



PJD15P06A-AU

60V P-Channel Enhancement Mode MOSFET

Voltage

-60 V

Current

-15 A

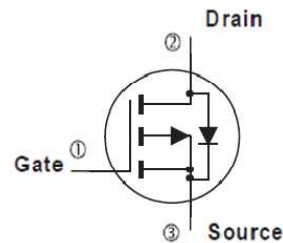
Features

- $R_{DS(ON)}$, $V_{GS}@-10V$, $I_D@-7.5A < 68m\Omega$
- $R_{DS(ON)}$, $V_{GS}@-4.5V$, $I_D@-4A < 85m\Omega$
- High switching speed
- Improved dv/dt capability
- Low gate charge
- Low reverse transfer capacitance
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : TO-252AA Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0105 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}	-60	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ^(Note 4)	$T_C=25^\circ C$	I_D	-15	A
	$T_C=100^\circ C$		-9.5	
Pulsed Drain Current ^(Note 1)	$T_C=25^\circ C$	I_{DM}	-60	
Power Dissipation	$T_C=25^\circ C$	P_D	25	W
	$T_C=100^\circ C$		10	
Continuous Drain Current ^(Note 4)	$T_A=25^\circ C$	I_D	-4	A
	$T_A=70^\circ C$		-3.2	
Power Dissipation	$T_A=25^\circ C$	P_D	2	W
	$T_A=70^\circ C$		1.3	
Single Pulse Avalanche Energy ^(Note 6)		E_{AS}	31	mJ
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	$^\circ C$
Typical Thermal Resistance ^(Note 4,5)	Junction to Case	$R_{\theta JC}$	5	$^\circ C/W$
	Junction to Ambient	$R_{\theta JA}$	62.5	

- Limited only By Maximum Junction Temperature



PJD15P06A-AU

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	-60	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	-1	-1.63	-2.5	
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-7.5A	-	55	68	mΩ
		V _{GS} =-4.5V, I _D =-4A	-	71	85	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V	-	-	-1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Dynamic (Note 7)						
Total Gate Charge	Q _g	V _{DS} =-30V, I _D =-7.5A, V _{GS} =-10V (Note 3)	-	17	-	nC
Gate-Source Charge	Q _{gs}		-	2.8	-	
Gate-Drain Charge	Q _{gd}		-	3.6	-	
Input Capacitance	C _{iss}	V _{DS} =-30V, V _{GS} =0V, f=1MHZ	-	879	-	pF
Output Capacitance	C _{oss}		-	70	-	
Reverse Transfer Capacitance	C _{rss}		-	47	-	
Turn-On Delay Time	t _{d(on)}	V _{DD} =-30V, I _D =-1A, V _{GS} =-10V, R _G =6Ω (Note 3)	-	8.4	-	ns
Turn-On Rise Time	t _r		-	30	-	
Turn-Off Delay Time	t _{d(off)}		-	52	-	
Turn-Off Fall Time	t _f		-	16	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	-15	A
Diode Forward Voltage	V _{SD}	I _S =-1A, V _{GS} =0V	-	-0.73	-1	V

NOTES :

- Pulse width ≤ 300us, Duty cycle ≤ 2%.
- Essentially independent of operating temperature typical characteristics.
- 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.
- The maximum current rating is package limited.
- 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.
- L=0.1mH, I_{AS}=-25A, V_{GS}=-10V, V_{DS}=-25V, R_G=25 ohm.
- Guaranteed by design, not subject to production testing.



PJD15P06A-AU

TYPICAL CHARACTERISTIC CURVES

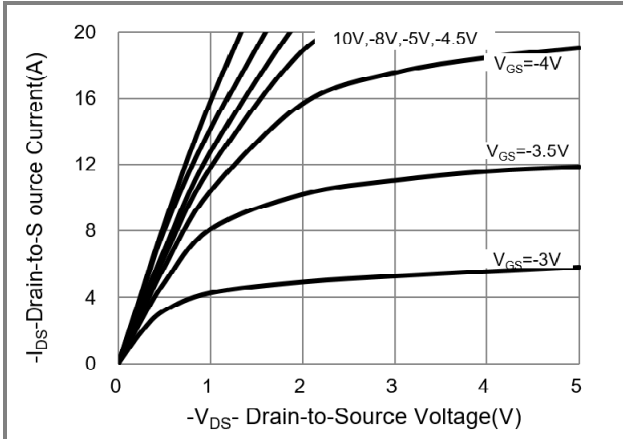


Fig.1 On-Region Characteristics

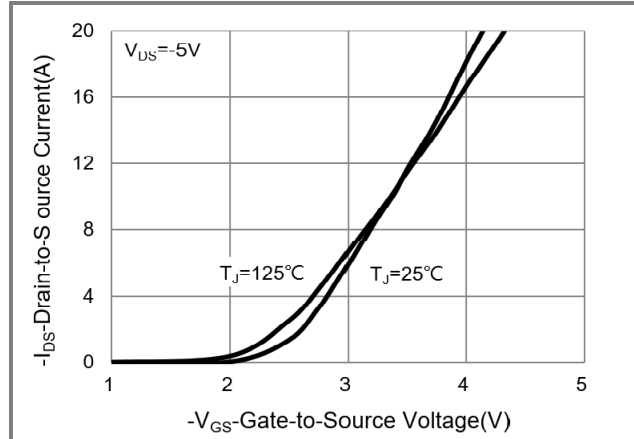


Fig.2 Transfer Characteristics

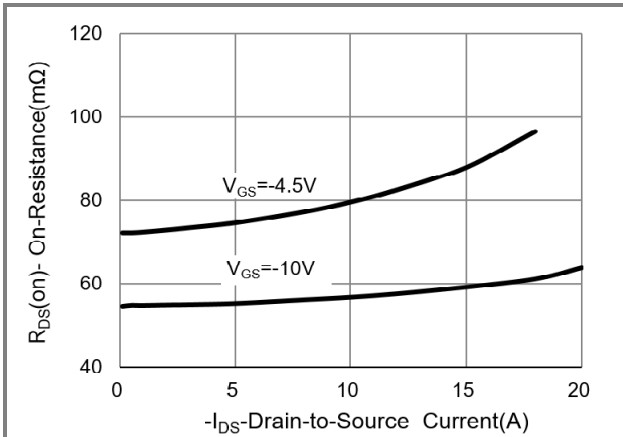


Fig.3 On-Resistance vs. Drain Current

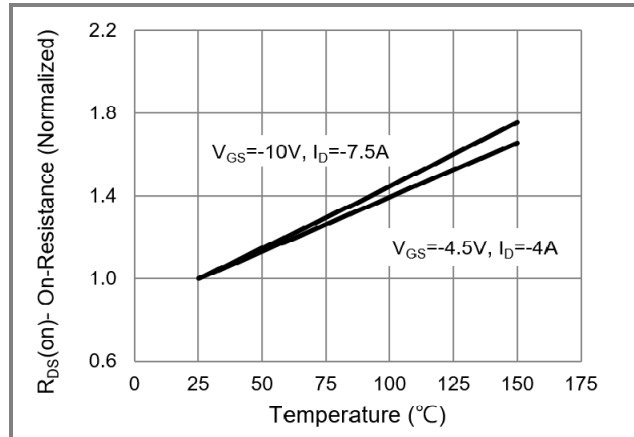


Fig.4 On-Resistance vs. Junction temperature

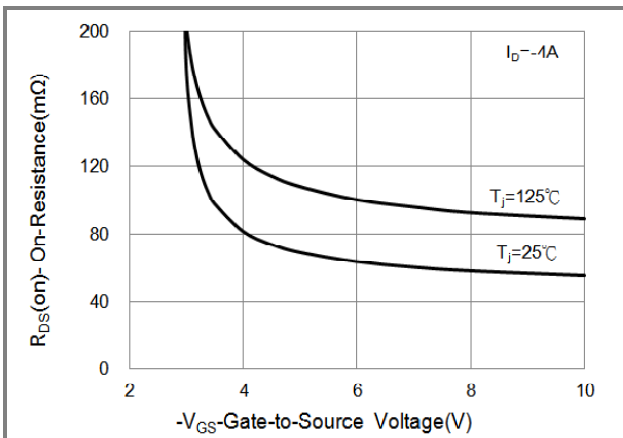


Fig.5 On-Resistance Variation with V_{GS}

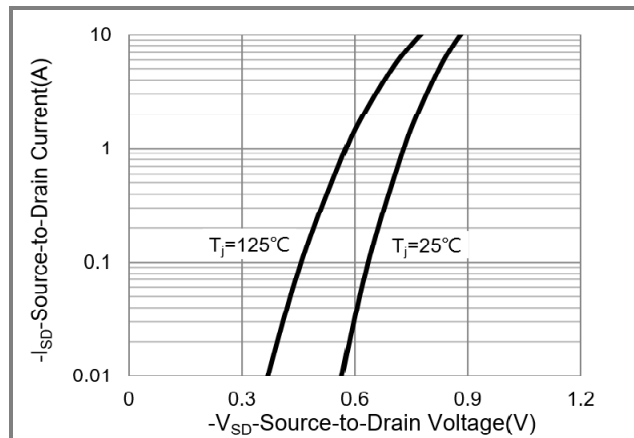


Fig.6 Body Diode Characteristics



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TYPICAL CHARACTERISTIC CURVES

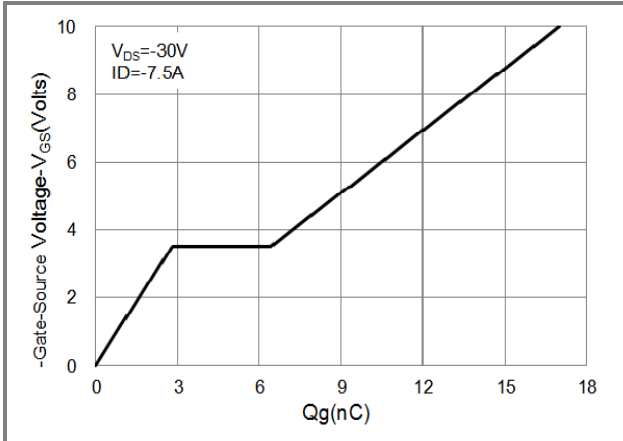


Fig.7 Gate-Charge Characteristics

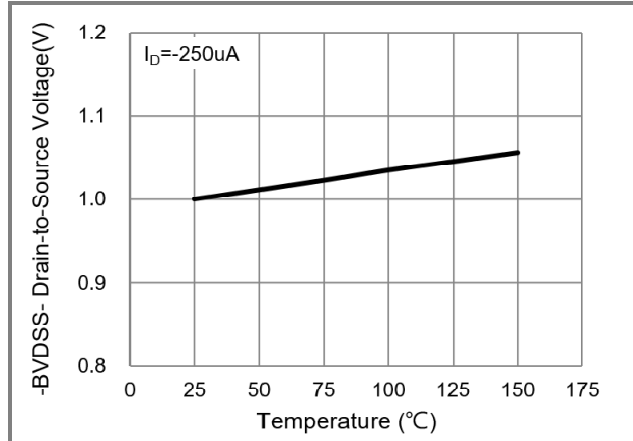


Fig.8 Breakdown Voltage Variation vs. Temperature

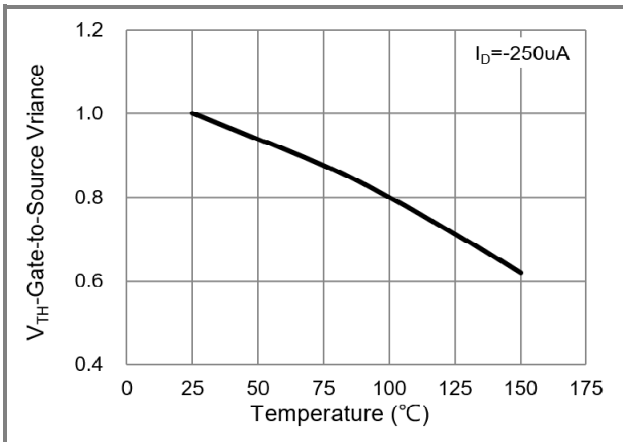


Fig.9 Threshold Voltage Variation with Temperature

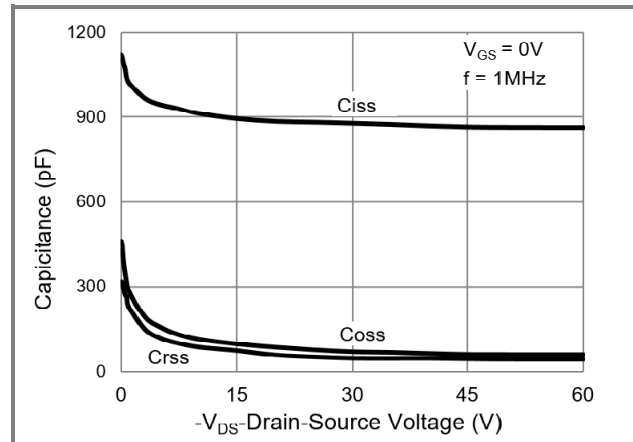


Fig.10 Capacitance vs. Drain-Source Voltage

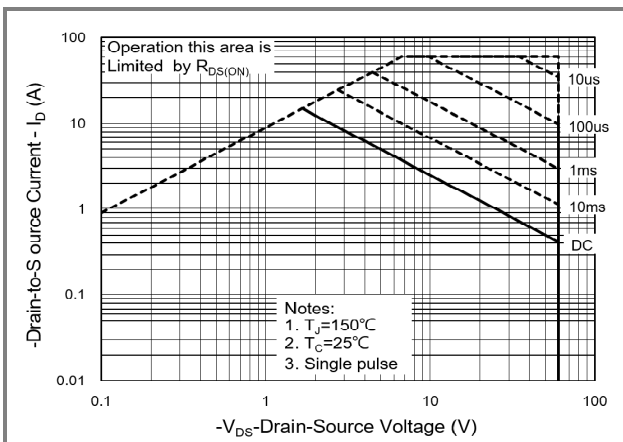


Fig.11 Maximum Safe Operating Area

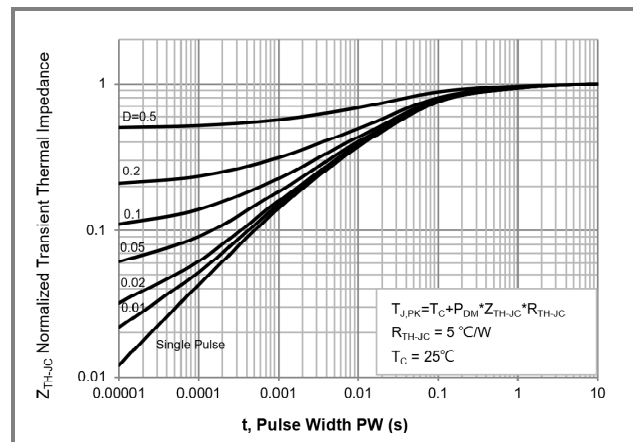


Fig.12 Normalized Thermal Transient Impedance

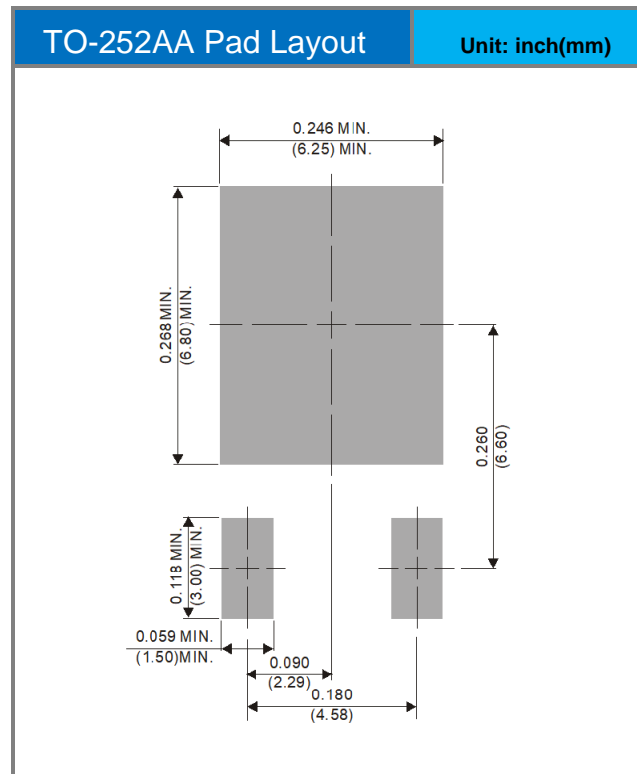
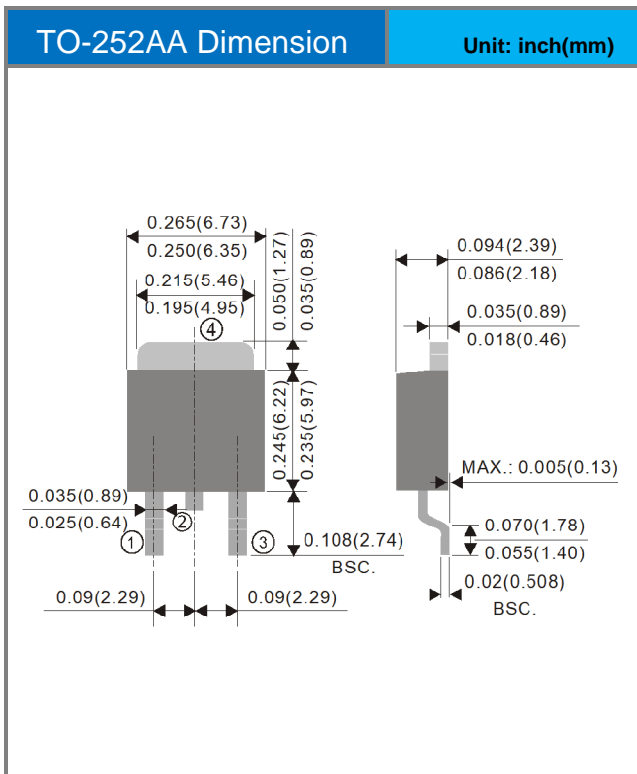


PJD15P06A-AU

Part No. Packing Code Version

Part No. Packing Code	Package Type	Packing Type	Marking	Version
PJD15P06A-AU_L2_000A1	TO-252AA	3,000pcs / 13" reel	D15P06A	Halogen free

Packaging Information & Mounting Pad Layout





PJD15P06A-AU

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