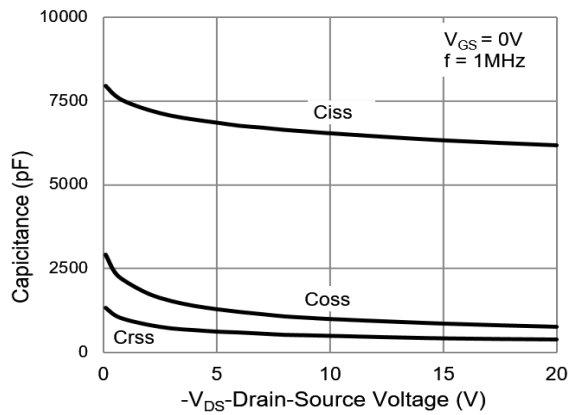

Fig.10 Capacitance vs. Drain-Source Voltage

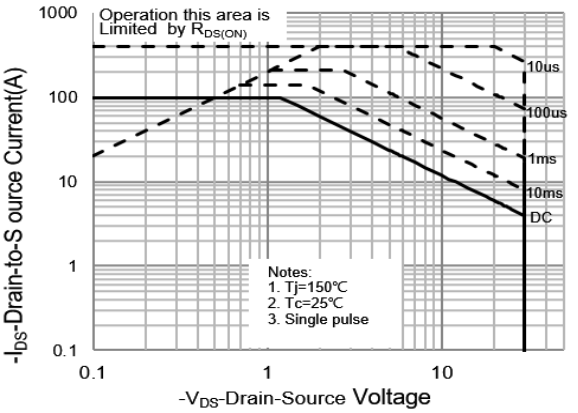

Fig.11 Maximum Safe Operating Area

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TYPICAL CHARACTERISTIC CURVES

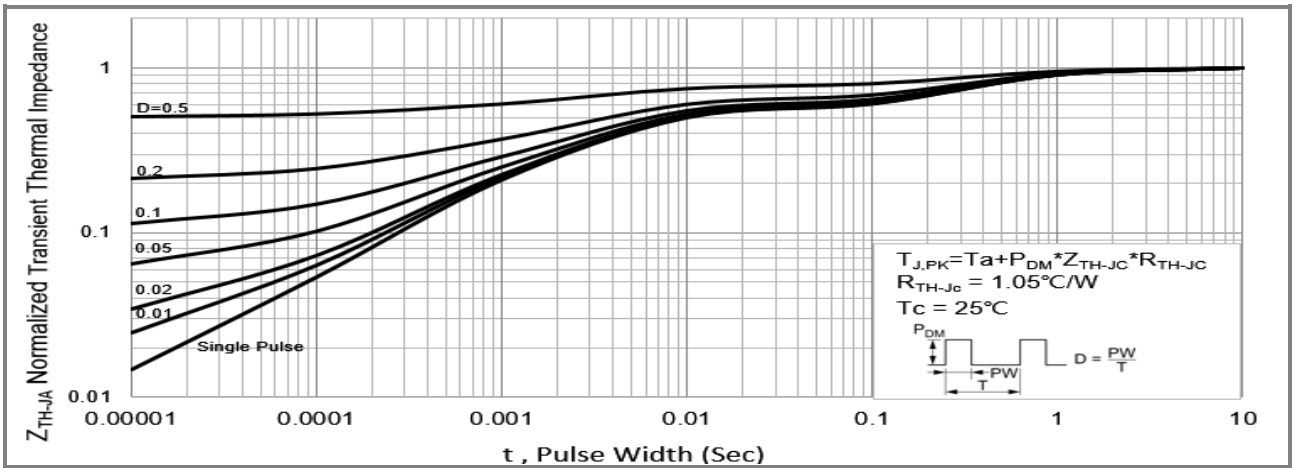
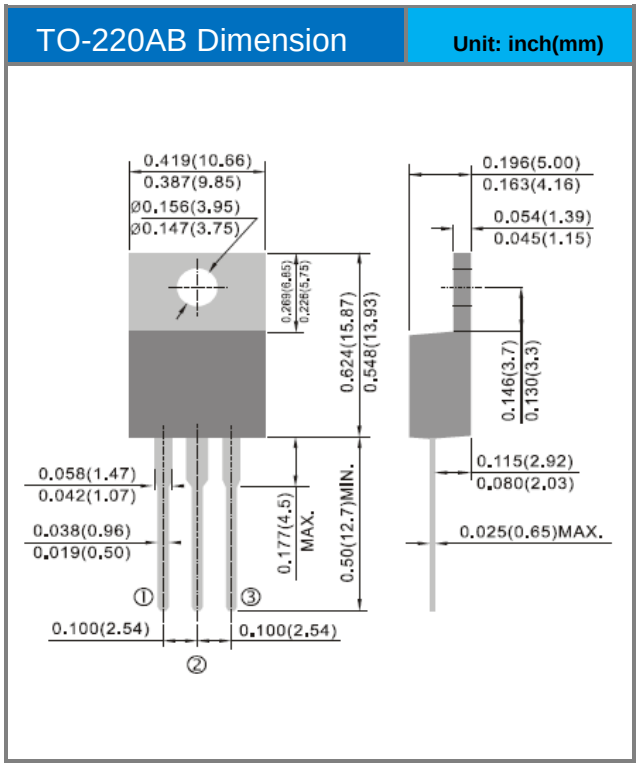


Fig.12 PJP100P03 Normalized Transient Thermal Impedance vs. Pulse Width

PJP100P03

Packaging Information .

TO-220AB Dimension — Unit: inch(mm)



PJP100P03

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJP100P03_T0_00001	TO-220AB	50pcs / Tube	P100P03	Halogen free

PJP100P03

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