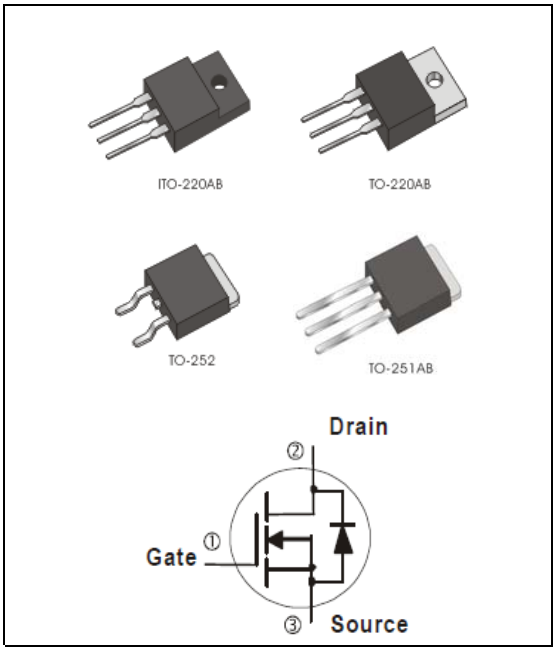
PJU2NA60 / PJP2NA60 / PJF2NA60 / PJD2NA60

600V N-Channel MOSFET

Voltage	600 V	Current	2 A



Features

- $R_{DS(ON)}$, V_{GS}@10V,I_D@1A<4.4Ω
- 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-251AB ,TO-220AB, ITO-220AB, TO-252 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- TO-251AB Approx. Weight : 0.0104 ounces, 0.297grams
- TO-220AB Approx. Weight : 0.065 ounces, 1.859 grams
- ITO-220AB Approx. Weight : 0.056 ounces, 1.6 grams
- TO-252 Approx. Weight : 0.0104 ounces, 0.297grams

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

PARAMETER		SYMBOL	TO-251AB	TO-220AB	ITO-220AB	TO-252	UNITS
Drain-Source Voltage		V_{DS}	600				V
Gate-Source Voltage		V_{GS}	±30				V
Continuous Drain Current		I_D	2				A
Pulsed Drain Current		I_{DM} 8					A
Single Pulse Avalanche Energy (Note 1)		E_{AS}	115				mJ
Power Dissipation	T_C=25°C	P_D	34 44		23	34	W
	Derate above 25°C		0.27	0.35	0.18	0.27	W/°C
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150				°C
Thermal resistance							
- Junction to Case		$R_{\theta JC}$	3.67	2.84	5.43	3.67	°C/W
- Junction to Ambient		$R_{\theta JA}$	110	62.5	120	110	

- Limited only By Maximum Junction Temperature

PJU2NA60 / PJP2NA60 / PJF2NA60 / PJD2NA60

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 600		-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA 2		3.2	4	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=1A -		4	4.4	Ω
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=600V,V_{GS}=0V -		0.02	1.0	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±30V,V_{DS}=0V -		±10	±100 n	A
Diode Forward Voltage	V_{SD}	I_S=2A,V_{GS}=0V -		0.86	1.4	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=480V, I_D=2A, V_{GS}=10V (Note 2,3)	- 5.7		-	nC
Gate-Source Charge	Q_{gs} -			1.8	-	
Gate-Drain Charge	Q_{gd} -			2	-	
Input Capacitance	Ciss	V_{DS}=25V, V_{GS}=0V, f=1.0MHZ	- 257		-	pF
Output Capacitance	Coss		-	39.7	-	
Reverse Transfer Capacitance	Crss		-	0.92	-	
Switching						
Turn-On Delay Time	$td_{(on)}$	V_{DD}=300V, I_D=2A, R_G=25Ω (Note 2,3)	- 10		-	ns
Turn-On Rise Time	t_r -			24	-	
Turn-Off Delay Time	$td_{(off)}$ -			16	-	
Turn-Off Fall Time	t_f -			21	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S -	--	-	-	2	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM} -	--	-	-	8	A
Reverse Recovery Time	trr	V_{GS}=0V, I_S=2A	- 357		-	ns
Reverse Recovery Charge	Qrr	dI_F/ dt=100A/us (Note 2)	-	2	-	uC

NOTES :

1. L= 30mH, I_{AS}=2.7A, V_{DD}=50V, R_G=25ohm, Starting T_J=25°C
2. Pulse width≤300us, Duty cycle≤2%
3. Essentially independent of operating temperature typical characteristics.

PJU2NA60 / PJP2NA60 / PJF2NA60 / PJD2NA60

TYPICAL CHARACTERISTIC CURVES

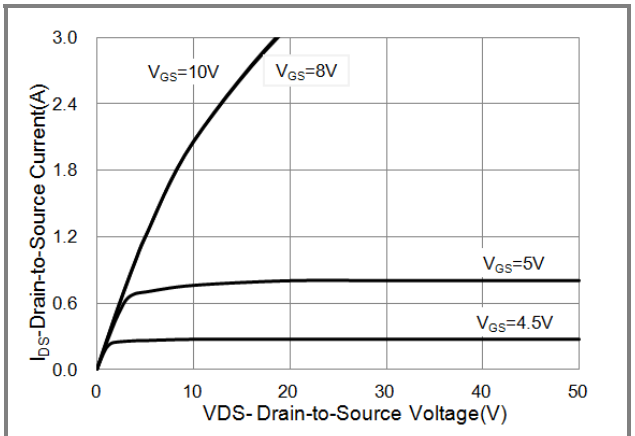


Fig.1 Output Characteristics

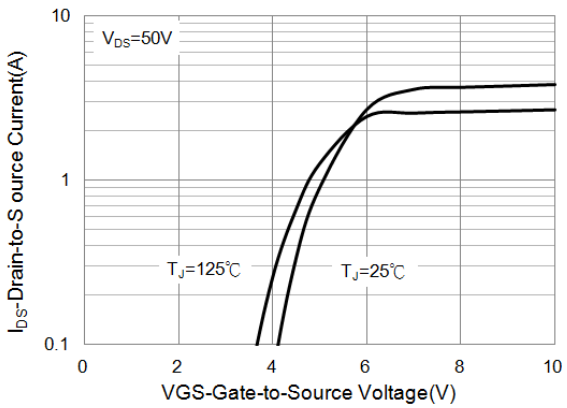


Fig.2 Transfer Characteristics

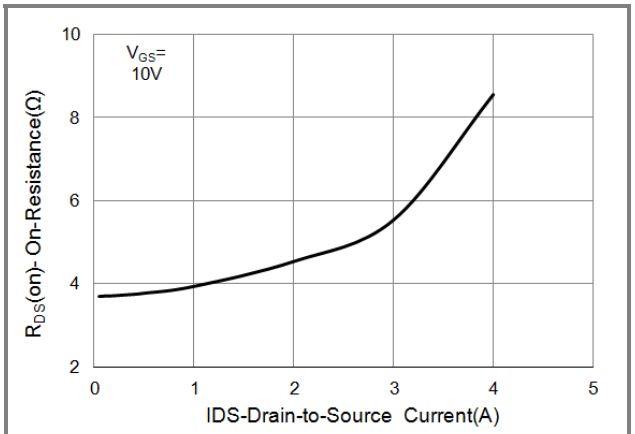


Fig.3 On-Resistance vs. Drain Current

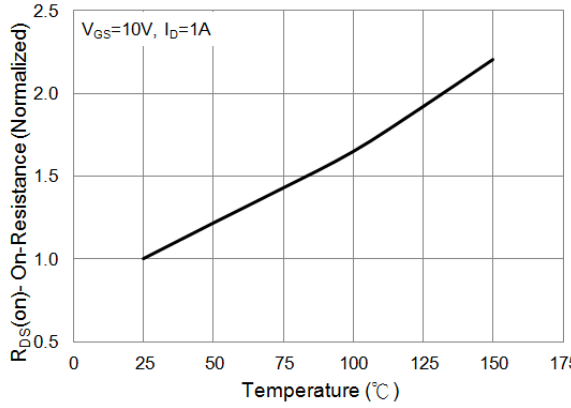


Fig.4 On-Resistance vs. Junction Temperature

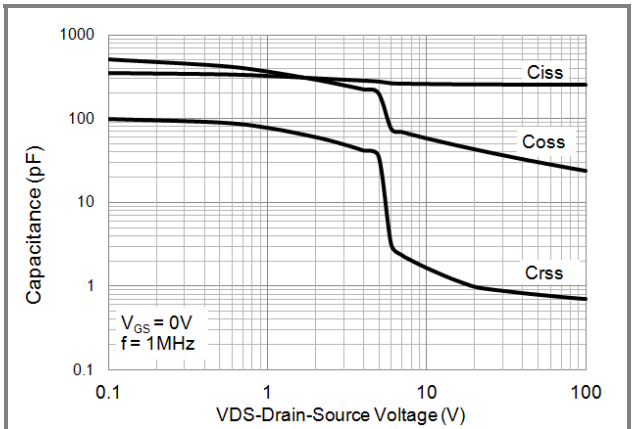


Fig.5 Capacitance vs. Drain-Source Voltage

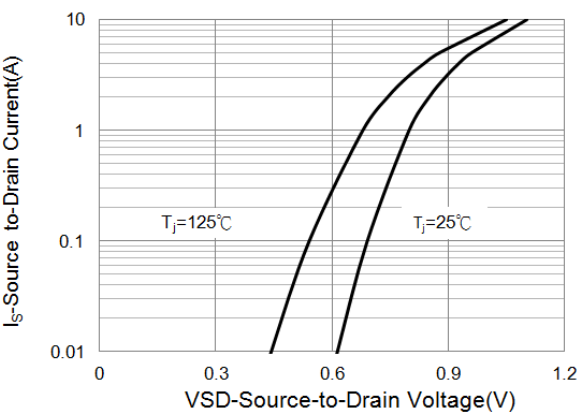


Fig.6 Source-Drain Diode Forward Voltage

PJU2NA60 / PJP2NA60 / PJF2NA60 / PJD2NA60

TYPICAL CHARACTERISTIC CURVES

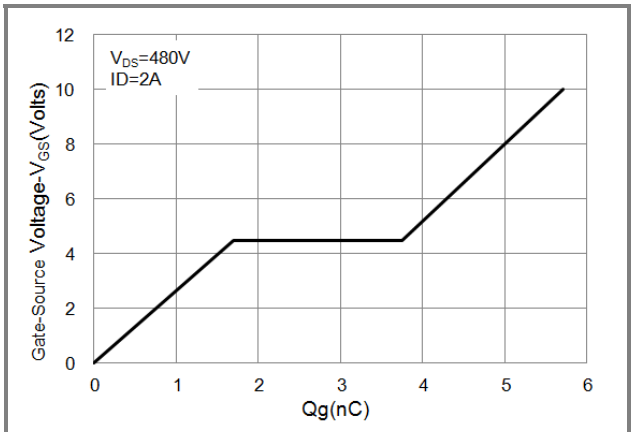


Fig.7 Gate Charge

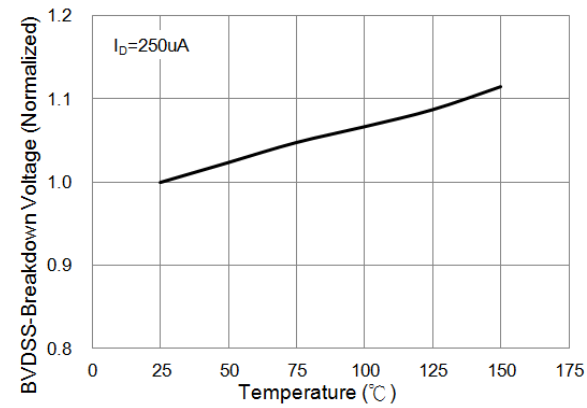


Fig.8 BV_{DSS} vs. Junction Temperature

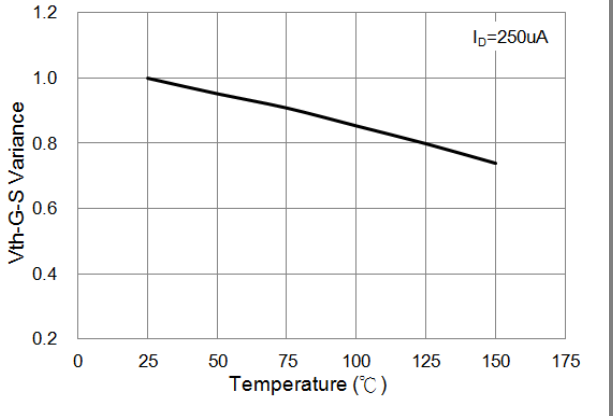


Fig.9 Threshold Voltage Variation with Temperature

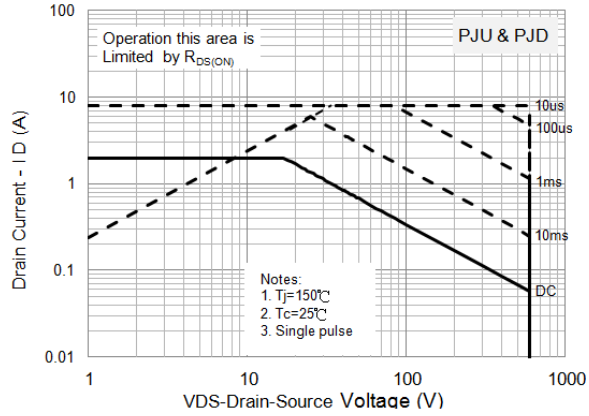


Fig.10 Maximum Safe Operating Area

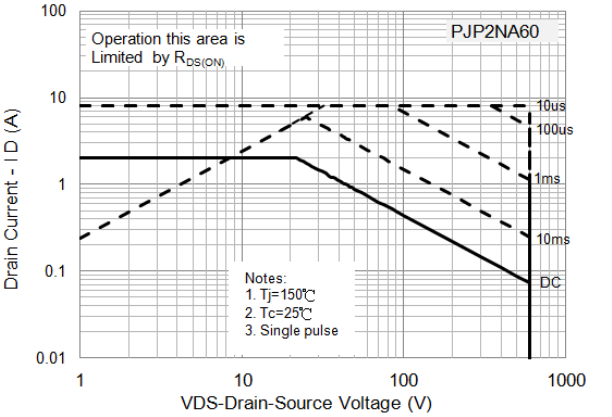


Fig.11 Maximum Safe Operating Area

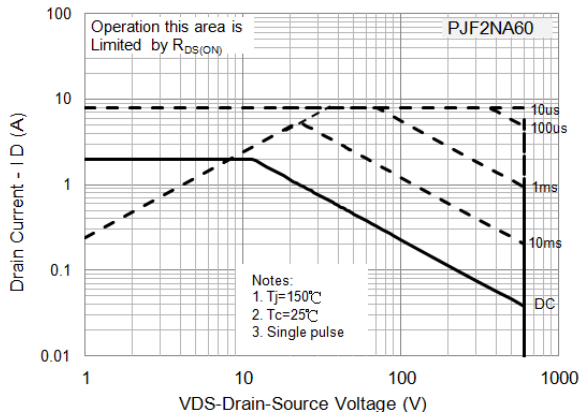


Fig.12 Maximum Safe Operating Area

PJU2NA60 / PJP2NA60 / PJF2NA60 / PJD2NA60

TYPICAL CHARACTERISTIC CURVES

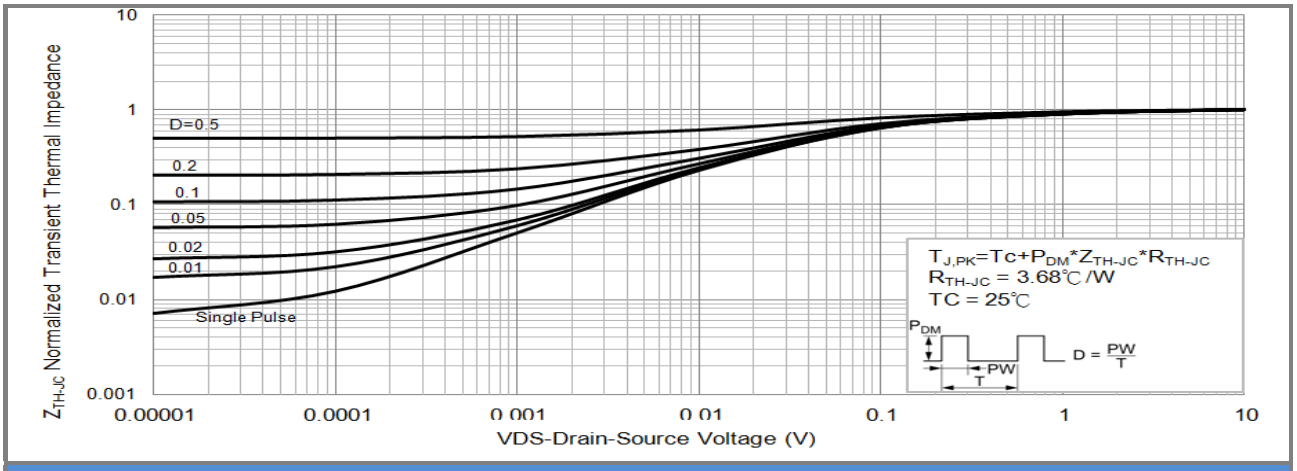


Fig.13 PJU/PJD Normalized Transient Thermal Impedance vs. Pulse Width

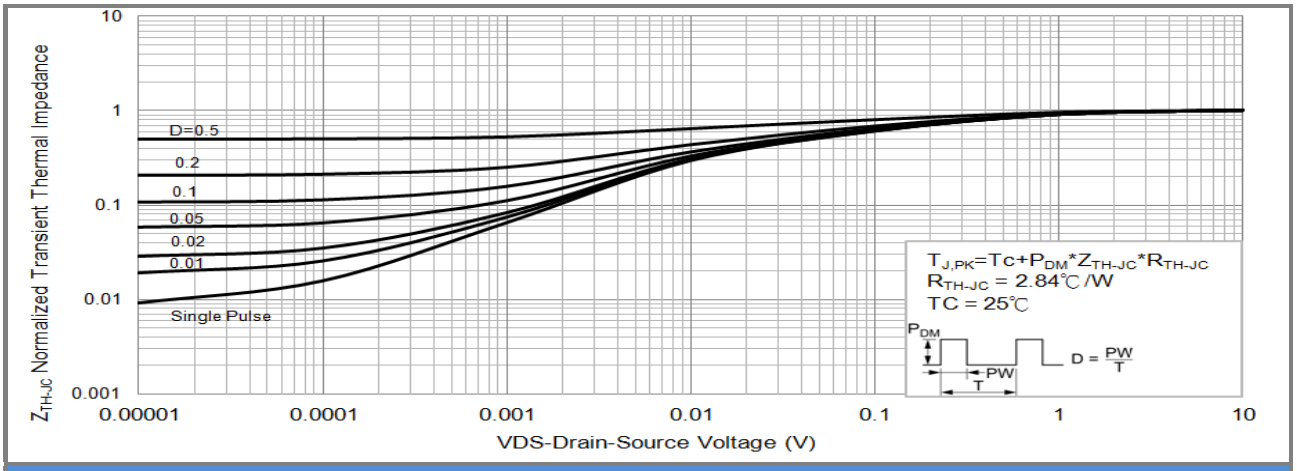


Fig.14 PJP2NA60 Normalized Transient Thermal Impedance vs. Pulse Width

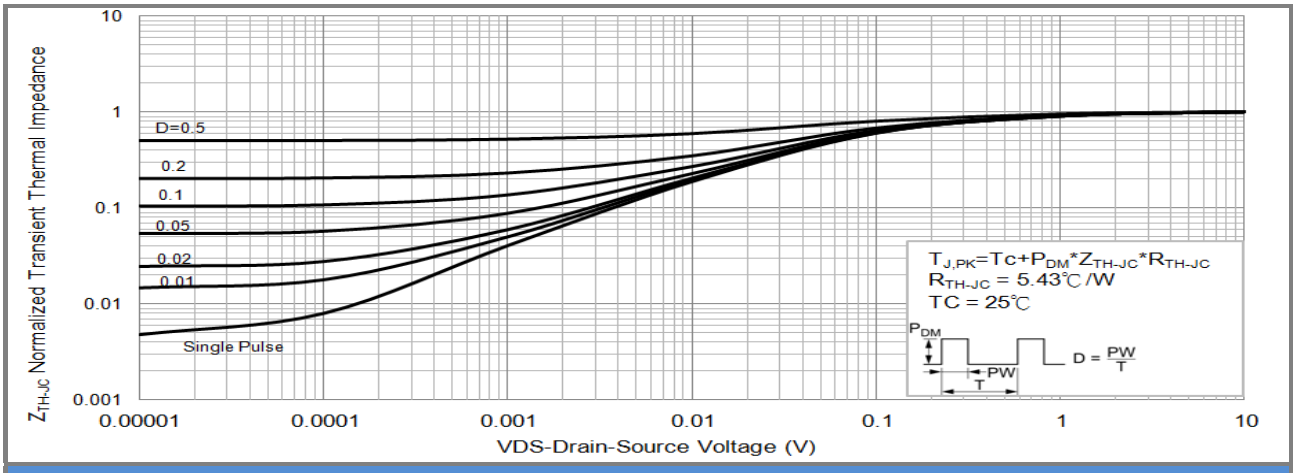


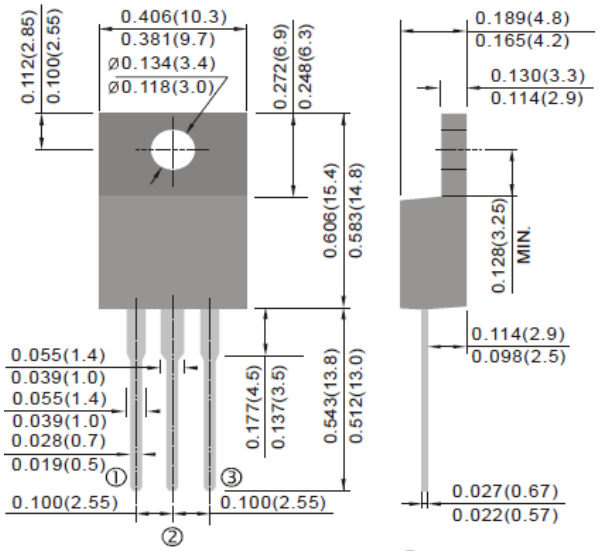
Fig.15 PJF2NA60 Normalized Transient Thermal Impedance vs. Pulse Width

PJU2NA60 / PJP2NA60 / PJF2NA60 / PJD2NA60

Packaging Information .

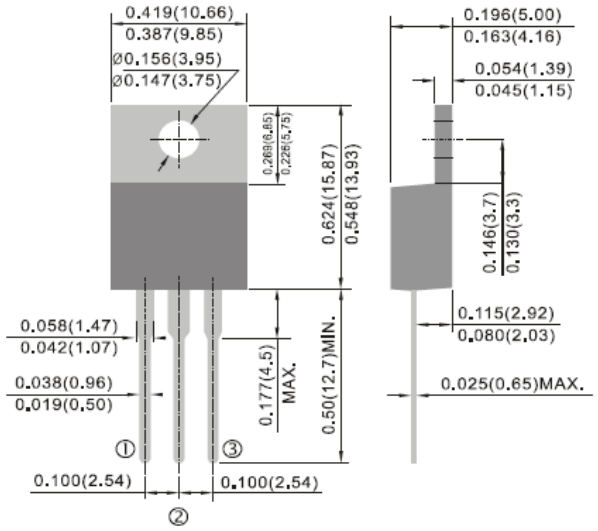
ITO-220AB Dimension

Unit: mm



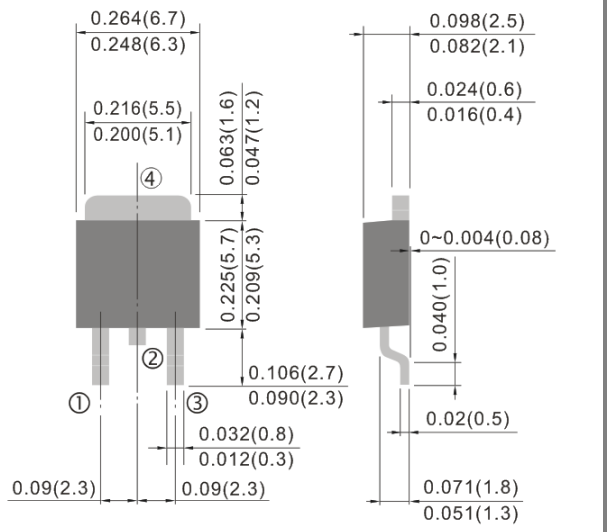
TO-220AB Dimension

Unit: mm



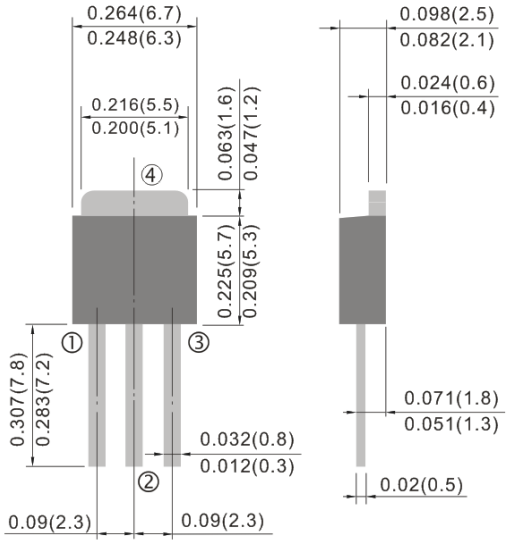
TO-252 Dimension

Unit: mm



TO-251AB Dimension

Unit: mm



PJU2NA60 / PJP2NA60 / PJF2NA60 / PJD2NA60

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJU2NA60_T0_00001	TO-251AB	Tube packing	U2NA60	Halogen free
PJP2NA60_T0_00001	TO-220AB	Tube packing	P2NA60	Halogen free
PJF2NA60_T0_00001	ITO-220AB	Tube packing	F2NA60	Halogen free
PJD2NA60_R2_00001	TO-252	13” tape & reel	D2NA60	Halogen free

PJU2NA60 / PJP2NA60 / PJF2NA60 / PJD2NA60

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