



PJD14P06-AU

60V P-Channel Enhancement Mode MOSFET

Voltage

-60 V

Current

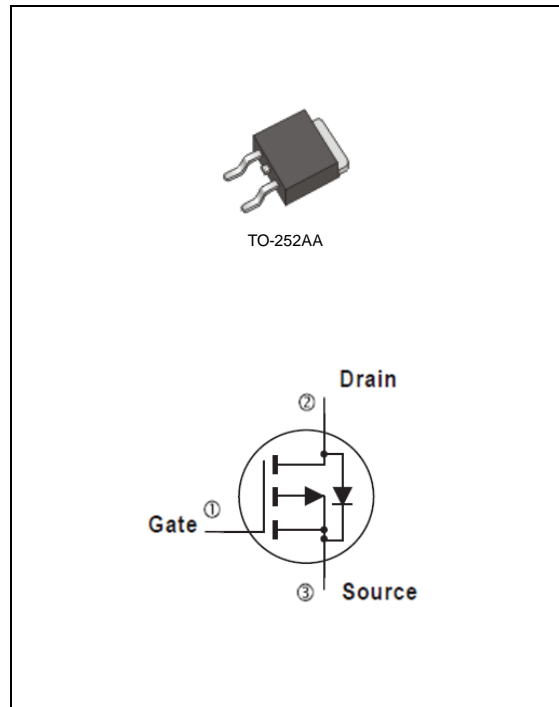
-14 A

Features

- $R_{DS(ON)}, V_{GS}@-10V, I_D@-7A < 115m\Omega$
- $R_{DS(ON)}, V_{GS}@-4.5V, I_D@-3.5A < 160m\Omega$
- High switching speed
- Improved dv/dt capability
- Low Gate Charge
- Low reverse transfer capacitance
- Acquire quality system certificate : TS16949
- AEC-Q101 qualified
- 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



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

PARAMETER	SYMBOL	LIMIT	UNITS
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ^(Note 1)	I_D	-14	A
Pulsed Drain Current	I_{DM}	-32	A
Single Pulse Avalanche Energy ^(Note 2)	E_{AS}	42	mJ
Power Dissipation	P_D	$T_C=25^\circ\text{C}$	45
		Derate above 25°C	0.3
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~175	$^\circ\text{C}$
Typical Thermal resistance			
- Junction to Case	$R_{\theta JC}$	3.33	$^\circ\text{C/W}$
- Junction to Ambient ^(Note 1)	$R_{\theta JA}$	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}	$V_{GS}=0V, I_D=-250\mu A$	-60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-2.2	-2.76	-3.2	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-7A$	-	96	115	m Ω
		$V_{GS}=-4.5V, I_D=-3.5A$	-	125	160	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-55V, V_{GS}=0V$	-	-0.01	-1.0	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	± 10	± 100	nA
Diode Forward Voltage	V_{SD}	$I_S=-1A, V_{GS}=0V$	-	-0.78	-1.0	V
Dynamic (Note 5)						
Total Gate Charge	Q_g	$V_{DS}=-30V, I_D=-12A,$ $V_{GS}=-10V$ (Note 2,3)	-	13.4	-	nC
Gate-Source Charge	Q_{gs}		-	3.4	-	
Gate-Drain Charge	Q_{gd}		-	3.0	-	
Input Capacitance	C_{iss}	$V_{DS}=-30V, V_{GS}=0V,$ $f=1.0\text{MHz}$	-	685	-	pF
Output Capacitance	C_{oss}		-	63	-	
Reverse Transfer Capacitance	C_{rss}		-	29	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-30V, R_L=2.5\Omega,$ $V_{GS}=-10V, R_G=6.2\Omega$ (Note 2,3)	-	7	-	ns
Turn-On Rise Time	t_r		-	40	-	
Turn-Off Delay Time	$t_{d(off)}$		-	23	-	
Turn-Off Fall Time	t_f		-	10	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	-10	A
Reverse Recovery Time	t_{rr}	$V_{GS}=0V, I_S=-12A$	-	28	-	ns
Reverse Recovery Charge	Q_{rr}	$di_F/dt=-100A/\mu s$ (Note 2)	-	42	-	nC

NOTES :

1. The test by surface mounted on 1 inch FR4 board with 2oz copper.
2. $L=0.1\text{mH}, I_{AS}=-29A, V_{GS}=-10V, V_{DS}=-25V, R_G=25\text{ ohm},$ Starting $T_J=25^\circ\text{C}$
3. The Power dissipation is limit by 150°C junction temperature.
4. Pulse width $\leq 300\mu s,$ Duty cycle $\leq 2\%$
5. Guaranteed by design, not subject to production testing.



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TYPICAL CHARACTERISTIC CURVES

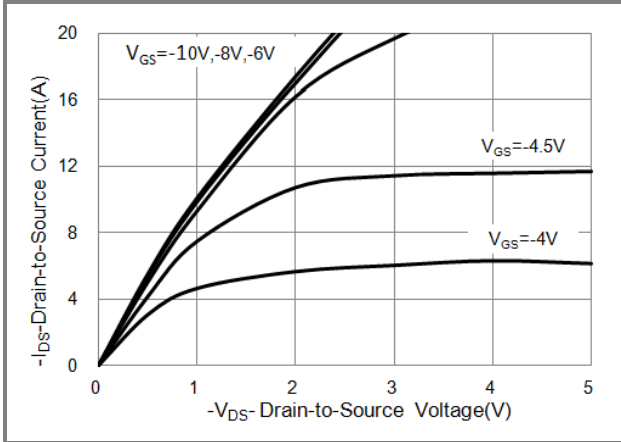


Fig.1 On-Region Characteristics

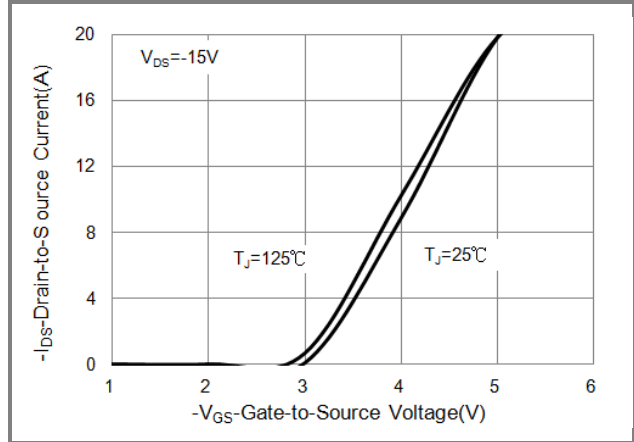


Fig.2 Transfer Characteristics

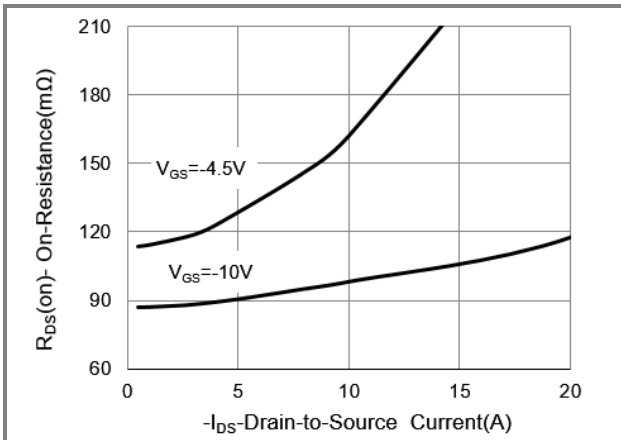


Fig.3 On-Resistance vs. Drain Current

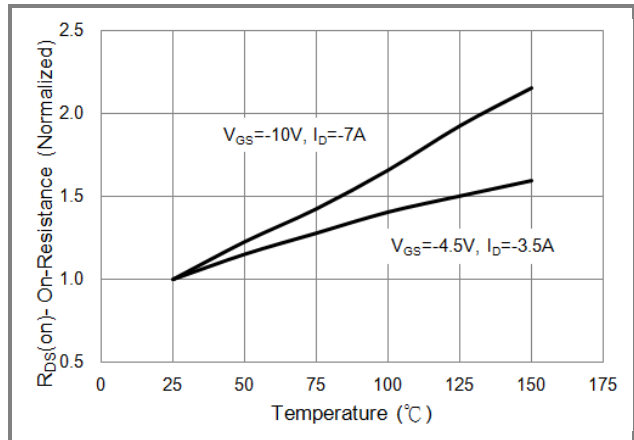


Fig.4 On-Resistance vs. Junction temperature

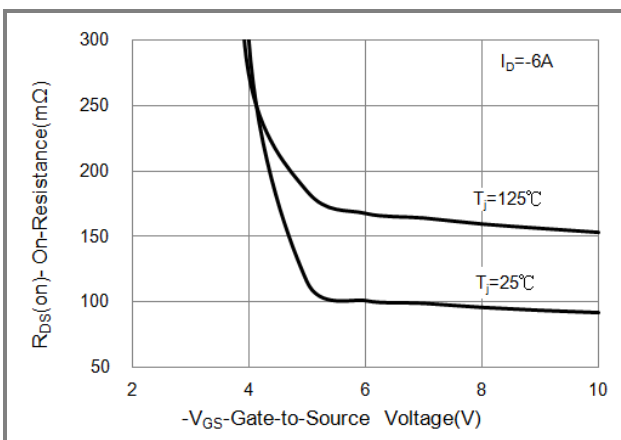


Fig.5 On-Resistance Variation with V_{GS} .

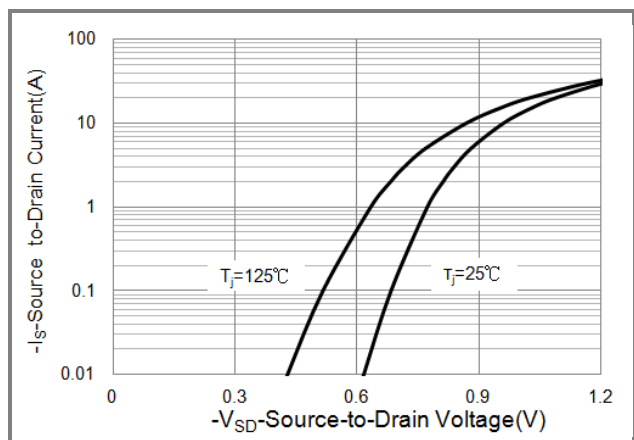


Fig.6 Body Diode Characteristics



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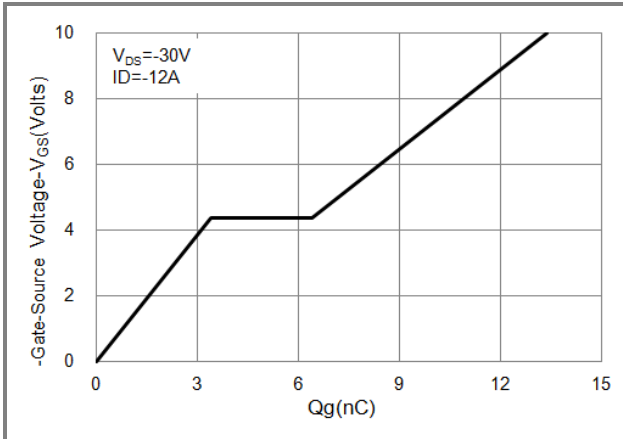


Fig.7 Gate-Charge Characteristics

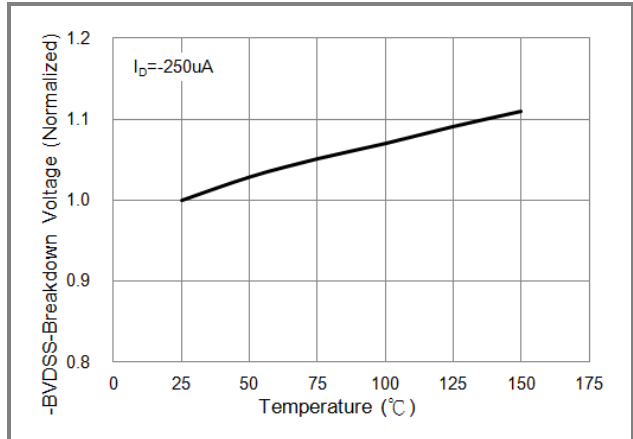


Fig.8 Breakdown Voltage Variation vs. Temperature

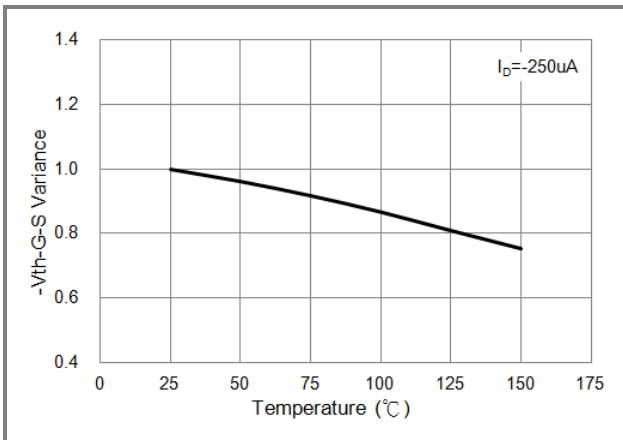


Fig.9 Threshold Voltage Variation with Temperature

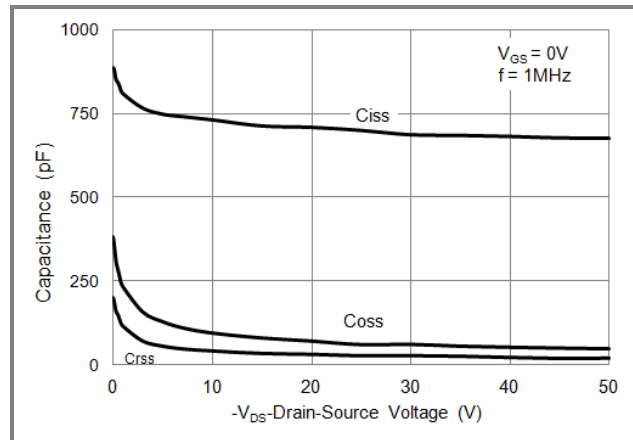


Fig.10 Capacitance vs. Drain-Source Voltage

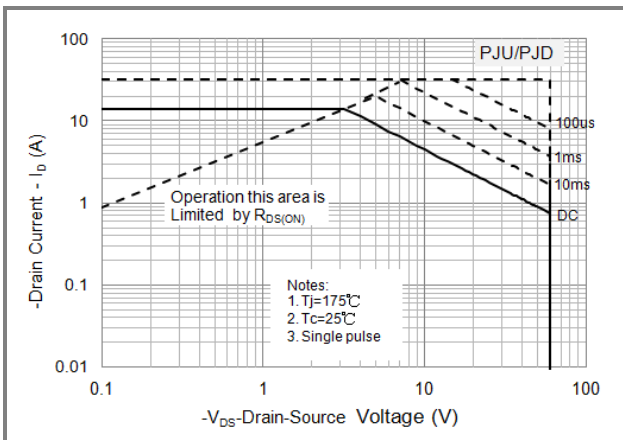
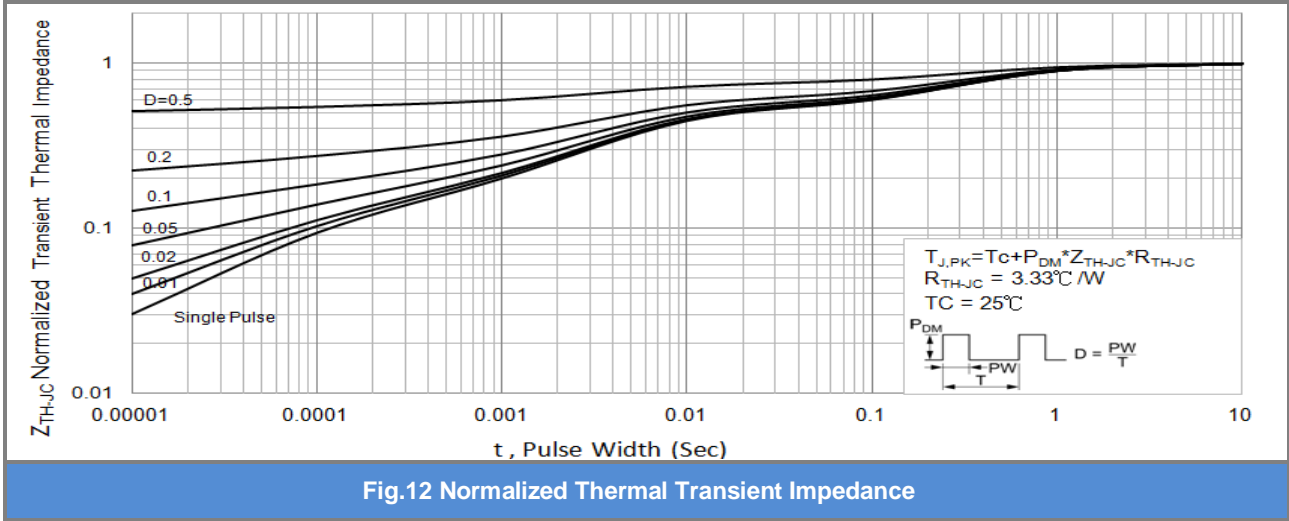


Fig.11 Maximum Safe Operating Area



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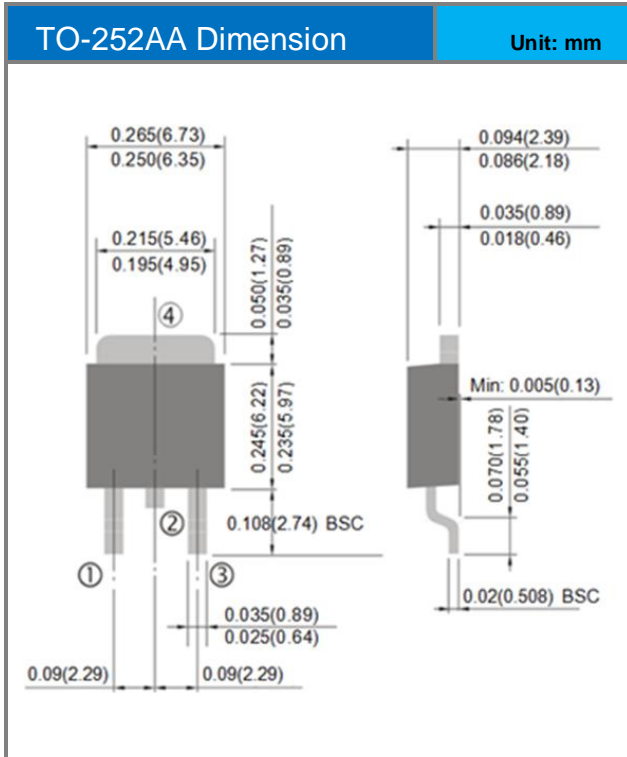
TYPICAL CHARACTERISTIC CURVES





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Packaging Information



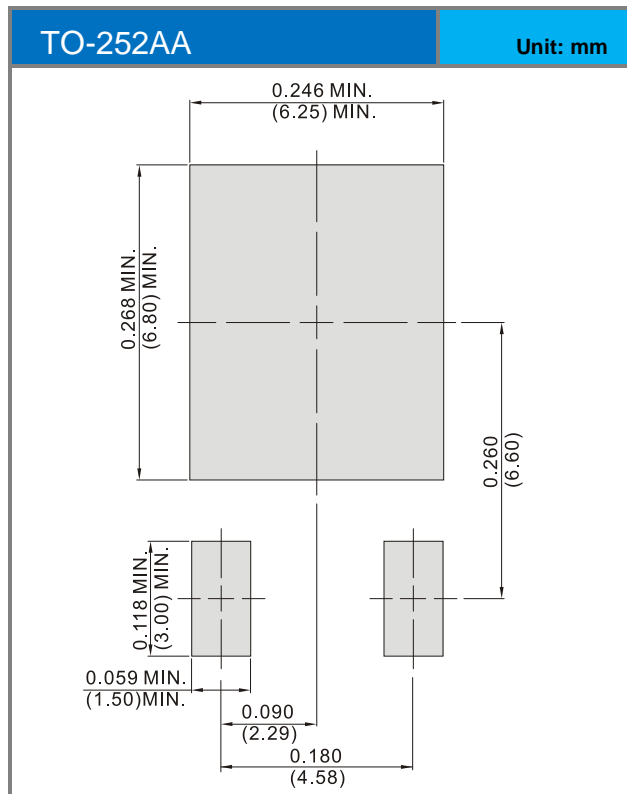


PJD14P06-AU

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJD14P06-AU_L2_000A1	TO-252AA	3,000pcs / 13" reel	D14P06	Halogen free

MOUNTING PAD LAYOUT





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