

PJU8NA65A / PJD8NA65A / PJP8NA65A / PJF8NA65A

650V N-Channel MOSFET

Voltage

650 V

Current

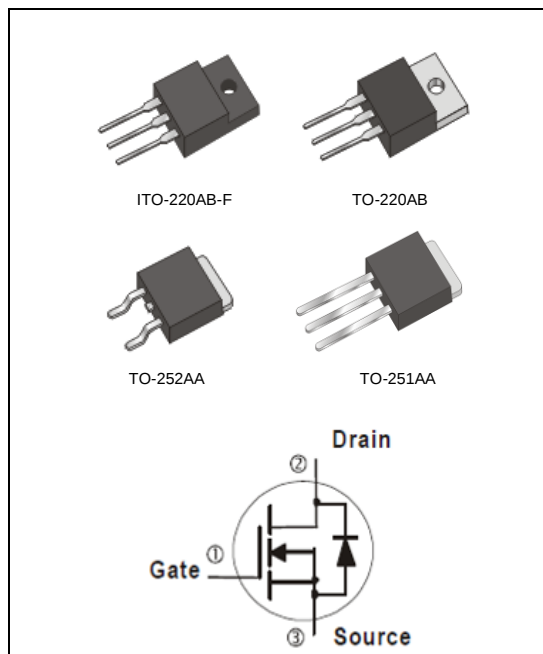
7.5 A

Features

- $R_{DS(ON)}$, $V_{GS}@10V$, $I_D@3.75A < 1.2\Omega$
- 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-251AA, TO-252AA, TO-220AB, ITO-220AB-F Package
- Terminals : Solderable per MIL-STD-750, Method 2026



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
Drain-Source Voltage		V_{DS}	650				V
Gate-Source Voltage		V_{GS}	+30				V
Continuous Drain Current		I_D	7.5				A
Pulsed Drain Current		I_{DM}	30				A
Single Pulse Avalanche Energy ^(Note 1)		E_{AS}	245				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							
- 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



PJU8NA65A / PJD8NA65A / PJP8NA65A / PJF8NA65A

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

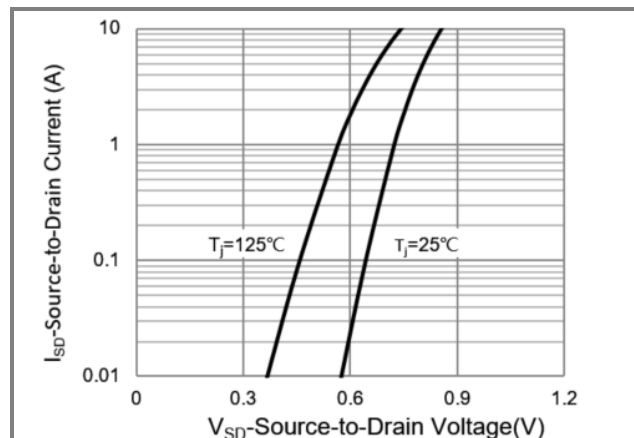
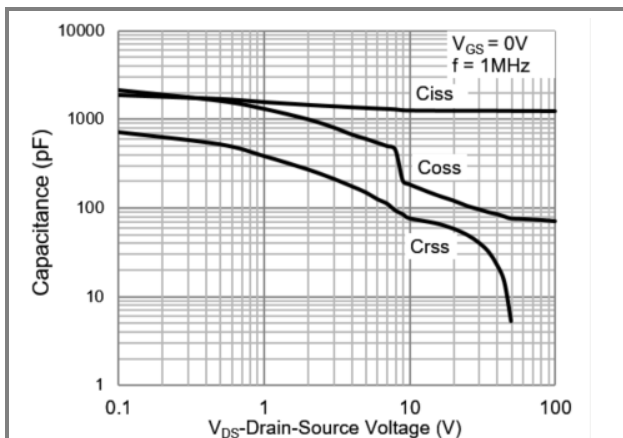
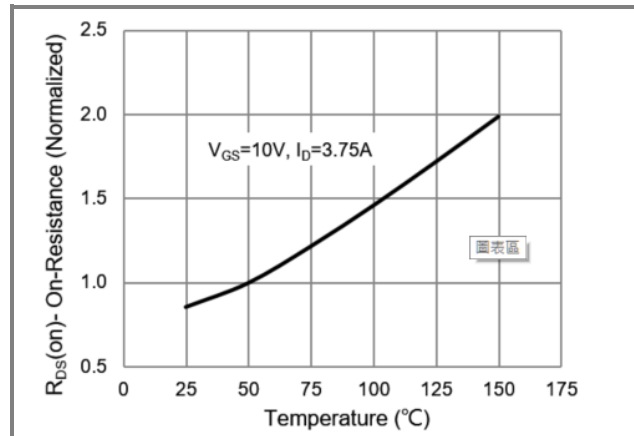
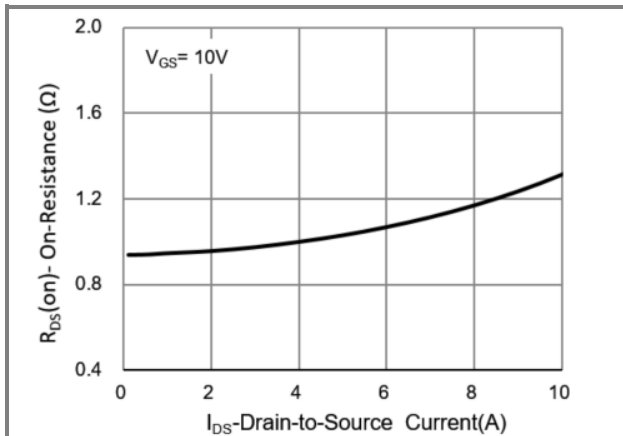
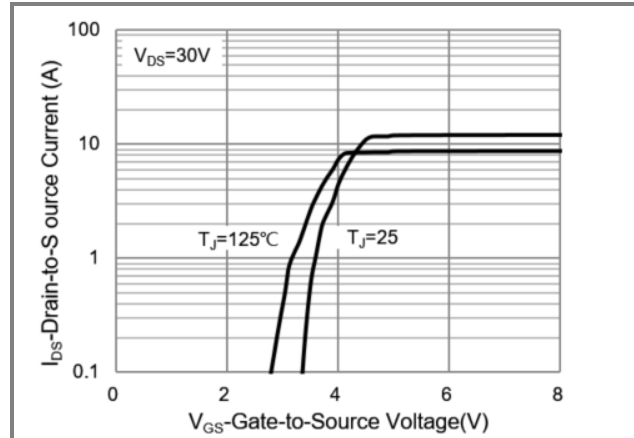
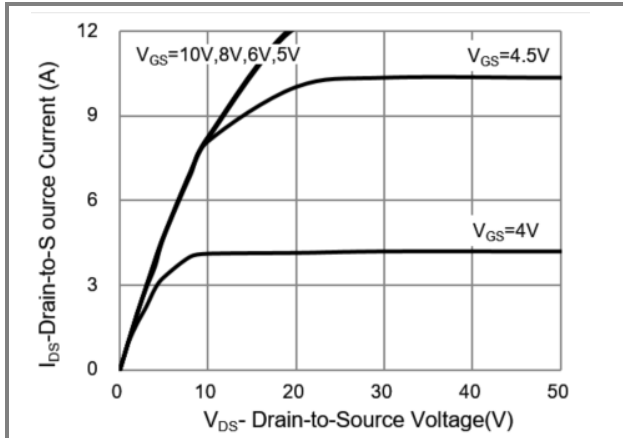
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V,I _D =250uA	650	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =250uA	2	2.89	4	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V,I _D =3.75A	-	0.91	1.2	Ω
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =650V,V _{GS} =0V	-	-	1.0	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±30V,V _{DS} =0V	-	-	±100	nA
Diode Forward Voltage	V _{SD}	I _S =7.5A,V _{GS} =0V	-	0.9	1.4	V
Dynamic ^(Note 4)						
Total Gate Charge	Q _g	V _{DS} =520V, I _D =7.5A, V _{GS} =10V ^(Note 2,3)	-	29	-	nC
Gate-Source Charge	Q _{gs}		-	5.5	-	
Gate-Drain Charge	Q _{gd}		-	9.7	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1.0MHZ	-	1245	-	pF
Output Capacitance	C _{oss}		-	105	-	
Reverse Transfer Capacitance	C _{rss}		-	50	-	
Turn-On Delay Time	td _(on)	V _{DD} =325V, I _D =7.5A, R _G =25Ω ^(Note 2,3)	-	15	-	ns
Turn-On Rise Time	t _r		-	27	-	
Turn-Off Delay Time	td _(off)		-	92	-	
Turn-Off Fall Time	t _f		-	36	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	7.5	A
Maximum Pulsed Drain-Source Diode Forward Current	I _{SM}	---	-	-	30	A
Reverse Recovery Time	trr	V _{GS} =0V, I _S =7.5A	-	360	-	ns
Reverse Recovery Charge	Qrr	dI _F / dt=100A/us ^(Note 2)	-	3.31	-	uC

NOTES :

1. $L=10\text{mH}, I_{AS}=7A, V_{DD}=50V, R_G=25\text{ ohm},$ 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. Guaranteed by design, not subject to production testing

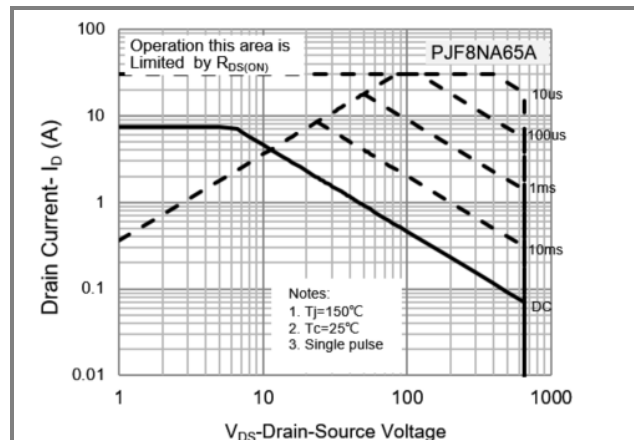
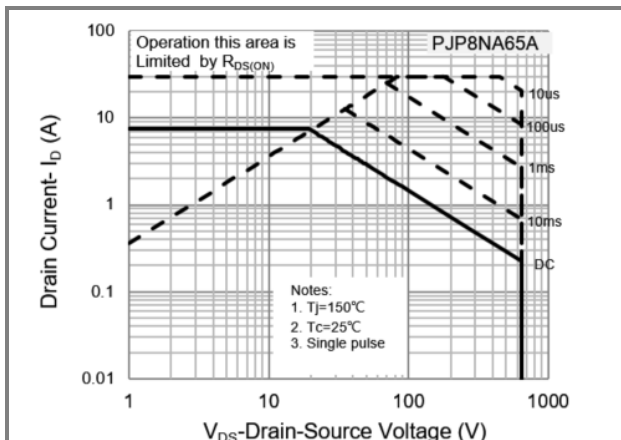
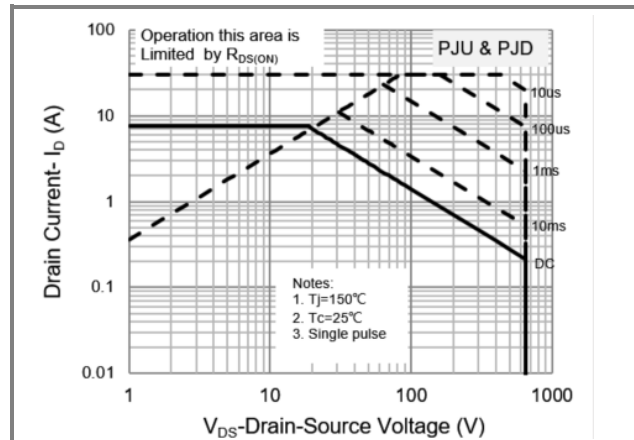
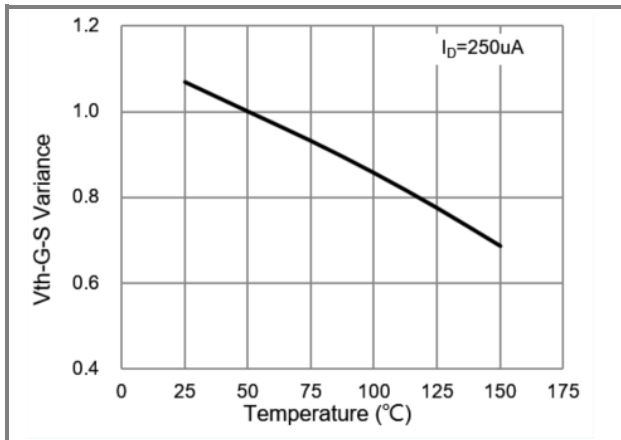
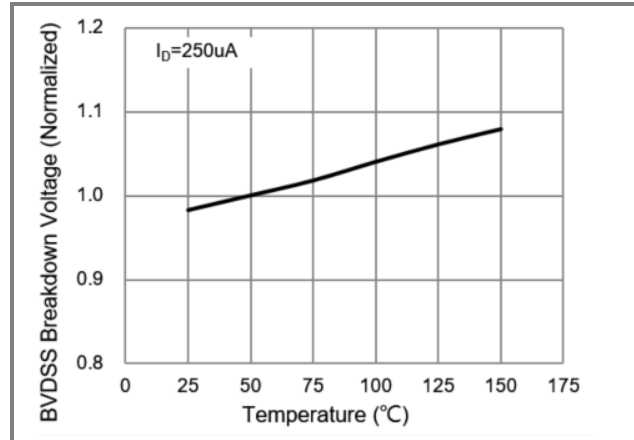
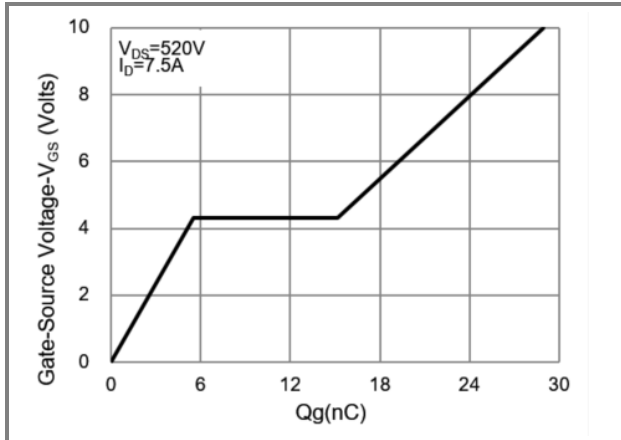
PJU8NA65A / PJD8NA65A / PJP8NA65A / PJF8NA65A

TYPICAL CHARACTERISTIC CURVES



PJU8NA65A / PJD8NA65A / PJP8NA65A / PJF8NA65A

TYPICAL CHARACTERISTIC CURVES



PJU8NA65A / PJD8NA65A / PJP8NA65A / PJF8NA65A

TYPICAL CHARACTERISTIC CURVES

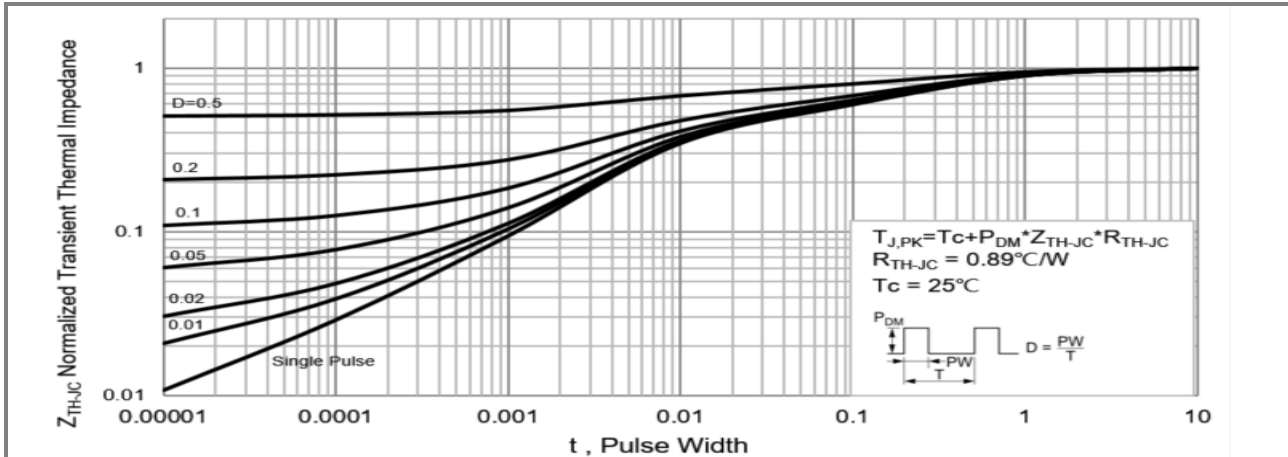


Fig.13 PJU/PJD Normalized Transient Thermal Impedance vs. Pulse Width

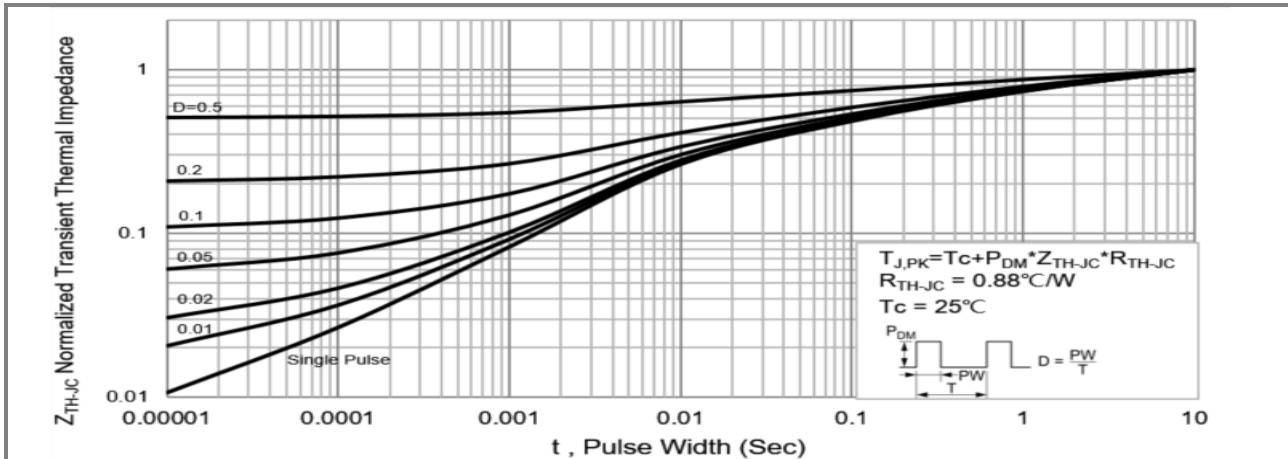


Fig.14 PJP8NA65A Normalized Transient Thermal Impedance vs. Pulse Width

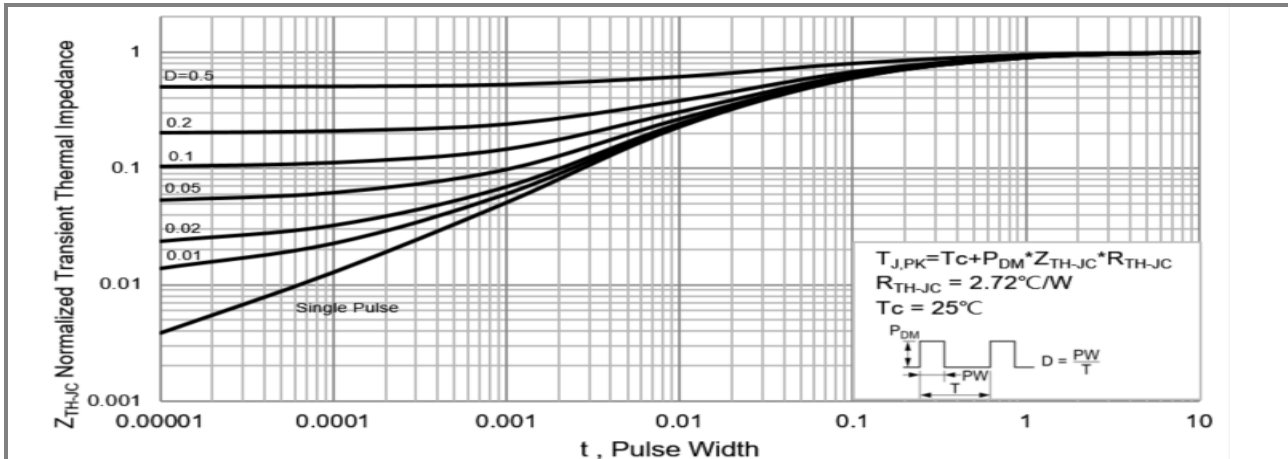


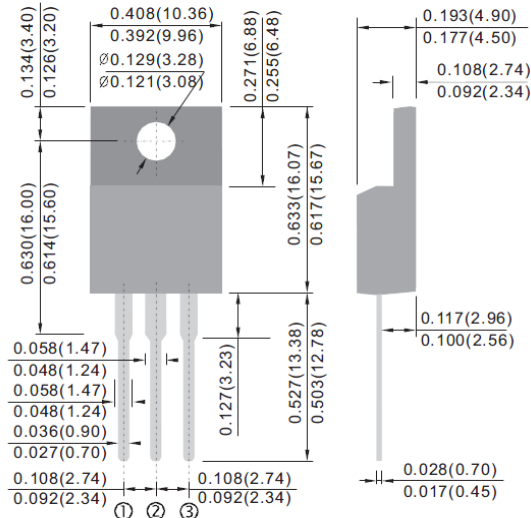
Fig.15 PJF8NA65A Normalized Transient Thermal Impedance vs. Pulse Width

PJU8NA65A / PJD8NA65A / PJP8NA65A / PJF8NA65A

Packaging Information

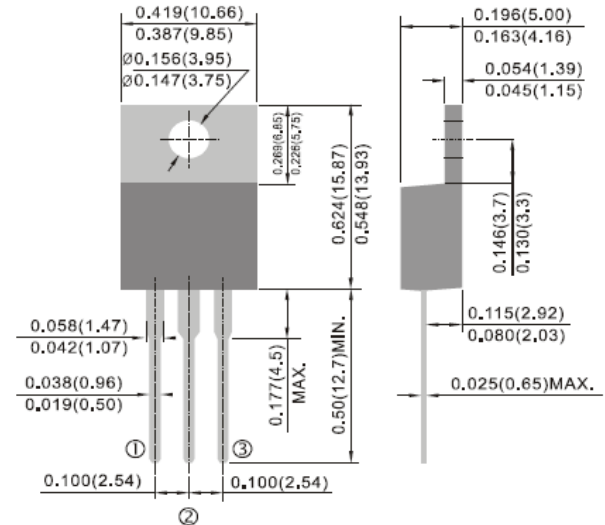
ITO-220AB-F Dimension

Unit: mm



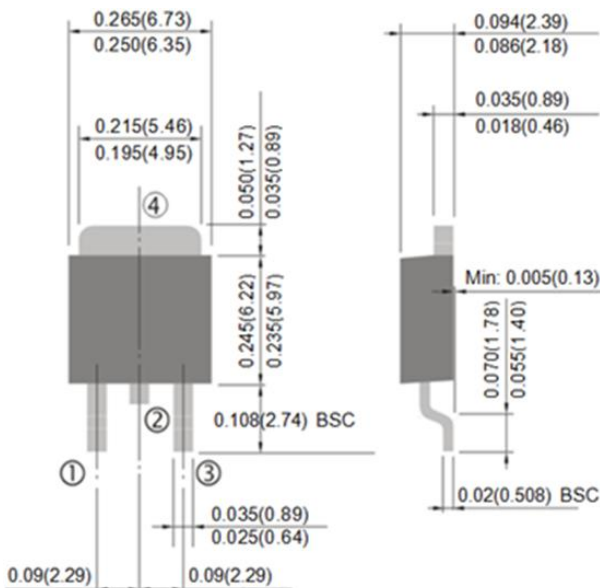
TO-220AB Dimension

Unit: mm



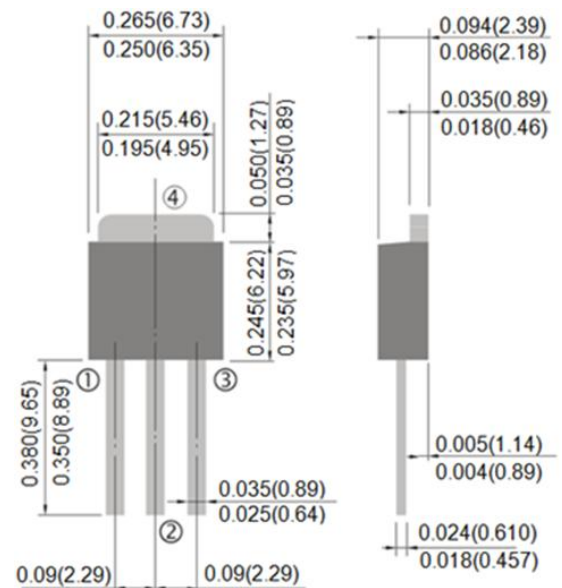
TO-252AA Dimension

Unit: mm



TO-251AA Dimension

Unit: mm





PJU8NA65A / PJD8NA65A / PJP8NA65A / PJF8NA65A

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJU8NA65A_T0_00001	TO-251AA	80pcs / Tube	U8NA65A	Halogen free
PJD8NA65A_L2_00001	TO-252AA	3,000pcs / 13" reel	D8NA65A	Halogen free
PJP8NA65A_T0_00001	TO-220AB	50pcs / Tube	P8NA65A	Halogen free
PJF8NA65A_T0_00001	ITO-220AB-F	50pcs / Tube	F8NA65A	Halogen free



PJU8NA65A / PJD8NA65A / PJP8NA65A / PJF8NA65A

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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Panjit:

[PJP8NA65A_T0_00001](#)