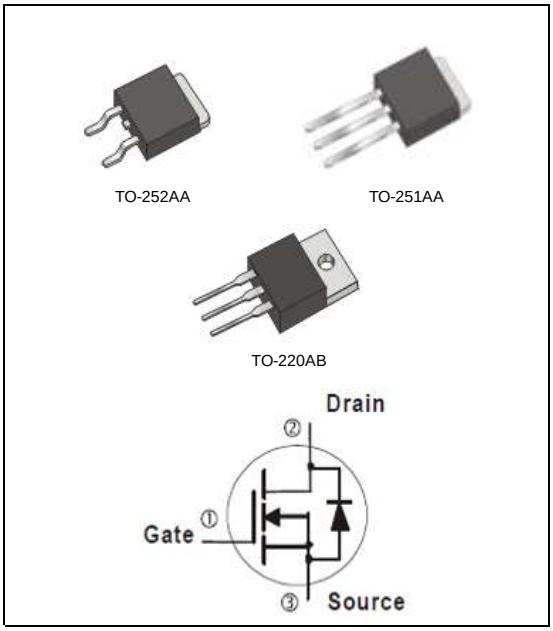
PJU60N08 / PJD60N08 / PJP60N08

80V N-Channel Enhancement Mode MOSFET

Voltage	80 V	Current	60 A



Features

- $R_{DS(ON)}$, V_{GS}@10V,I_D@20A<10mΩ
- High switching speed
- Low Gate Charge
- 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-251AA,TO-252AA ,TO-220AB Package
- Terminals : Solderable per MIL-STD-750, Method 2026

Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	TO-251AA	TO-220AB	TO-252AA	UNITS
Drain-Source Voltage		V_{DS}	80			V
Gate-Source Voltage		V_{GS}	±25			V
Continuous Drain Current	T_C=25°C	I_D	60			A
	T_C=100°C		38			
Pulsed Drain Current	T_C=25°C	I_{DM}	180			
Power Dissipation	T_C=25°C	P_D	76	100	76	W
	T_C=100°C		30	40	30	
Single Pulse Avalanche Energy (Note 6)		E_{AS}	180			mJ
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150			°C
Typical Thermal Resistance - Junction to Case - Junction to Ambient		 $R_{\theta JC}$ $R_{\theta JA}$	 1.64 110	 1.25 62.5	 1.64 110	°C/W

- Limited only By Maximum Junction Temperature

PJU60N08 / PJD60N08 / PJP60N08

Electrical Characteristics (T_A=25°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	80	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	2.0	3.0	4.0	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=20A	-	8.8	10	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=64V,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}=30V, I_D=30A, V_{GS}=10V (Note 1,2)	-	73	-	nC
Gate-Source Charge	Q_{gs}		-	17	-	
Gate-Drain Charge	Q_{gd}		-	20	-	
Input Capacitance	Ciss	V_{DS}=25V, V_{GS}=0V, f=1.0MHZ	-	3855	-	pF
Output Capacitance	Coss		-	292	-	
Reverse Transfer Capacitance	Crss		-	172	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=30V, I_D=30A, V_{GS}=10V, R_G=6Ω (Note 1,2)	-	19	-	ns
Turn-On Rise Time	t_r		-	79	-	
Turn-Off Delay Time	$td_{(off)}$		-	71	-	
Turn-Off Fall Time	t_f		-	54	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	60	A
Diode Forward Voltage	V_{SD}	I_S=1A,V_{GS}=0V	-	0.8	1.0	V

NOTES :

1. Pulse width≤300us, Duty cycle≤2%
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature TJ(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial TJ =25°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 $inch^2$ with 2oz.square pad of copper.
6. The test condition is L=0.1mH, I_{AS}=60A, V_{DD}=25V, V_{GS}=10V
7. Guaranteed by design, not subject to production testing.

PJU60N08 / PJD60N08 / PJP60N08

TYPICAL CHARACTERISTIC CURVES

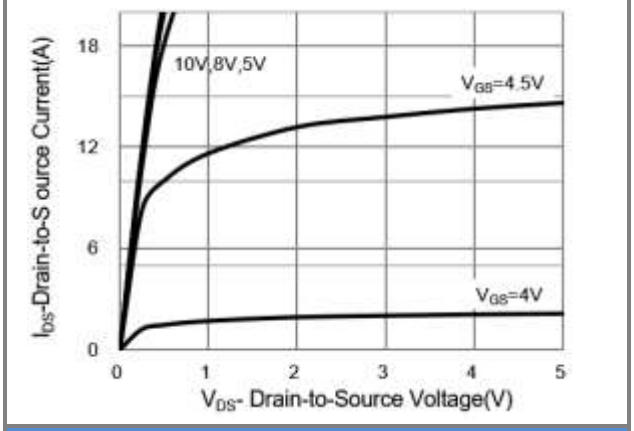


Fig.1 Output Characteristics

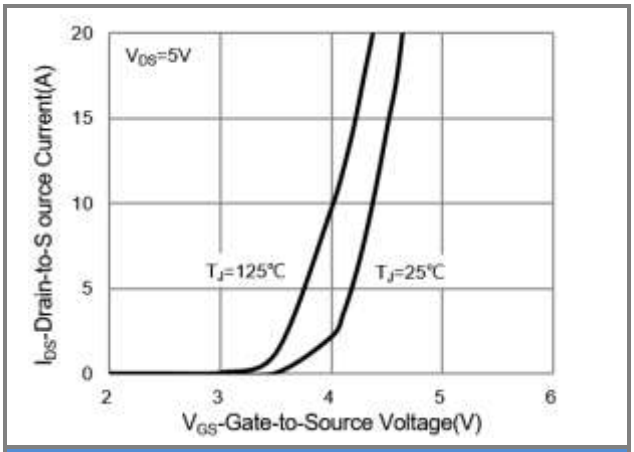


Fig.2 Transfer Characteristics

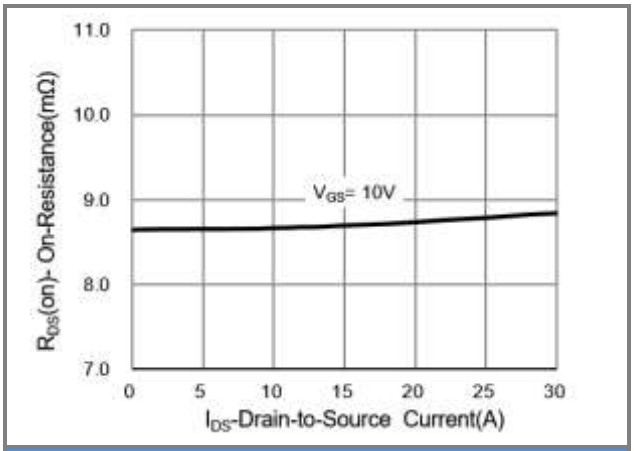


Fig.3 On-Resistance vs. Drain Current

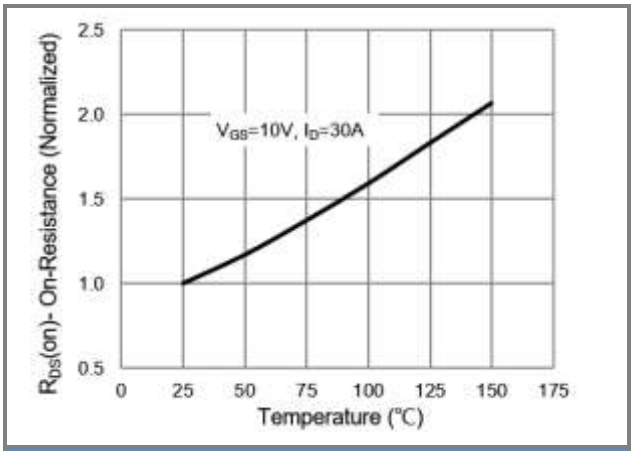


Fig.4 On-Resistance vs. Junction temperature

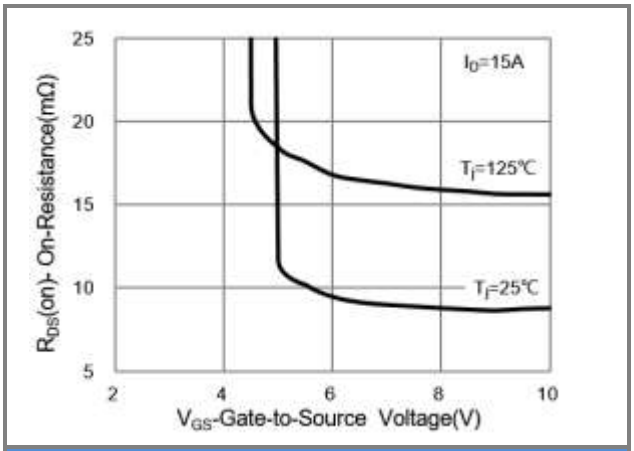


Fig.5 On-Resistance Variation with VGS.

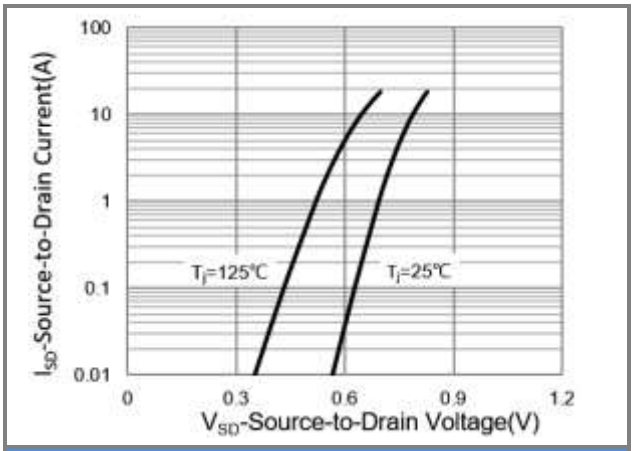


Fig.6 Source-Drain Diode Forward Voltage

PJU60N08 / PJD60N08 / PJP60N08

TYPICAL CHARACTERISTIC CURVES

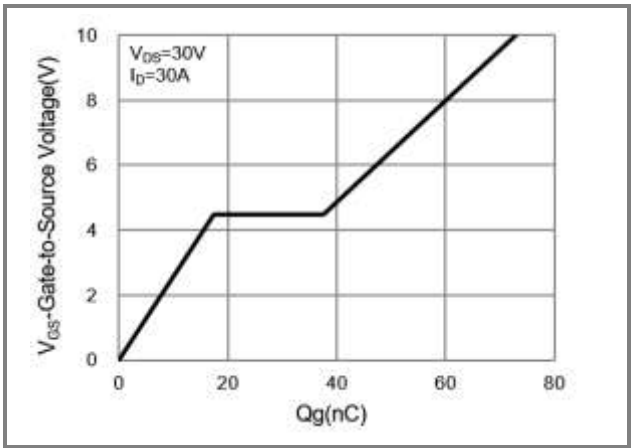


Fig.7 Gate-Charge Characteristics

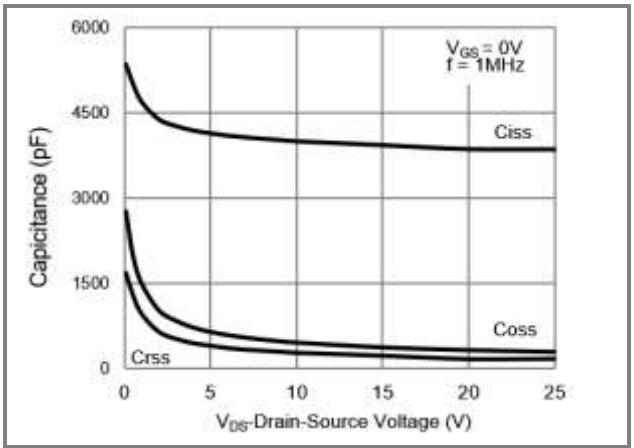


Fig.8 Capacitance vs. Drain-Source Voltage

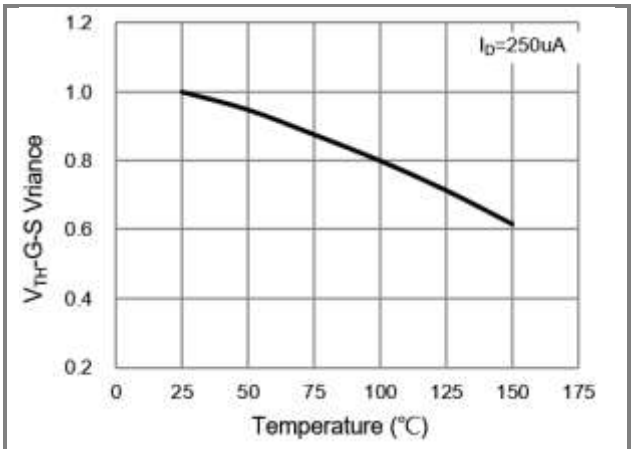


Fig.9 Threshold Voltage Variation with Temperature

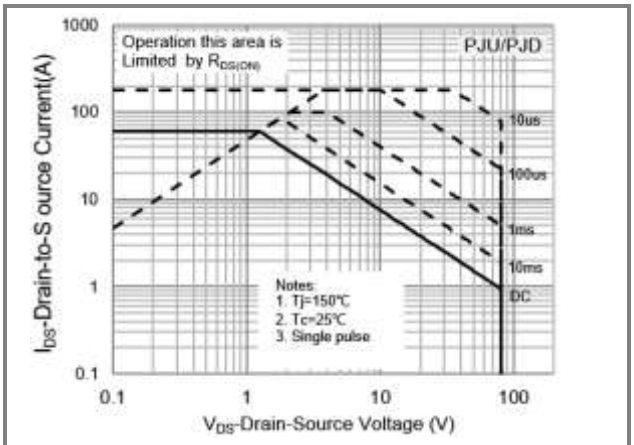


Fig.10 Maximum Safe Operating Area

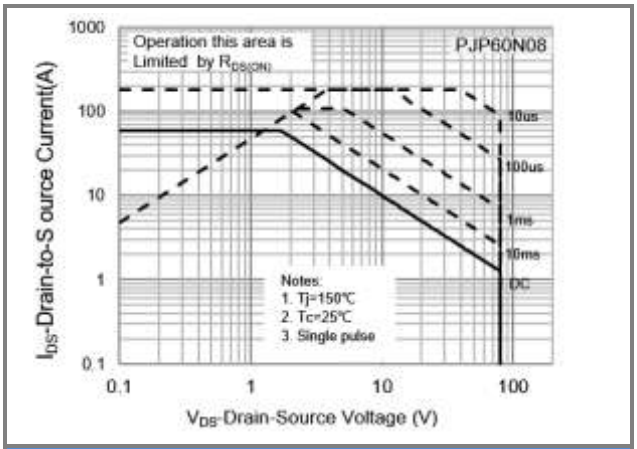


Fig.11 Maximum Safe Operating Area

PJU60N08 / PJD60N08 / PJP60N08

TYPICAL CHARACTERISTIC CURVES

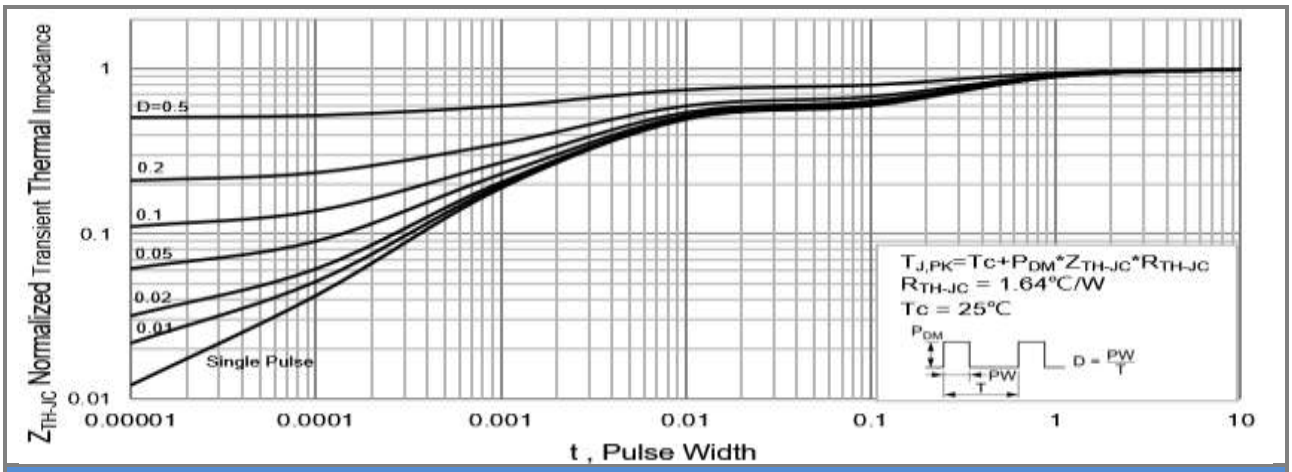


Fig.12 PJU/PJD Normalized Transient Thermal Impedance vs. Pulse Width

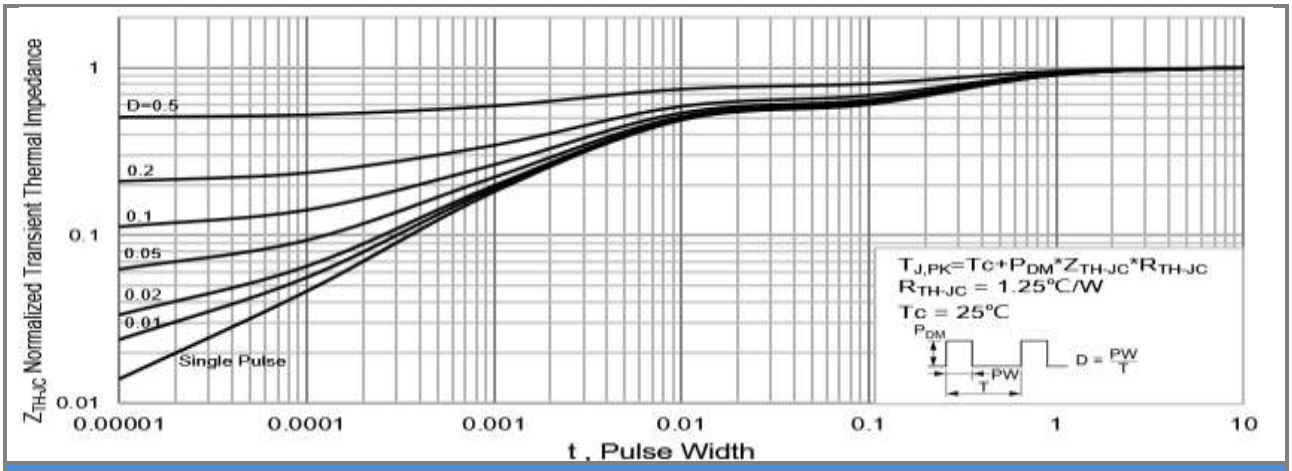


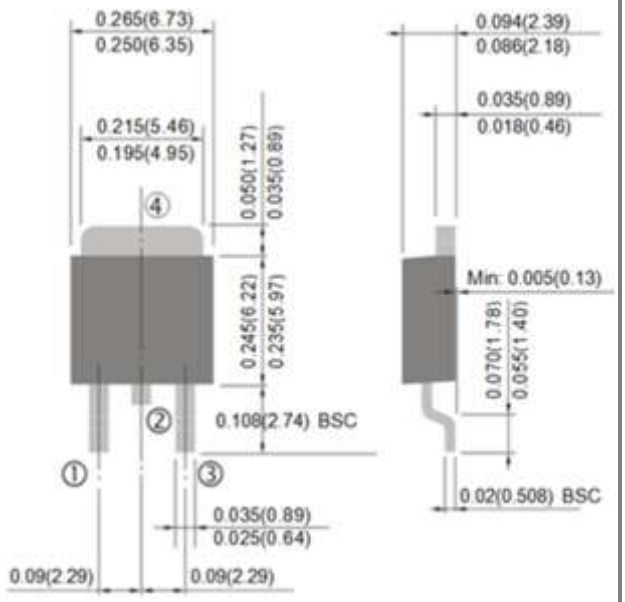
Fig.13 Normalized Transient Thermal Impedance vs. Pulse Width

PJU60N08 / PJD60N08 / PJP60N08

Packaging Information .

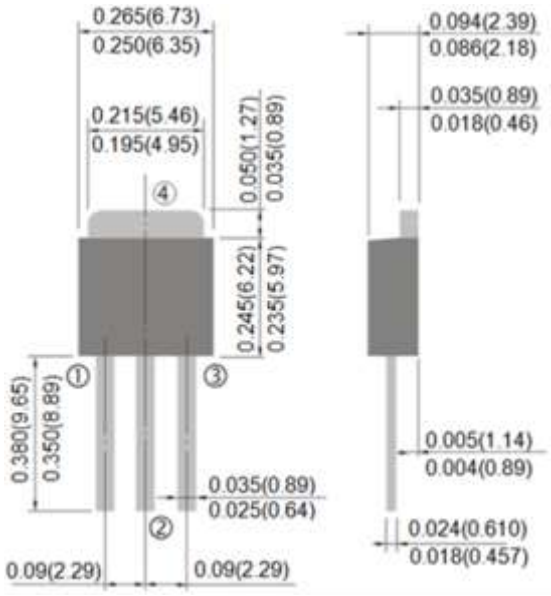
TO-252AA Dimension

Unit: inch(mm)



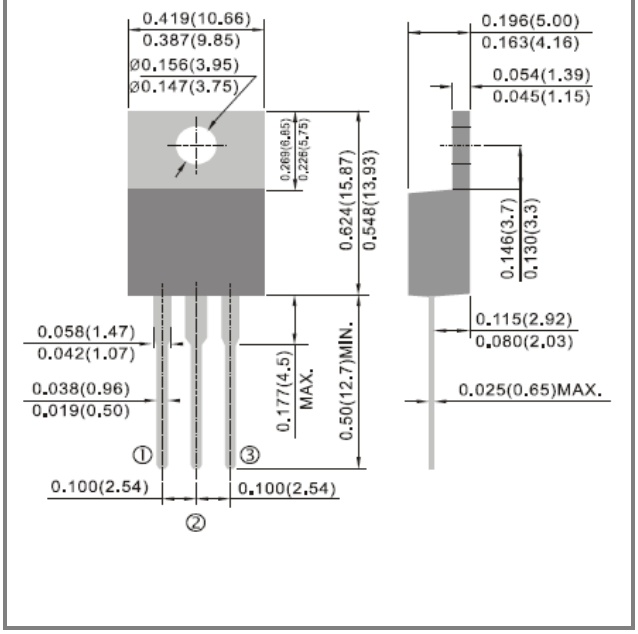
TO-251AA Dimension

Unit: inch(mm)



TO-220AB Dimension

Unit: inch(mm)



PJU60N08 / PJD60N08 / PJP60N08

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJU60N08_T0_00001	TO-251AA	80pcs / Tube	U60N08	Halogen free
PJD60N08_L2_00001	TO-252AA	3,000pcs / 13” reel	D60N08	Halogen free
PJP60N08_T0_00001	TO-220AB	50pcs / Tube	P60N08	Halogen free

PJU60N08 / PJD60N08 / PJP60N08

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