

PJD25P03

30V P-Channel Enhancement Mode MOSFET

Voltage

-30 V

Current

-25 A

Features

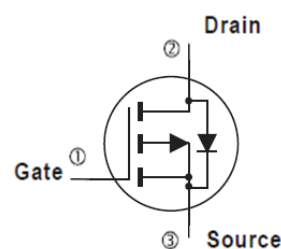
- $R_{DS(ON)}$, $V_{GS}@-10V, I_D@-4A < 30m\Omega$
- $R_{DS(ON)}$, $V_{GS}@-4.5V, I_D@-2A < 45m\Omega$
- High switching speed
- Improved dv/dt capability
- Low Gate Charge
- Low reverse transfer capacitance
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive)
- Green molding compound as per IEC61249 Std.. (Halogen Free)

Mechanical Data

- Case : TO-252AA Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0104 ounces, 0.297grams



TO-252AA



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

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C=25^{\circ}C$	I_D	-25	A
	$T_C=100^{\circ}C$		-16	
Pulsed Drain Current ^(Note 1)	$T_C=25^{\circ}C$	I_{DM}	-50	
Power Dissipation	$T_C=25^{\circ}C$	P_D	30	W
	$T_C=100^{\circ}C$		12	
Continuous Drain Current	$T_A=25^{\circ}C$	I_D	-6.5	A
	$T_A=70^{\circ}C$		-5.0	
Power Dissipation	$T_A=25^{\circ}C$	P_D	2.0	W
Power Dissipation	$T_A=70^{\circ}C$		1.3	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	$^{\circ}C$
Typical Thermal Resistance ^(Note 4,5)	Junction to Case	$R_{\theta JC}$	4.2	$^{\circ}C/W$
	Junction to Ambient	$R_{\theta JA}$	62.5	

- Limited only By Maximum Junction Temperature



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Electrical Characteristics ($T_A=25^{\circ}\text{C}$ 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	-1.0	-1.6	-2.5	
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-4A	-	26	30	mΩ
		V _{GS} =-4.5V, I _D =-2A	-	36	45	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V	-	-	-1.0	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 =-5A, V _{GS} =-4.5V (Note 1,2)	-	7.8	-	nC
Gate-Source Charge	Q _{gs}		-	2.7	-	
Gate-Drain Charge	Q _{gd}		-	2.8	-	
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1.0MHZ	-	870	-	pF
Output Capacitance	C _{oss}		-	130	-	
Reverse Transfer Capacitance	C _{rss}		-	93	-	
Turn-On Delay Time	td _(on)	V _{DS} =-15V, ID=-1A, V _{GS} =-10V, R _G =6Ω (Note 1,2)	-	6.5	-	ns
Turn-On Rise Time	t _r		-	8.8	-	
Turn-Off Delay Time	td _(off)		-	73	-	
Turn-Off Fall Time	t _f		-	44	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	-25	A
Diode Forward Voltage	V _{SD}	I _S =-1A, V _{GS} =0V	-	-0.75	-1.0	V

NOTES :

1. Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
2. Essentially independent of operating temperature typical characteristics
3. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}=150^{\circ}\text{C}$. Ratings are based on low frequency and duty cycles to keep initial $T_J=25^{\circ}\text{C}$.
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 inch² with 2oz.square pad of copper
6. Guaranteed by design, not subject to production testing.

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TYPICAL CHARACTERISTIC CURVES

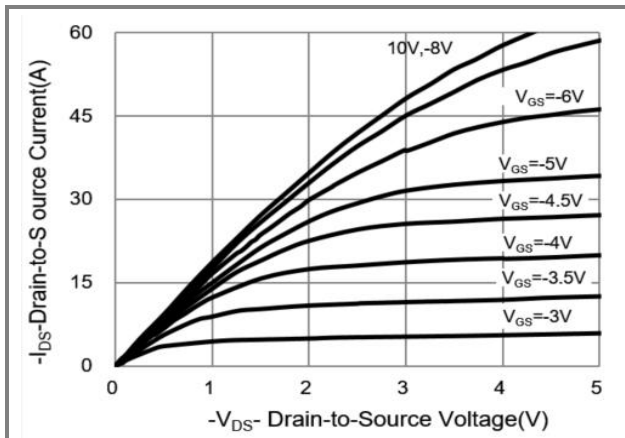


Fig.1 On-Region Characteristics

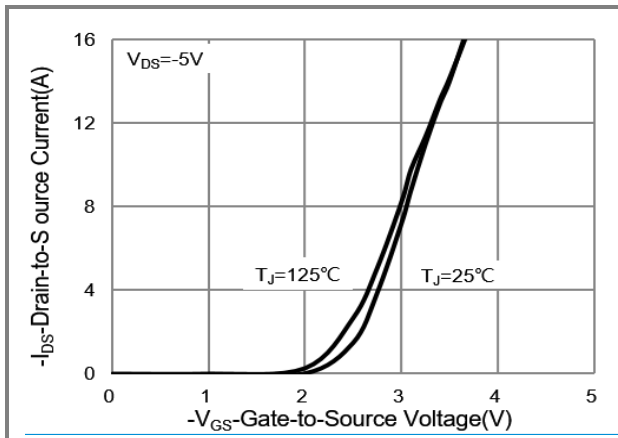


Fig.2 Transfer Characteristics

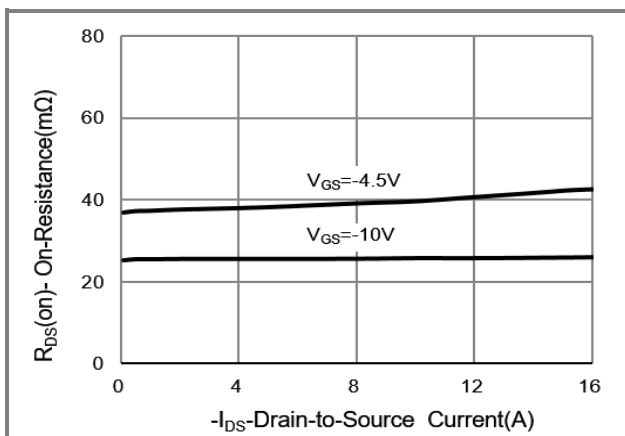


Fig.3 On-Resistance vs. Drain Current

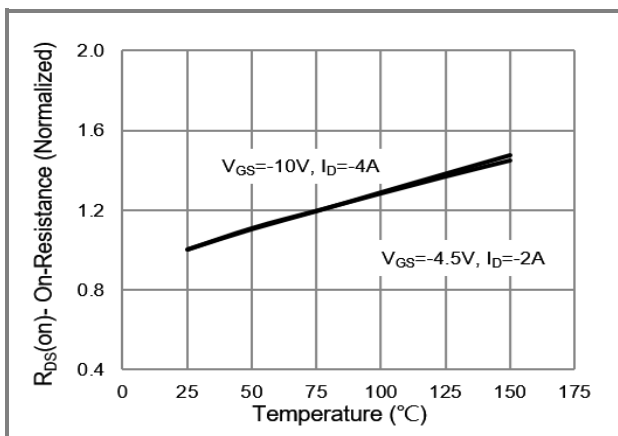


Fig.4 On-Resistance vs. Junction temperature

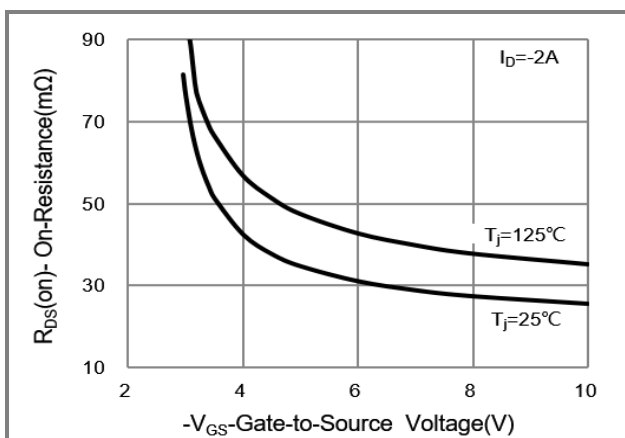


Fig.5 On-Resistance Variation with V_GS.

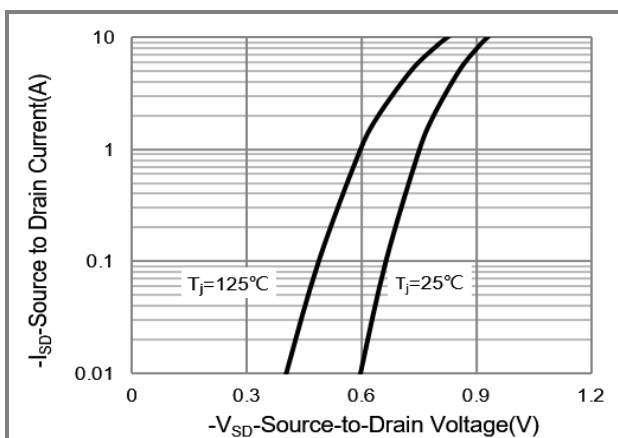
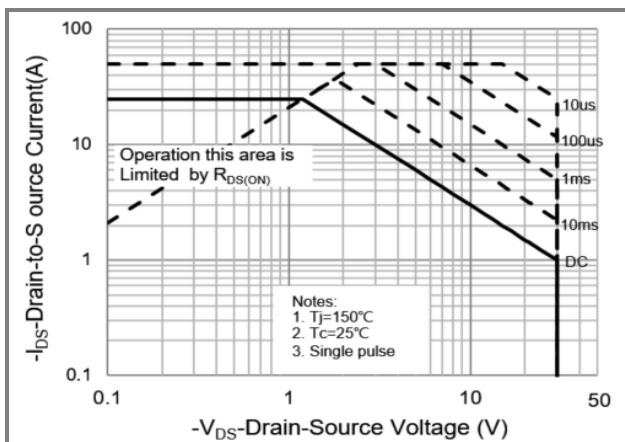
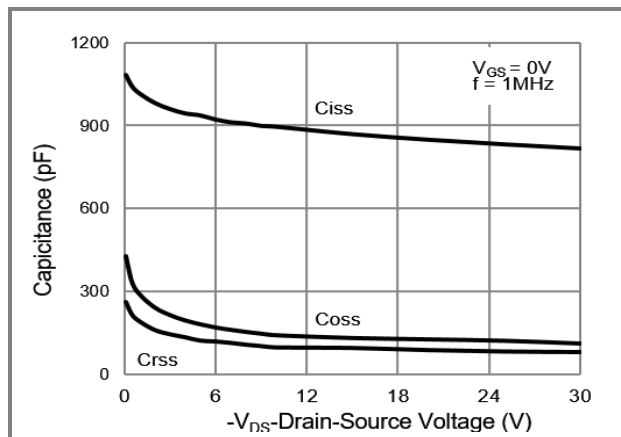
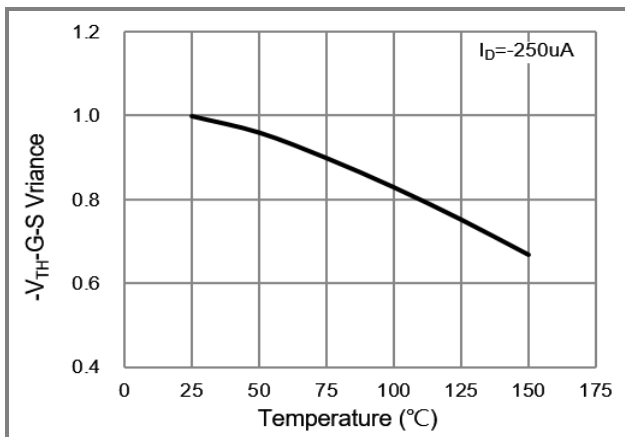
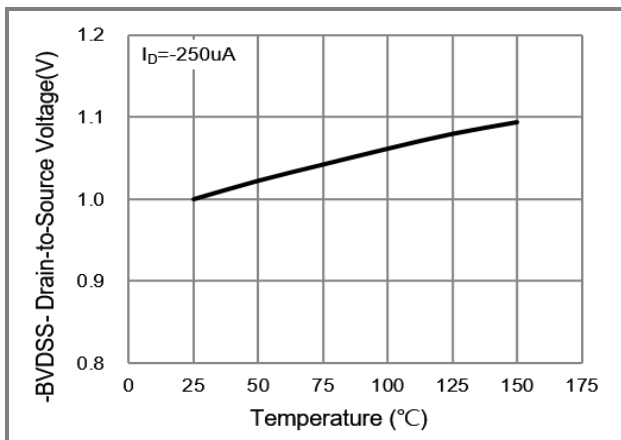
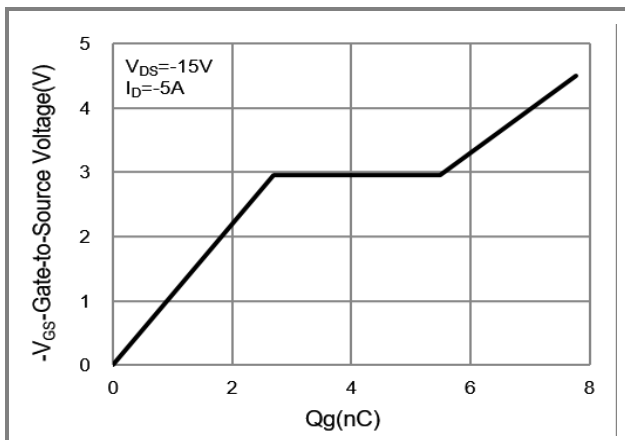


Fig.6 Body Diode Characteristics



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TYPICAL CHARACTERISTIC CURVES





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TYPICAL CHARACTERISTIC CURVES

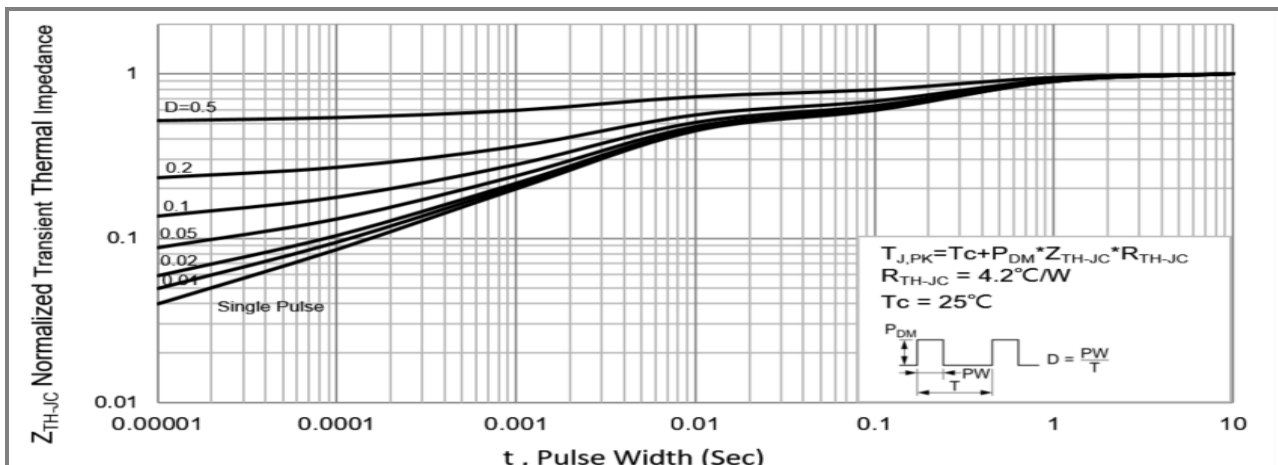
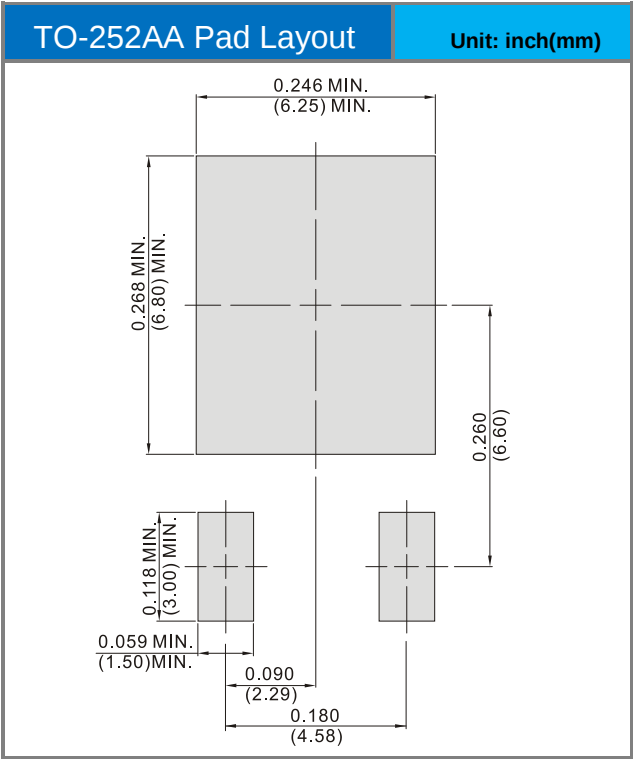
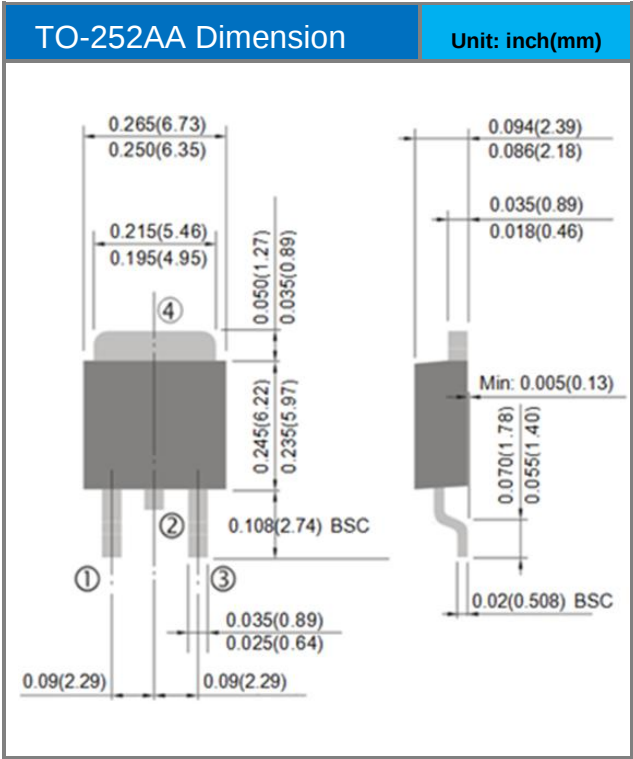


Fig.12 Normalized Thermal Transient Impedance



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Packaging Information





PJD25P03

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJD25P03_L2_00001	TO-252AA	3,000pcs / 13" reel	D25P03	Halogen free



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