



PJD10P10A

100V P-Channel Enhancement Mode MOSFET

Voltage

-100 V

Current

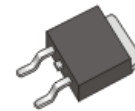
-10 A

Features

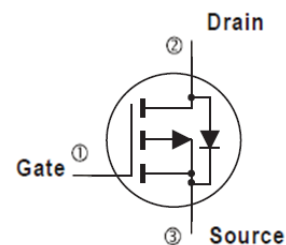
- $R_{DS(ON)}, V_{GS}@-10V, I_D@-5A < 210m\Omega$
- $R_{DS(ON)}, V_{GS}@-4.5V, I_D@-3A < 230m\Omega$
- High switching speed
- Improved dv/dt capability
- Low Gate Charge
- Low reverse transfer capacitance
- Lead free in compliance with EU RoHS 2011/65/EU directive.
- Green molding compound as per IEC61249 Std..
(Halogen Free)

Mechanical Data

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



TO-252AA



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

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V_{DS}	-100	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C=25^\circ\text{C}$	I_D	-10	A
	$T_C=100^\circ\text{C}$		-6	
Pulsed Drain Current (Note 1)	$T_C=25^\circ\text{C}$	I_{DM}	-40	
Power Dissipation	$T_C=25^\circ\text{C}$	P_D	54	W
	$T_C=100^\circ\text{C}$		22	
Continuous Drain Current	$T_A=25^\circ\text{C}$	I_D	-2.0	A
	$T_A=70^\circ\text{C}$		-1.6	A
Power Dissipation	$T_A=25^\circ\text{C}$	P_D	2.0	W
Power Dissipation	$T_A=70^\circ\text{C}$		1.3	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	$^\circ\text{C}$
Typical Thermal Resistance (Note 4,5)	Junction to Case	$R_{\theta JC}$	2.3	$^\circ\text{C/W}$
	Junction to Ambient	$R_{\theta JA}$	62.5	

- Limited only By Maximum Junction Temperature



PJD10P10A

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	-100	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	-1.0	-1.9	-3.0	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-5A	-	170	210	mΩ
		V _{GS} =-4.5V, I _D =-3A	-	190	230	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-100V, 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} =-80V, I _D =-5A, V _{GS} =-10V (Note 1,2)	-	20	-	nC
Gate-Source Charge	Q _{gs}		-	3.5	-	
Gate-Drain Charge	Q _{gd}		-	4.6	-	
Input Capacitance	C _{iss}	V _{DS} =-25V, V _{GS} =0V, f=1.0MHZ	-	1419	-	pF
Output Capacitance	C _{oss}		-	89	-	
Reverse Transfer Capacitance	C _{rss}		-	45	-	
Turn-On Delay Time	t _{d(on)}	V _{DS} =-50V, I _D =-5A, V _{GS} =-10V, R _G =25Ω (Note 1,2)	-	18	-	ns
Turn-On Rise Time	t _r		-	8	-	
Turn-Off Delay Time	t _{d(off)}		-	100	-	
Turn-Off Fall Time	t _f		-	30	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	-10	A
Reverse Recovery Time	V _{SD}	I _S =-1A, V _{GS} =0V	-	-0.74	-1.2	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_{θJA} 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.



PJD10P10A

TYPICAL CHARACTERISTIC CURVES

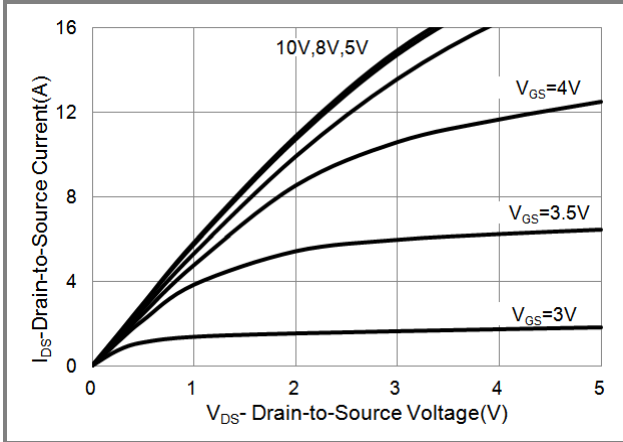


Fig.1 On-Region Characteristics

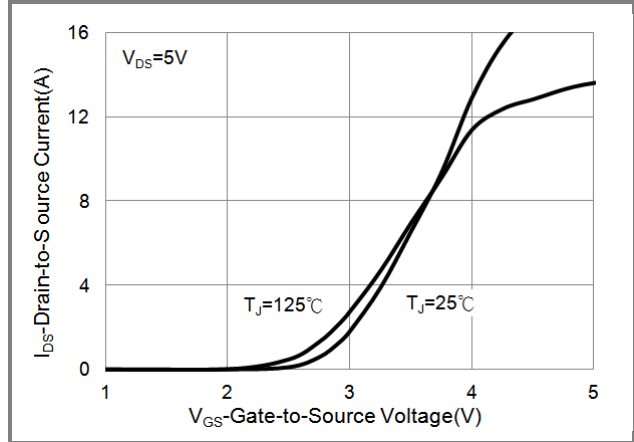


Fig.2 Transfer Characteristics

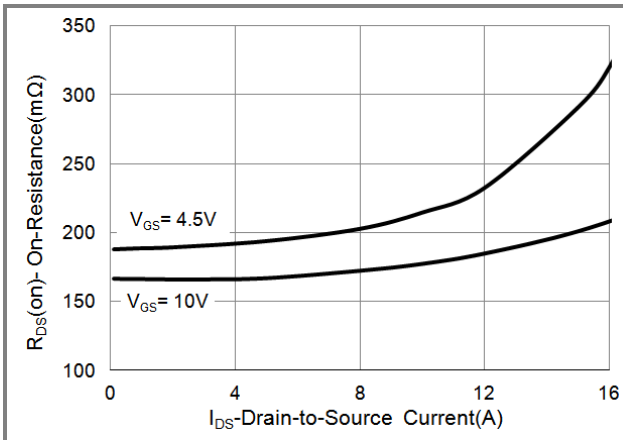


Fig.3 On-Resistance vs. Drain Current

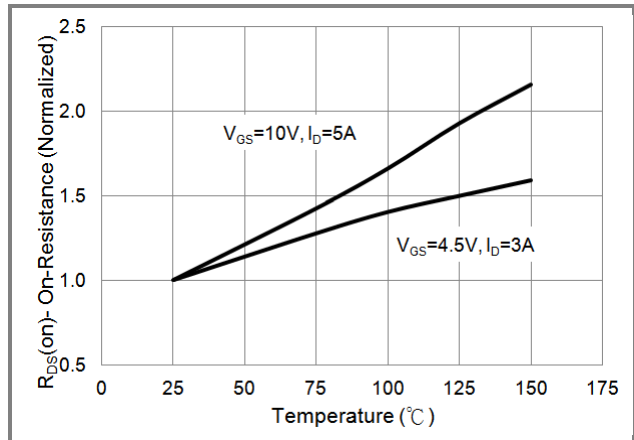


Fig.4 On-Resistance vs. Junction temperature

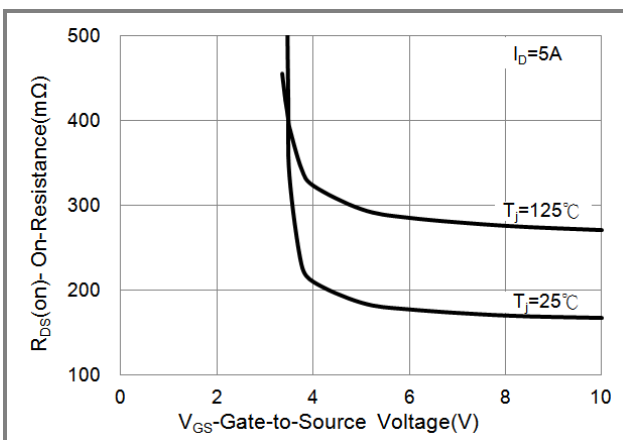


Fig.5 On-Resistance Variation with VGS.

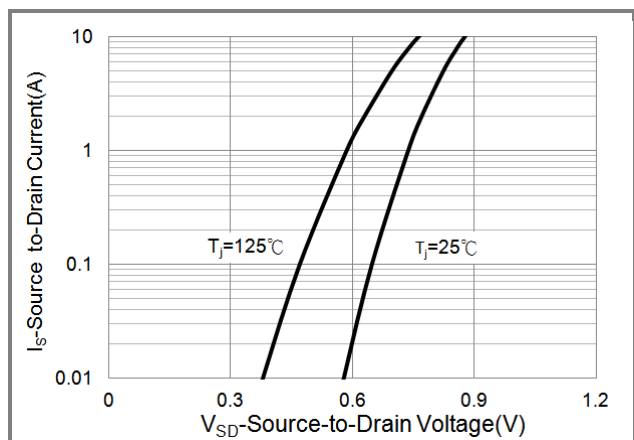


Fig.6 Body Diode Characteristics



PJD10P10A

TYPICAL CHARACTERISTIC CURVES

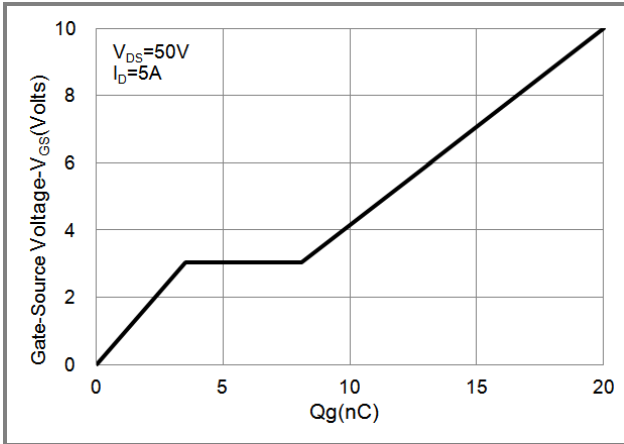


Fig.7 Gate-Charge Characteristics

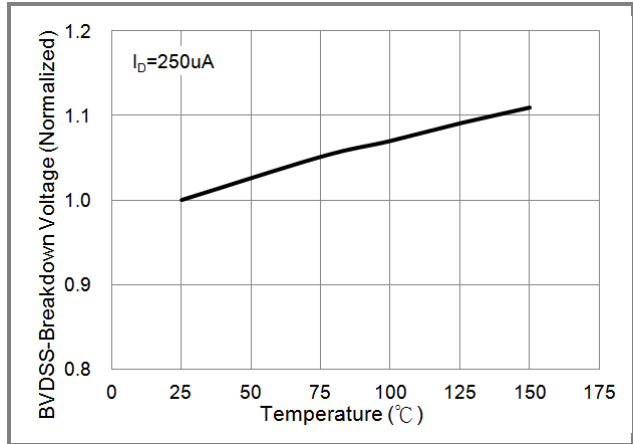


Fig.8 Breakdown Voltage Variation vs. Temperature

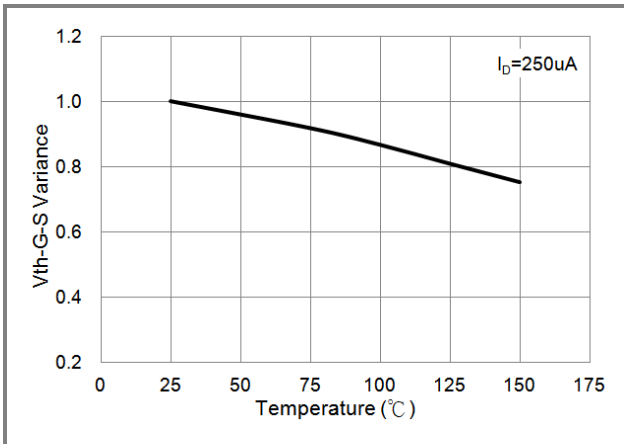


Fig.9 Threshold Voltage Variation with Temperature

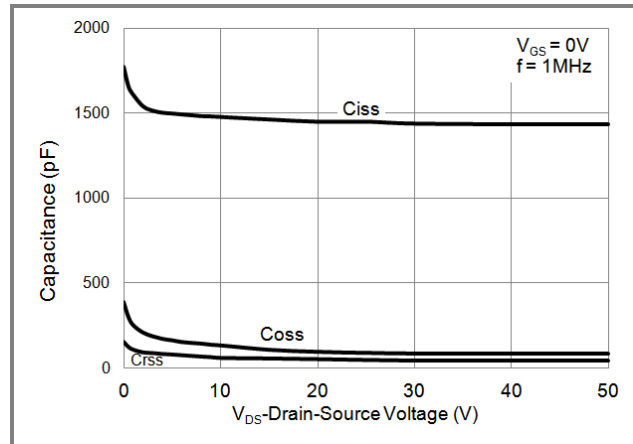


Fig.10 Capacitance vs. Drain-Source Voltage

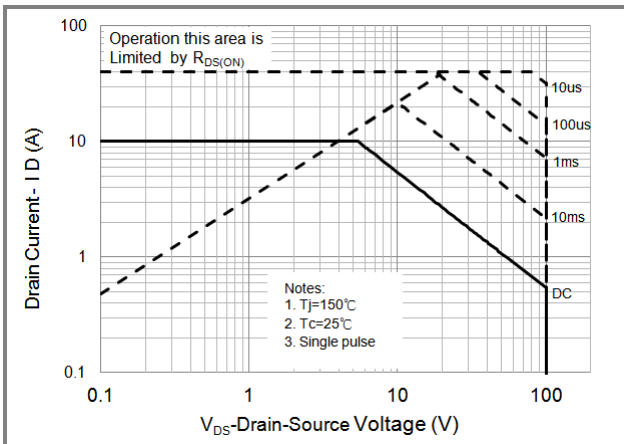


Fig.11 Maximum Safe Operating Area



PJD10P10A

TYPICAL CHARACTERISTIC CURVES

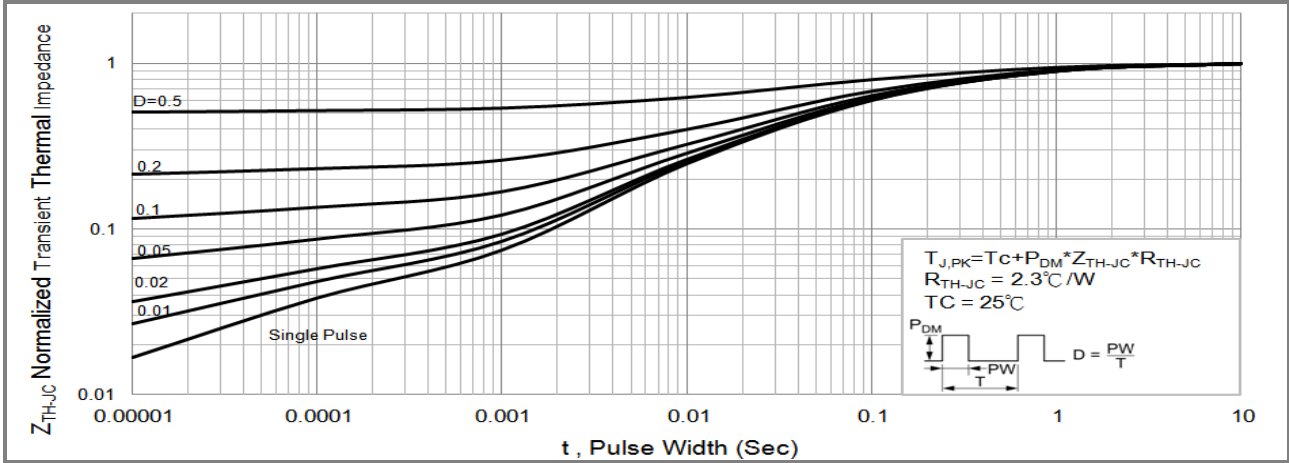
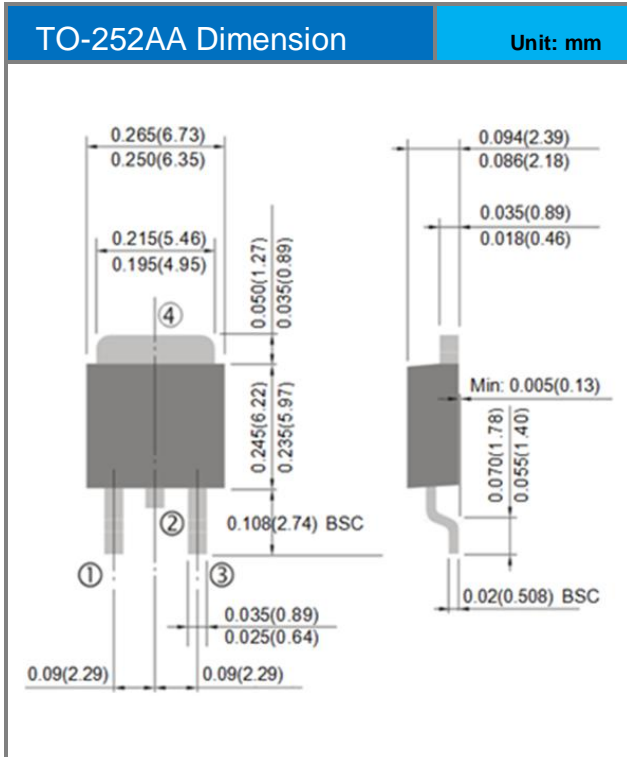


Fig.12 Normalized Thermal Transient Impedance



PJD10P10A

Packaging Information



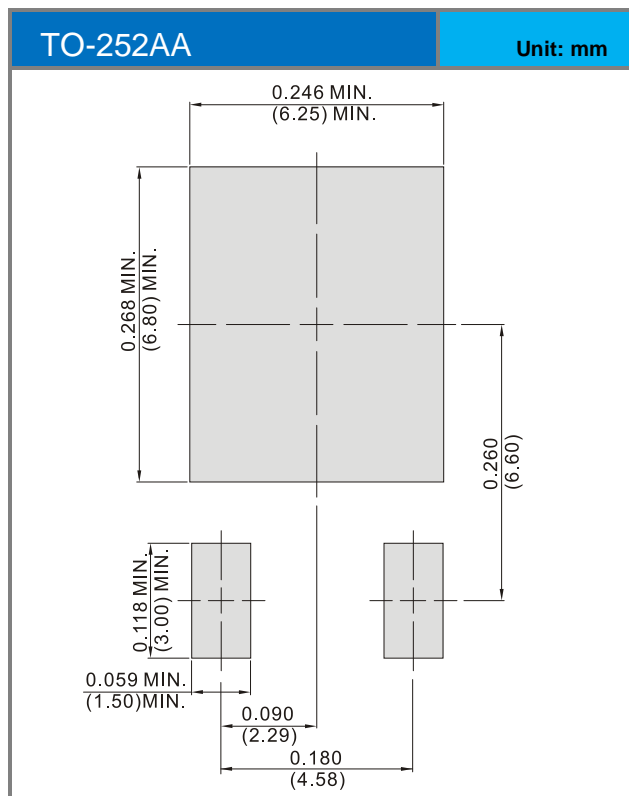


PJD10P10A

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJD10P10A_L2_00001	TO-252AA	3,000pcs / 13" reel	D10P10A	Halogen free

MOUNTING PAD LAYOUT





PJD10P10A

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