



PJU7NA65 / PJD7NA65 / PJP7NA65 / PJF7NA65

650V N-Channel MOSFET

Voltage

650 V

Current

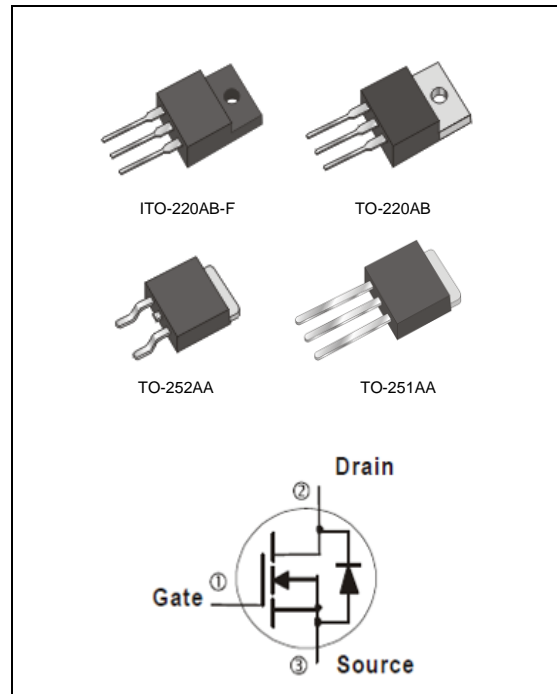
7 A

Features

- $R_{DS(ON)}$, $V_{GS}@10V$, $I_D@3.5A < 1.5\Omega$
- High switching speed
- Improved dv/dt capability
- Low Gate Charge
- Low reverse transfer capacitance
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : TO-251AA, TO-252AA, TO-220AB, ITO-220AB-F Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- TO-251AA Approx. Weight : 0.0104 ounces, 0.297grams
- TO-252AA Approx. Weight : 0.0104 ounces, 0.297grams
- TO-220AB Approx. Weight : 0.067 ounces, 1.9 grams
- ITO-220AB-F Approx. Weight : 0.068 ounces, 2 grams



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

PARAMETER	SYMBOL	TO-251AA	TO-220AB	ITO-220AB-F	TO-252AA	UNITS	
		TO-251AA-1					
Drain-Source Voltage	V_{DS}	650				V	
Gate-Source Voltage	V_{GS}	± 30					
Continuous Drain Current ^(Note 4)	I_D	7				A	
Pulsed Drain Current	I_{DM}	28					
Single Pulse Avalanche Energy ^(Note 1)	E_{AS}	435				mJ	
Power Dissipation	$T_C=25^\circ\text{C}$	P_D	140	145	46	140	W
	Derate above 25°C		1.12	1.16	0.37	1.12	W/ $^\circ\text{C}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150				$^\circ\text{C}$	
Typical Thermal Resistance ^(Note 4)							
- Junction to Case	$R_{\theta JC}$	0.89	0.88	2.72	0.89	$^\circ\text{C/W}$	
- Junction to Ambient	$R_{\theta JA}$	110	62.5	120	110		

- Limited only By Maximum Junction Temperature



PJU7NA65 / PJD7NA65 / PJP7NA65 / PJF7NA65

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}	$V_{GS}=0V, I_D=250\mu A$	650	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	2.88	4	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=3.5A$	-	1.35	1.5	Ω
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V, V_{GS}=0V$	-	-	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	± 100	nA
Diode Forward Voltage	V_{SD}	$I_S=7A, V_{GS}=0V$	-	0.88	1.4	V
Dynamic (Note 5)						
Total Gate Charge	Q_g	$V_{DS}=520V, I_D=7A,$ $V_{GS}=10V$ (Note 2,3)	-	16.8	-	nC
Gate-Source Charge	Q_{gs}		-	5	-	
Gate-Drain Charge	Q_{gd}		-	6	-	
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $f=1\text{MHz}$	-	754	-	pF
Output Capacitance	C_{oss}		-	97	-	
Reverse Transfer Capacitance	C_{rss}		-	0.8	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=325V, I_D=7A,$ $R_G=25\Omega$ (Note 2,3)	-	14	-	ns
Turn-On Rise Time	t_r		-	28	-	
Turn-Off Delay Time	$t_{d(off)}$		-	38	-	
Turn-Off Fall Time	t_f		-	28	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	7	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}	---	-	-	28	A
Reverse Recovery Time	t_{rr}	$V_{GS}=0V, I_S=7A$	-	493	-	ns
Reverse Recovery Charge	Q_{rr}	$di_F/dt=100A/\mu s$ (Note 2)	-	2.99	-	μC

NOTES :

1. $L=30\text{mH}, I_{AS}=5.25A, V_{DD}=50V, R_G=25\text{ohm}$, Starting $T_J=25^\circ\text{C}$.
2. Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$.
3. Essentially independent of operating temperature typical characteristics.
4. The maximum current rating is package limited.
5. Guaranteed by design, not subject to production testing.



PJU7NA65 / PJD7NA65 / PJP7NA65 / PJF7NA65

TYPICAL CHARACTERISTIC CURVES

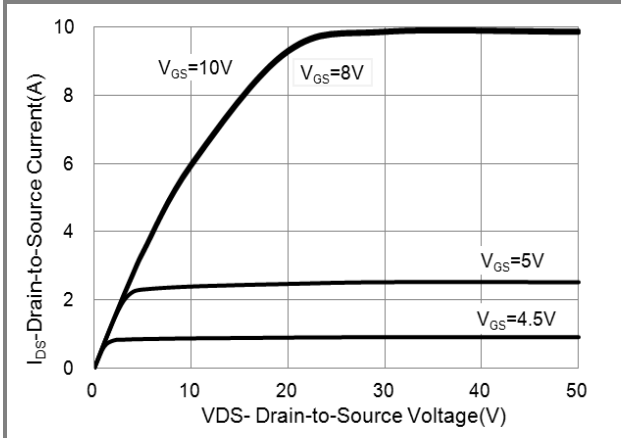


Fig.1 Output Characteristics

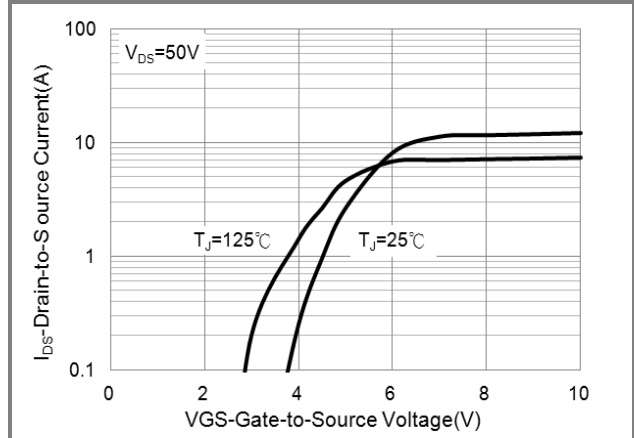


Fig.2 Transfer Characteristics

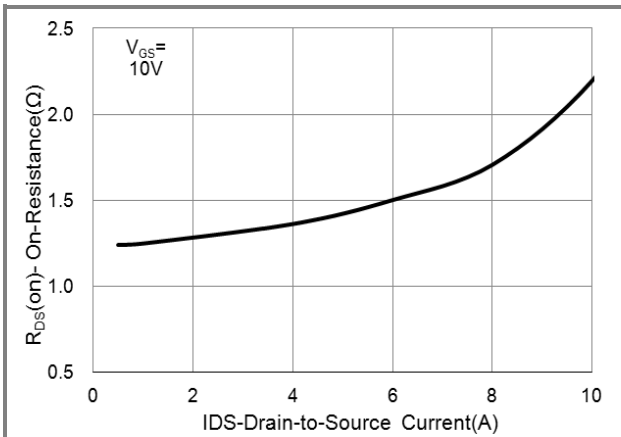


Fig.3 On-Resistance vs. Drain Current

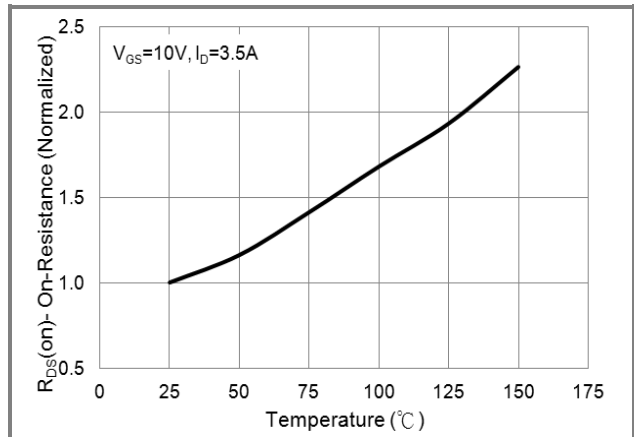


Fig.4 Resistance vs. Junction Temperature

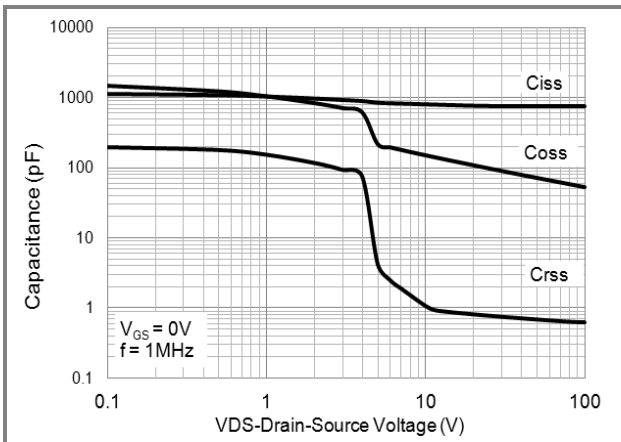


Fig.5 Capacitance vs. Drain-Source Voltage

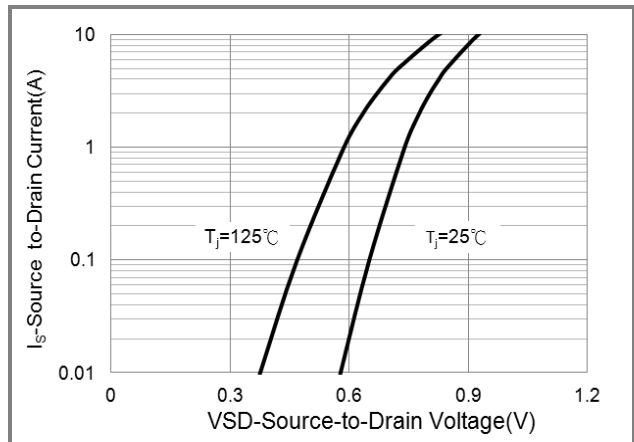


Fig.6 Source-Drain Diode Forward Voltage



PJU7NA65 / PJD7NA65 / PJP7NA65 / PJF7NA65

TYPICAL CHARACTERISTIC CURVES

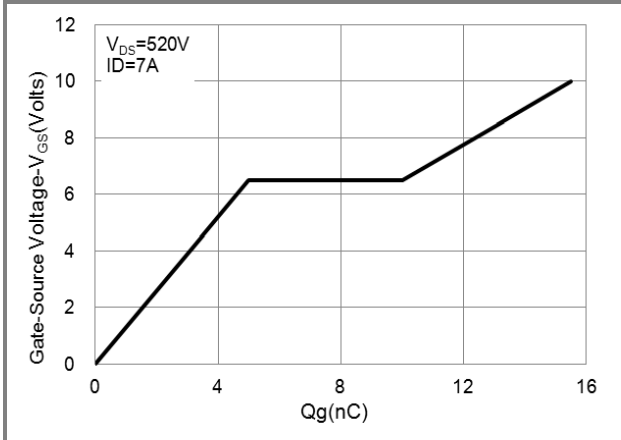


Fig.7 Gate Charge

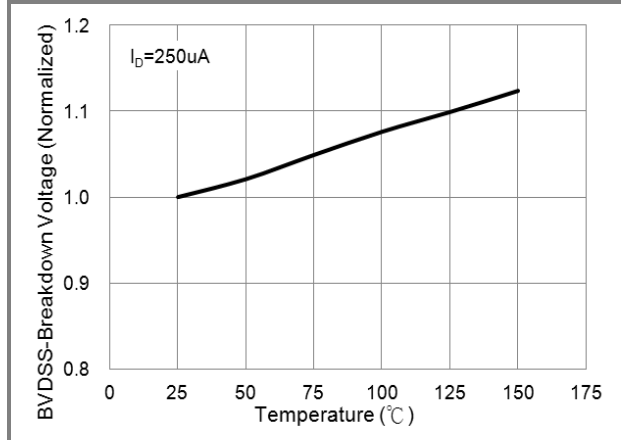


Fig.8 BV_{DSS} vs. Junction Temperature On-

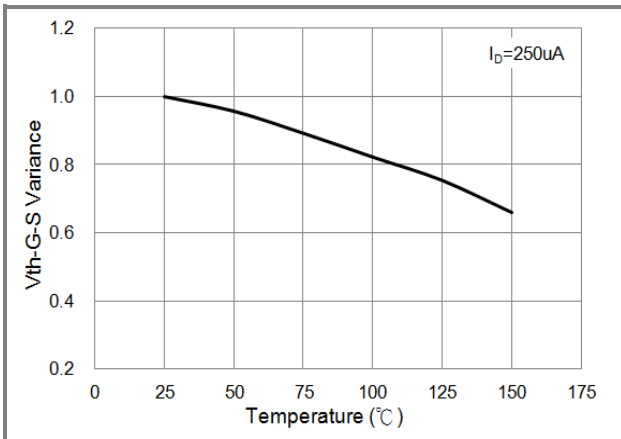


Fig.9 Threshold Voltage Variation with Temperature

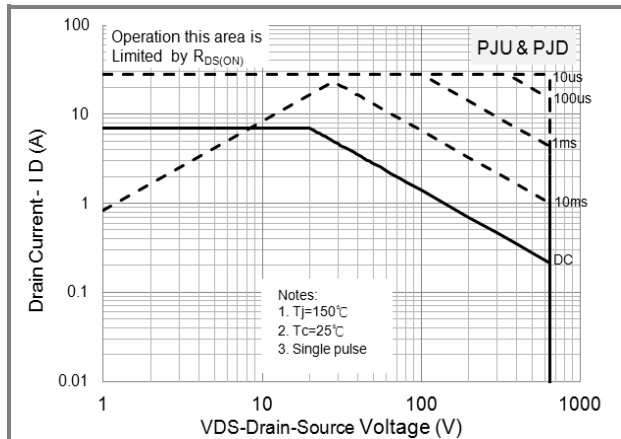


Fig.10 Maximum Safe Operating Area

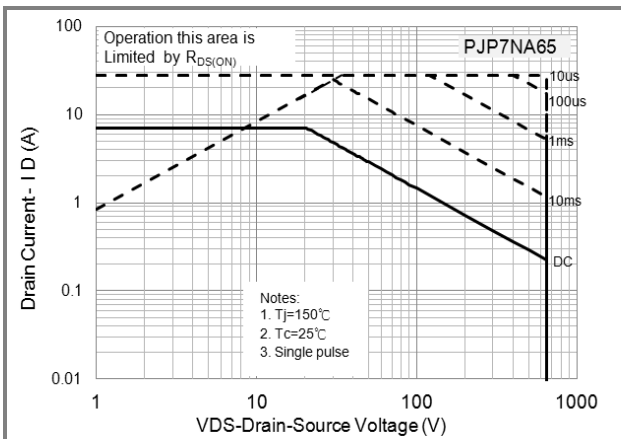


Fig.11 Maximum Safe Operating Area

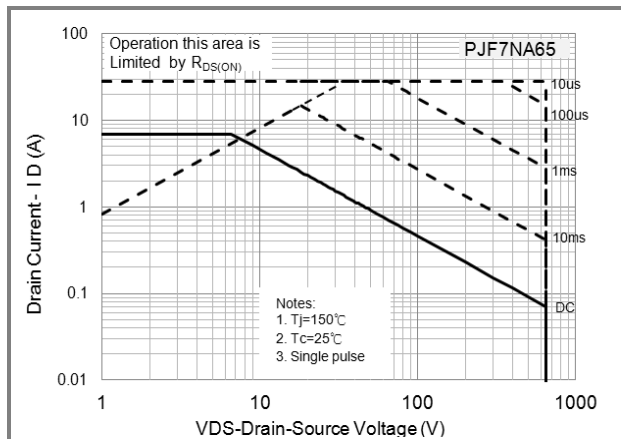


Fig.12 Maximum Safe Operating Area



PJU7NA65 / PJD7NA65 / PJP7NA65 / PJF7NA65

TYPICAL CHARACTERISTIC CURVES

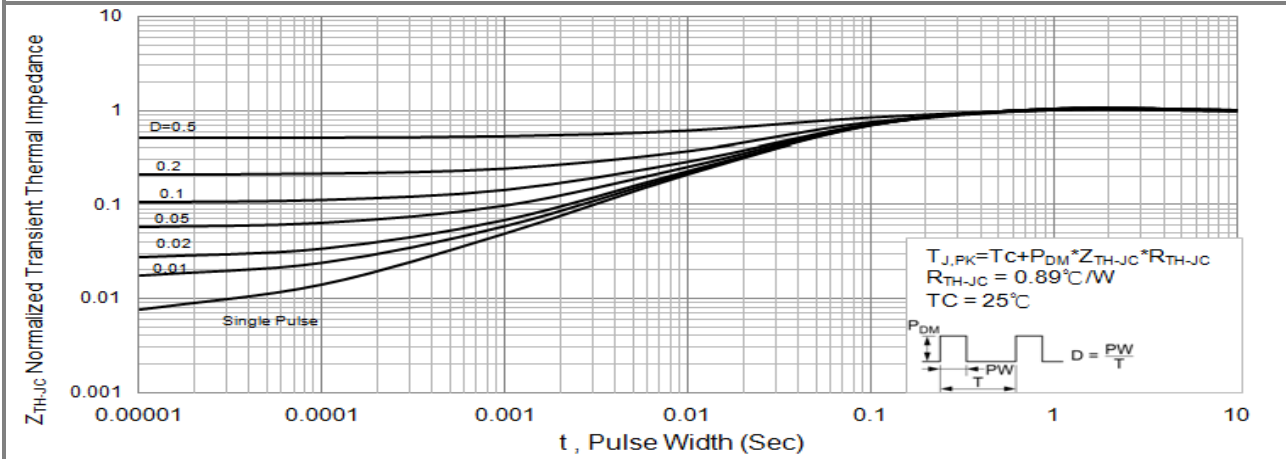


Fig.13 PJU/PJD Normalized Transient Thermal Impedance vs. Pulse Width

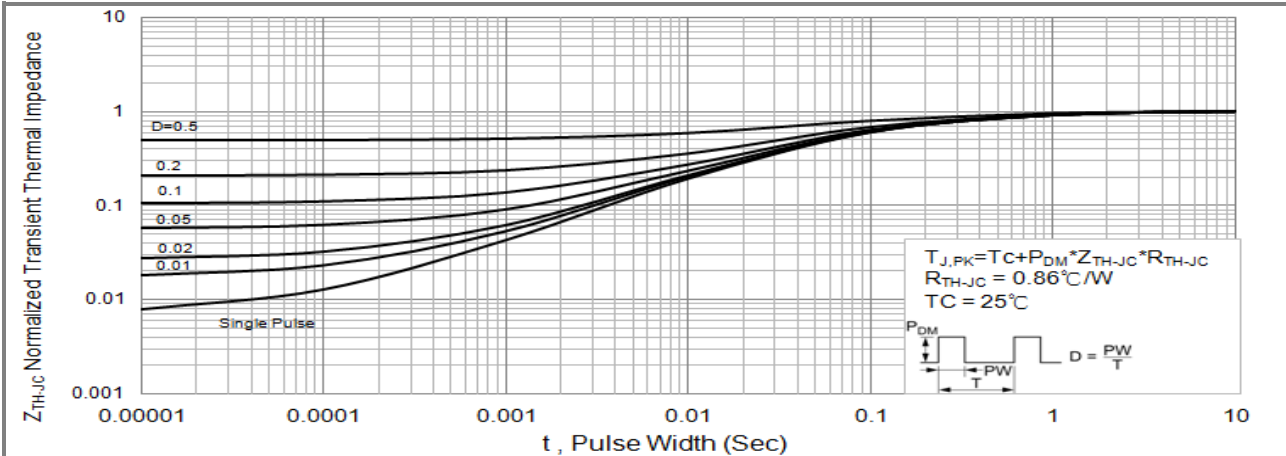


Fig.14 PJP7NA65 Normalized Transient Thermal Impedance vs. Pulse Width

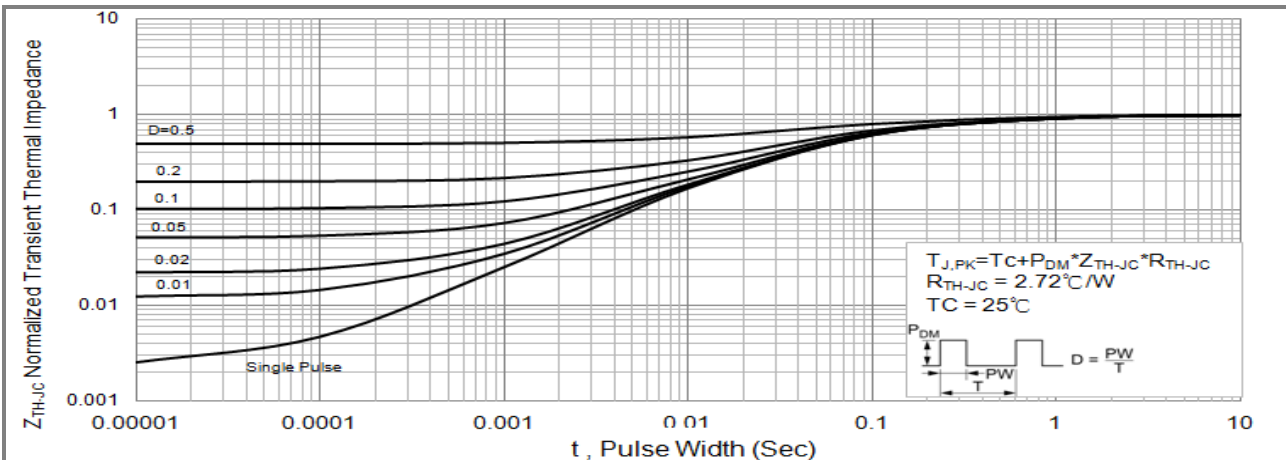


Fig.15 PJF7NA65 Normalized Transient Thermal Impedance vs. Pulse Width

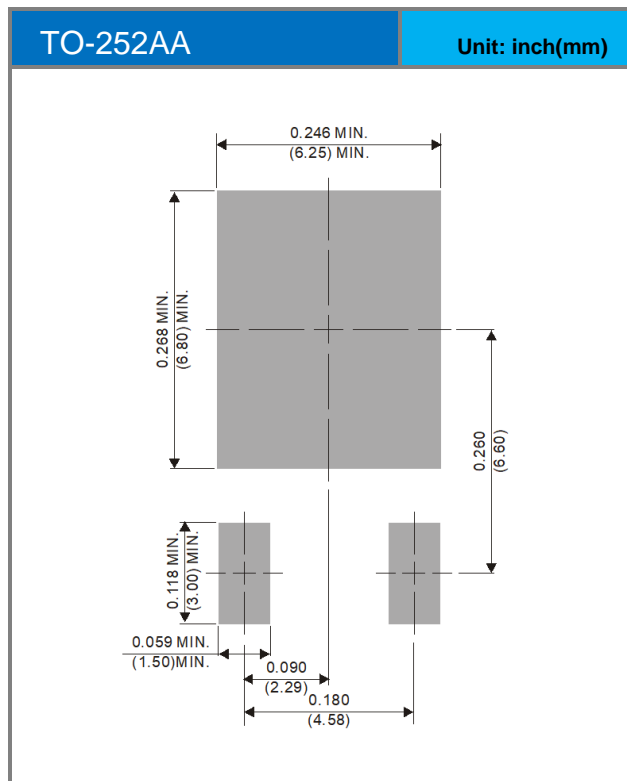


PJU7NA65 / PJD7NA65 / PJP7NA65 / PJF7NA65

Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJU7NA65_T0_00001	TO-251AA	80pcs / Tube	U7NA65	Halogen free
PJD7NA65_L2_00001	TO-252AA	3,000pcs / 13" reel	D7NA65	Halogen free
PJP7NA65_T0_00001	TO-220AB	50pcs / Tube	P7NA65	Halogen free
PJF7NA65_T0_00001	ITO-220AB-F	50pcs / Tube	F7NA65	Halogen free

Mounting Pad Layout





PJU7NA65 / PJD7NA65 / PJP7NA65 / PJF7NA65

Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.

单击下面可查看定价，库存，交付和生命周期等信息

[>>Panjit\(强茂\)](#)