



PJU110N06 / PJD110N06 / PJP110N06 / PJF110N06

60V N-Channel Enhancement Mode MOSFET

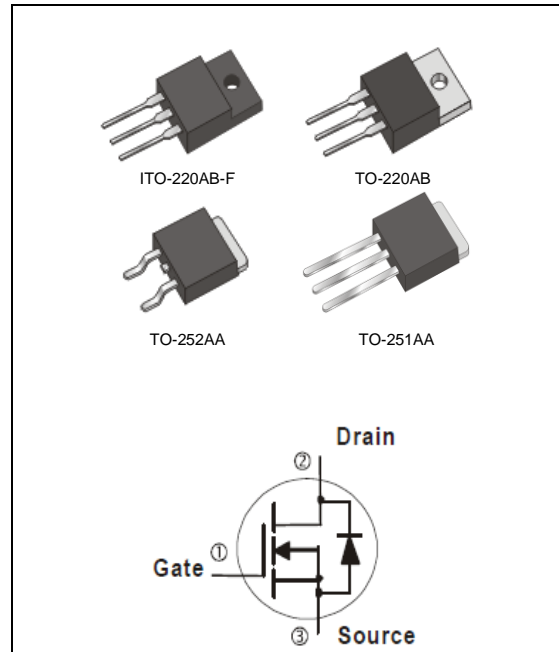
Voltage	60 V	Current	110 A
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Features

- $R_{DS(ON)}$, $V_{GS}@10V, I_D@20A < 8m\Omega$
- High switching speed
- Improved dv/dt capability
- 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
- TO-251AA Approx. Weight : 0.0104 ounces, 0.297grams
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- 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 ($T_A=25^\circ C$ unless otherwise noted)

PARAMETER		SYMBOL	TO-251AA	TO-220AB	ITO-220AB-F	TO-252AA	UNITS
Drain-Source Voltage		V_{DS}	60				V
Gate-Source Voltage		V_{GS}	+25				V
Continuous Drain Current	$T_C=25^\circ C$	I_D	110				A
	$T_C=100^\circ C$		81				
Pulsed Drain Current (Note 1)	$T_C=25^\circ C$	I_{DM}	440				
Power Dissipation	$T_C=25^\circ C$	P_D	214	250	88	214	W
	$T_C=100^\circ C$		107	125	44	107	
Continuous Drain Current	$T_A=25^\circ C$	I_D	11.2				A
	$T_A=70^\circ C$		9.4				
Power Dissipation	$T_A=25^\circ C$	P_D	2.5	2.0	1.0	2.5	W
Power Dissipation	$T_A=70^\circ C$		1.6	1.3	0.7	1.6	
Single Pulse Avalanche Energy (Note 6)		E_{AS}	101				mJ
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150				$^\circ C$
Typical Thermal resistance (Note 4,5)							
-	Junction to Case	$R_{\theta JC}$	1.5	1.25	3.5	1.5	$^\circ C/W$
-	Junction to Ambient	$R_{\theta JA}$	50	62.5	120	50	

- 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	3	4	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$	-	6.5	8	m Ω
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=48V, V_{GS}=0V$	-	-	1.0	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 25V, V_{DS}=0V$	-	-	± 100	nA
Dynamic <small>(Note 7)</small>						
Total Gate Charge	Q_g	$V_{DS}=30V, I_D=30A,$ $V_{GS}=10V$ <small>(Note 2,3)</small>	-	70	-	nC
Gate-Source Charge	Q_{gs}		-	16	-	
Gate-Drain Charge	Q_{gd}		-	24	-	
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $f=1.0\text{MHz}$	-	3580	-	pF
Output Capacitance	C_{oss}		-	360	-	
Reverse Transfer Capacitance	C_{rss}		-	245	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=30V, I_D=30A,$ $V_{GS}=10V, R_G=6.8\Omega$ <small>(Note 2,3)</small>	-	16	-	ns
Turn-On Rise Time	t_r		-	118	-	
Turn-Off Delay Time	$t_{d(off)}$		-	52	-	
Turn-Off Fall Time	t_f		-	62	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	110	A
Diode Forward Voltage	V_{SD}	$I_S=20A, V_{GS}=0V$	-	-	1.3	V

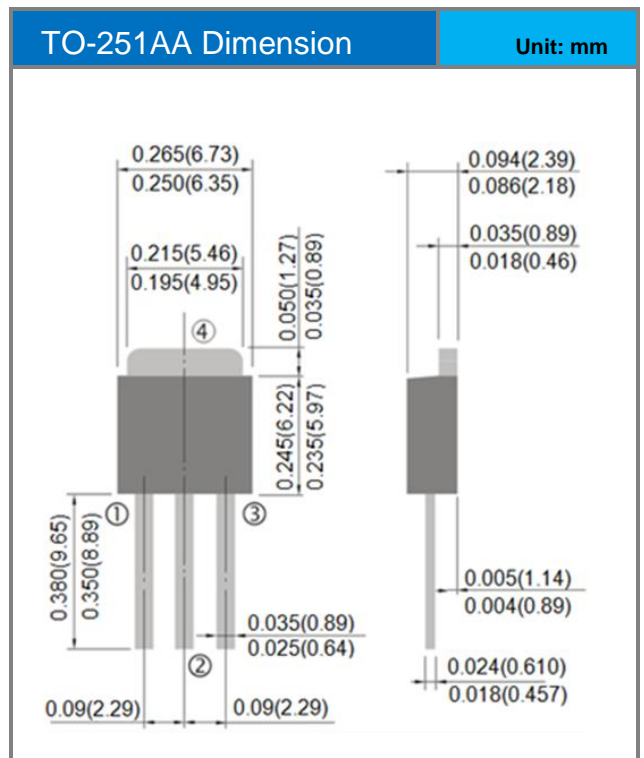
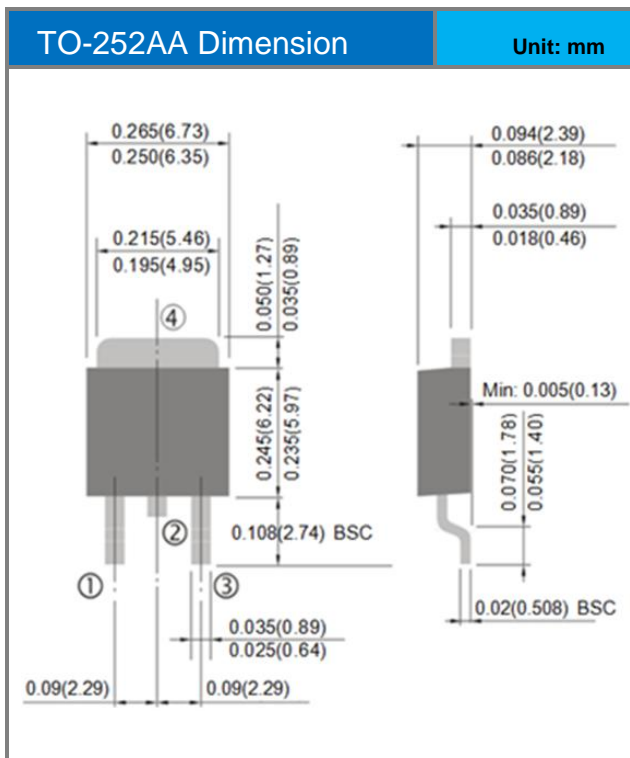
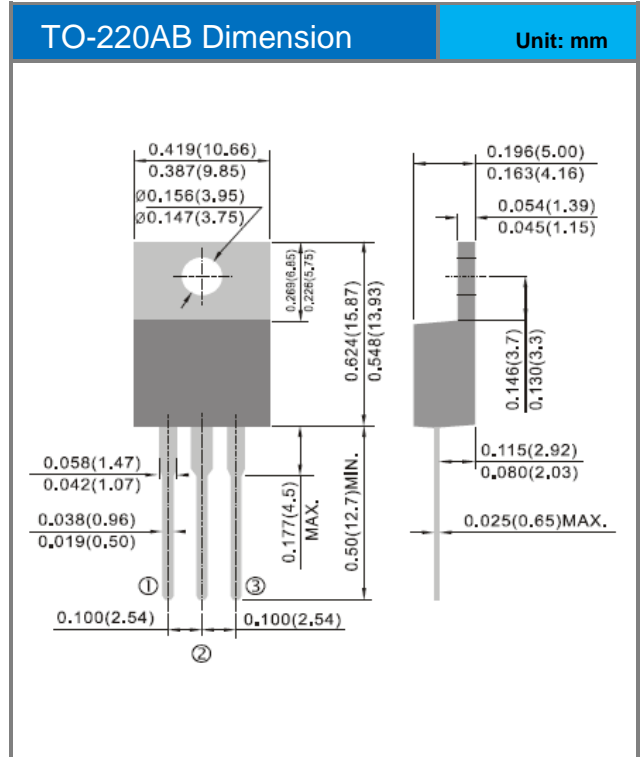
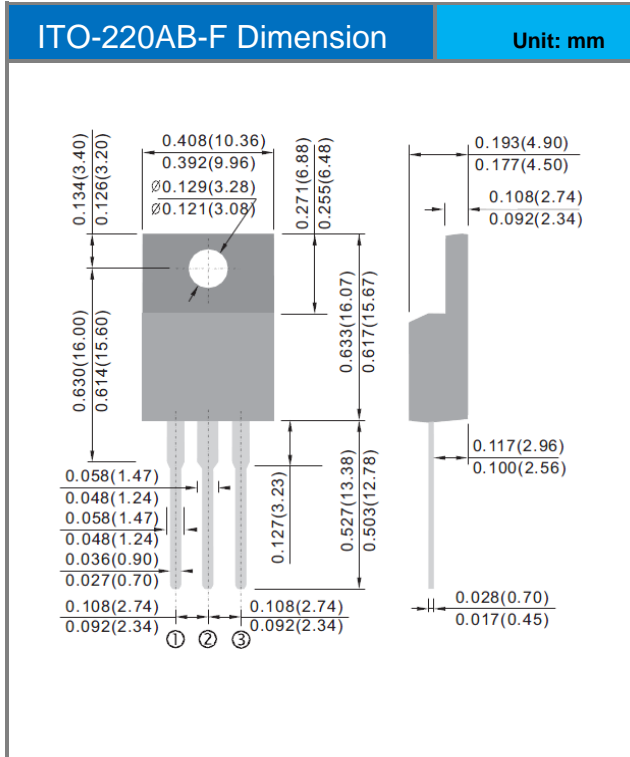
NOTES :

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 $L=0.1\text{mH}$, $I_{AS}=45A$, $V_{DD}=25V$, $V_{GS}=10V$, $R_G=25\text{ohm}$, Starting $T_J=25^\circ\text{C}$
7. Guaranteed by design, not subject to production testing.



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Packaging Information



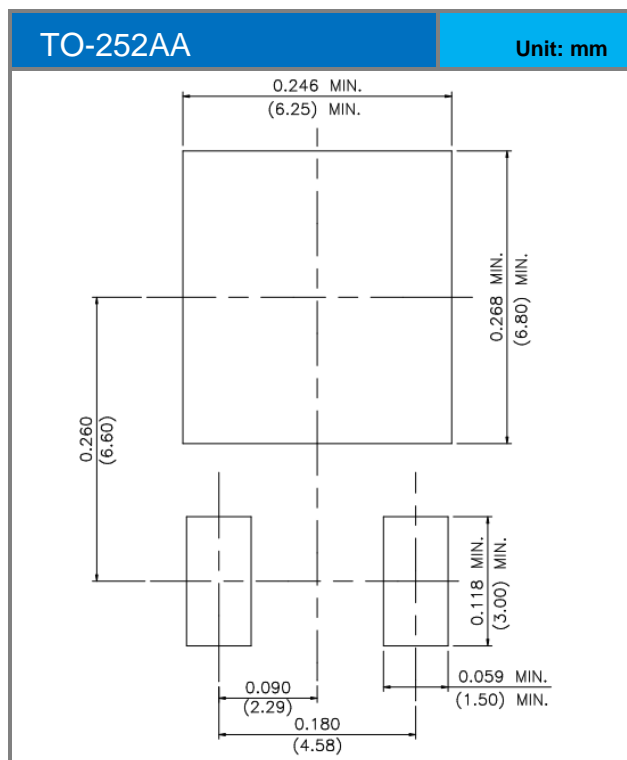


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PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJD110N06_L2_00001	TO-252AA	3,000pcs / 13" reel	D110N06	Halogen free
PJU110N06_T0_00001	TO-251AA	80pcs / Tube	U110N06	Halogen free
PJP110N06_T0_00001	TO-220AB	50pcs / Tube	P110N06	Halogen free
PJF110N06_T0_00001	ITO-220AB-F	50pcs / Tube	F110N06	Halogen free

MOUNTING PAD LAYOUT





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