

PJD30N15

150V N-Channel Enhancement Mode MOSFET

Voltage

150 V

Current

25 A

Features

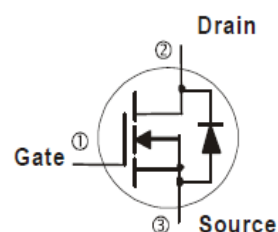
- $R_{DS(ON)}$, $V_{GS}@10V, I_D@5A < 65m\Omega$
- $R_{DS(ON)}$, $V_{GS}@6V, I_D@3A < 90m\Omega$
- High switching speed
- Improved dv/dt capability
- Low reverse transfer capacitance
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive)
- Green molding compound as per IEC61249 Std. (Halogen Free)

Mechanical Data

- Case : TO-252AA Package
- Terminals : Solderable per MIL-STD-750, Method 2026



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}	150	V
Gate-Source Voltage		V_{GS}	± 25	V
Continuous Drain Current	$T_C=25^\circ\text{C}$	I_D	25	A
	$T_C=100^\circ\text{C}$		16	
Pulsed Drain Current (Note 1)	$T_C=25^\circ\text{C}$	I_{DM}	100	
Power Dissipation	$T_C=25^\circ\text{C}$	P_D	102	W
	$T_C=100^\circ\text{C}$		41	
Continuous Drain Current	$T_A=25^\circ\text{C}$	I_D	3.5	A
	$T_A=70^\circ\text{C}$		2.8	A
Power Dissipation	$T_A=25^\circ\text{C}$	P_D	2.0	W
Power Dissipation	$T_A=70^\circ\text{C}$		1.3	
Single Pulse Avalanche Energy (Note 6)		E_{AS}	242	mJ
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	$^\circ\text{C}$
Typical Thermal Resistance (Note 4,5)	Junction to Case	$R_{\theta JC}$	1.23	$^\circ\text{C/W}$
	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)

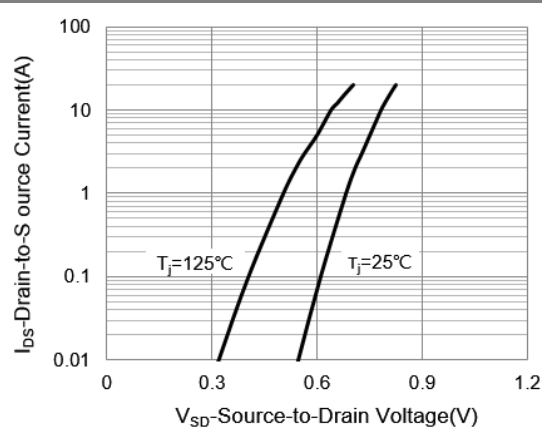
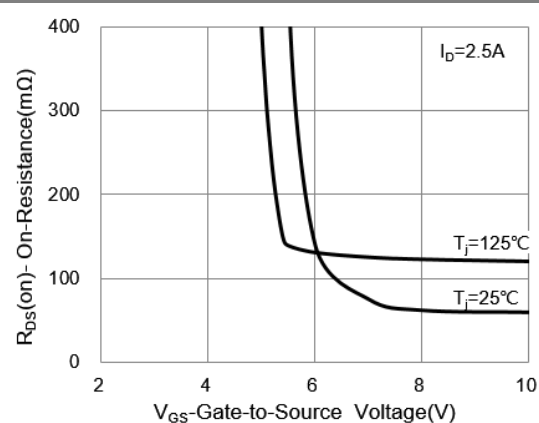
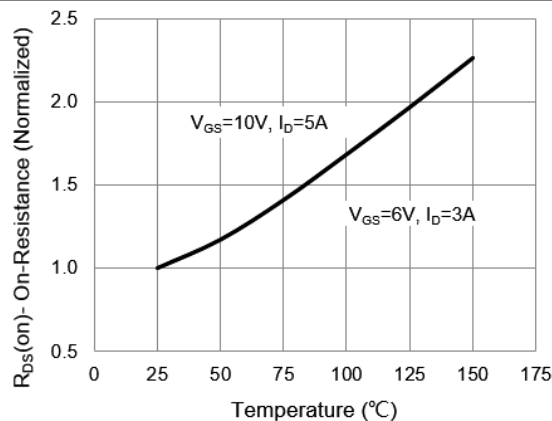
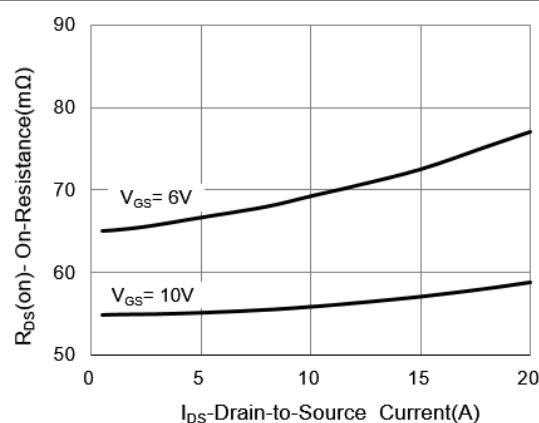
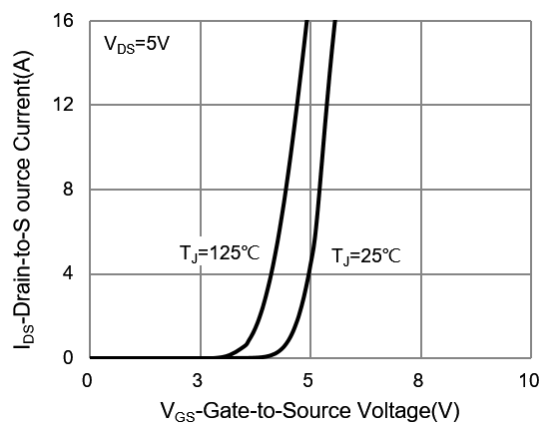
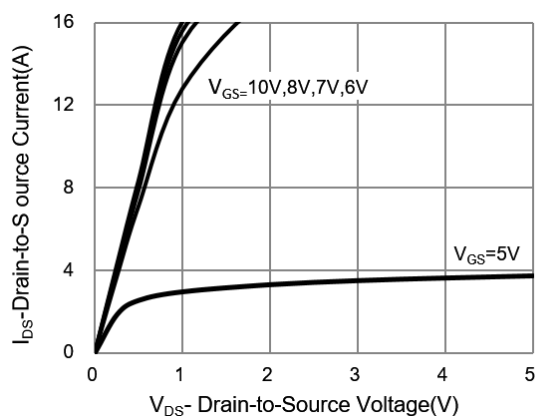
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	150	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	2.0	2.7	4.0	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =5A	-	50	65	mΩ
		V _{GS} =6V, I _D =3A	-	60	90	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =150V, V _{GS} =0V	-	-	1.0	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±25V, V _{DS} =0V	-	-	±100	nA
Dynamic (Note 7)						
Total Gate Charge	Q _g	V _{DS} =75V, I _D =4A, V _{GS} =10V (Note 1,2)	-	29.5	-	nC
Gate-Source Charge	Q _{gs}		-	9.2	-	
Gate-Drain Charge	Q _{gd}		-	8.0	-	
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f=1.0MHZ	-	1764	-	pF
Output Capacitance	C _{oss}		-	148	-	
Reverse Transfer Capacitance	C _{rss}		-	62	-	
Turn-On Delay Time	td(on)	V _{DS} =30V, I _D =1A, V _{GS} =10V, R _G =6Ω (Note 1,2)	-	14	-	ns
Turn-On Rise Time	t _r		-	21	-	
Turn-Off Delay Time	td(off)		-	32	-	
Turn-Off Fall Time	t _f		-	23	-	
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	-	0.7	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 $T_J(\text{MAX})=150^{\circ}\text{C}$. 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. The test condition is $L=0.1\text{mH}$, $I_{AS}=22A$, $V_{DD}=50V$, $V_{GS}=10V$
7. Guaranteed by design, not subject to production testing.

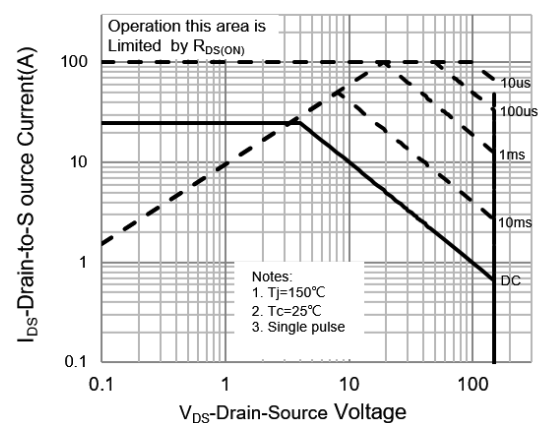
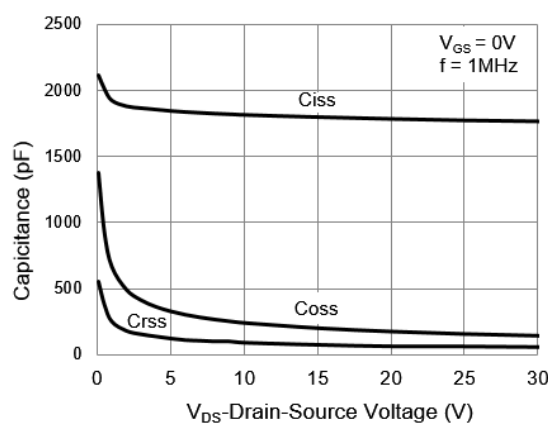
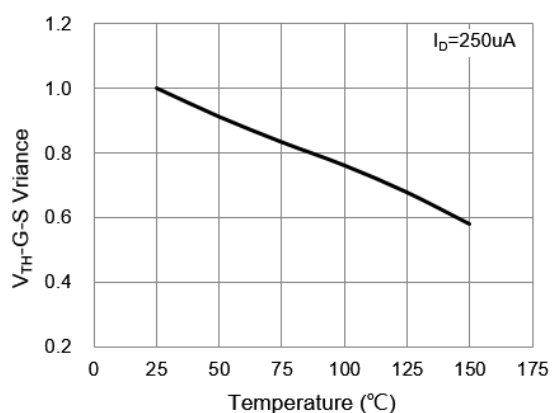
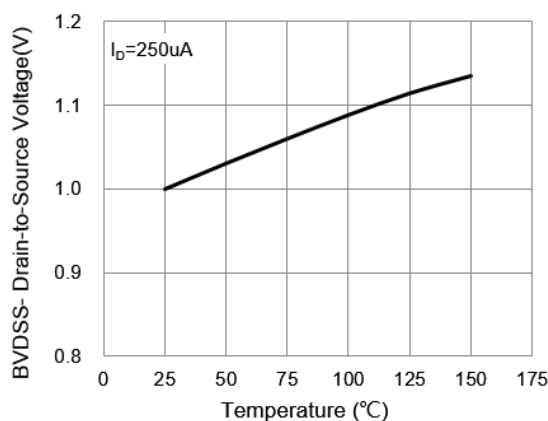
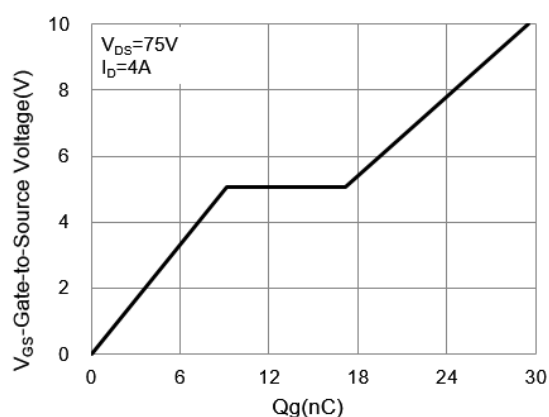
PJD30N15

TYPICAL CHARACTERISTIC CURVES



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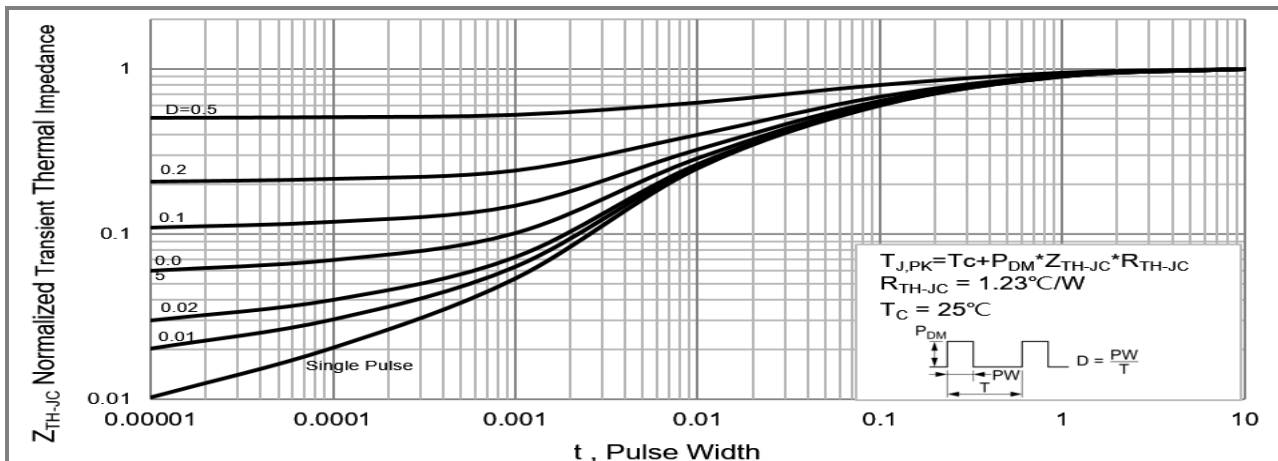
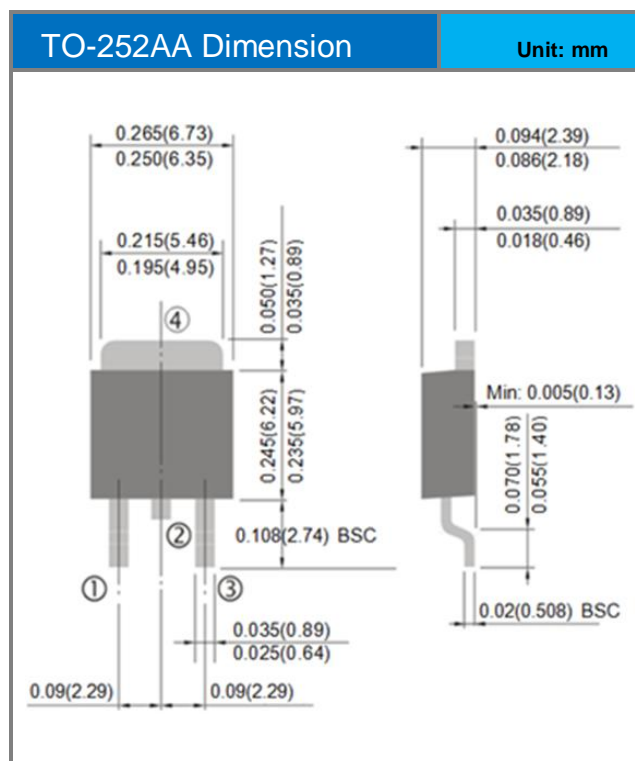


Fig.12 Normalized Transient Thermal Impedance vs. Pulse Width



PJD30N15

Packaging Information

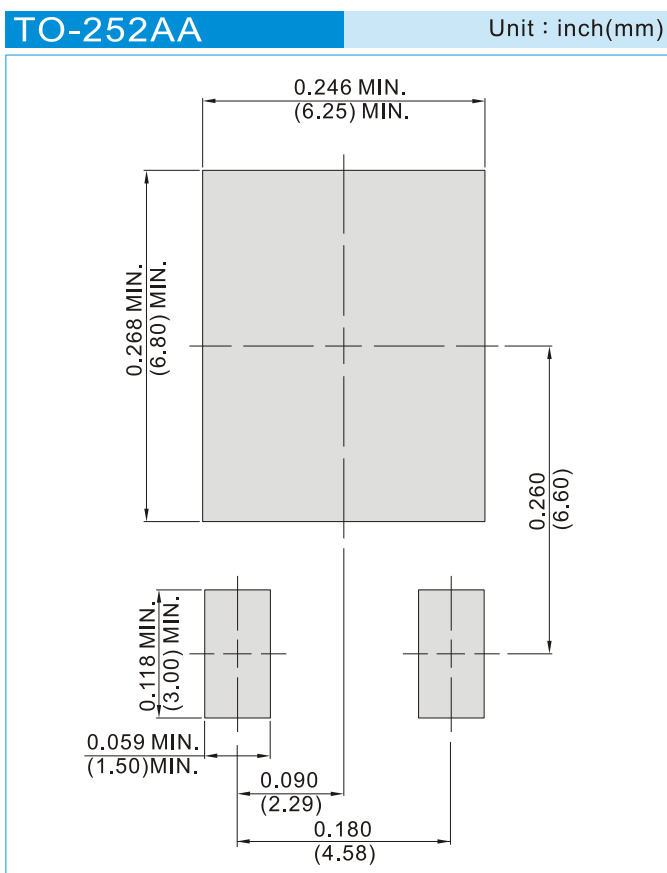


PJD30N15

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJD30N15_L2_00001	TO-252AA	3,000pcs / 13" reel	D30N15	Halogen free

MOUNTING PAD LAYOUT





PJD30N15

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