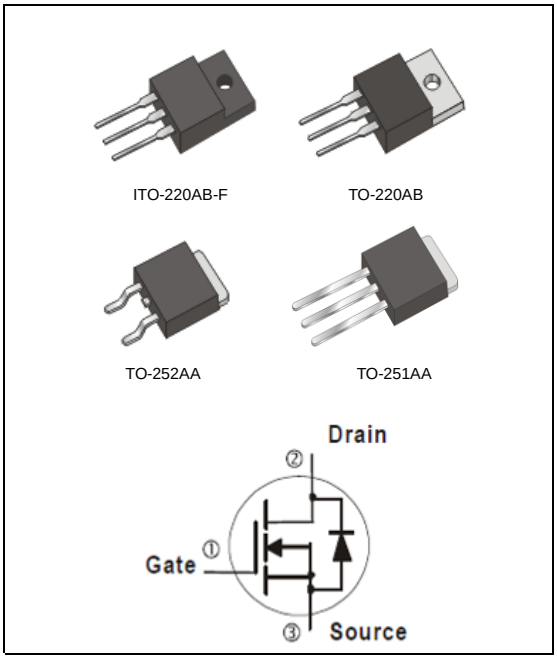
PJU65R660 / PJD65R660 / PJP65R660 / PJF65R660

650V N-Channel MOSFET

Voltage	650 V	Current	7 A



Features

- Super-Junction Technology
- $R_{DS(ON)}$, V_{GS}@10V,I_D@2.0A<0.66Ω
- High switching speed
- 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°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				A
Pulsed Drain Current		I_{DM}	28				A
Single Pulse Avalanche Energy (Note 1)		E_{AS}	100				mJ
Power Dissipation	T_C=25°C	P_D	62	62	27	62	W
	Derate above 25°C		0.5	0.5	0.22	0.5	W/°C
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150				°C
Typical Thermal Resistance							
- Junction to Case		$R_{\theta JC}$	2.0	2.0	4.63	2.0	°C/W
- Junction to Ambient		$R_{\theta JA}$	110	62.5	120	110	

- Limited only By Maximum Junction Temperature

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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	650	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	2	3	4	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=2.0A	-	0.58	0.66	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=1A,V_{GS}=0V	-	0.8	1.4	V
Dynamic(Note 4)						
Total Gate Charge	Q_g	V_{DS}=520V, I_D=7.0A, V_{GS}=10V (Note 2,3)	-	14	-	nC
Gate-Source Charge	Q_{gs}		-	3.7	-	
Gate-Drain Charge	Q_{gd}		-	5.4	-	
Input Capacitance	Ciss	V_{DS}=100V, V_{GS}=0V, f=1.0MHZ	-	577	-	pF
Output Capacitance	Coss		-	25	-	
Reverse Transfer Capacitance	Crss		-	27	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=325V, I_D=7.0A, V_{GS}=10V, R_G=25Ω (Note 2,3)	-	13	-	ns
Turn-On Rise Time	t_r		-	27	-	
Turn-Off Delay Time	$td_{(off)}$		-	35	-	
Turn-Off Fall Time	t_f		-	22	-	
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

NOTES :

1. L=50mH, I_{AS}=2A, V_{DD}=50V, R_G=25 ohm, Starting T_J=25°C
2. Pulse width≤300us, Duty cycle≤2%
3. Essentially independent of operating temperature typical characteristics.
4. Guaranteed by design, not subject to production testing

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TYPICAL CHARACTERISTIC CURVES

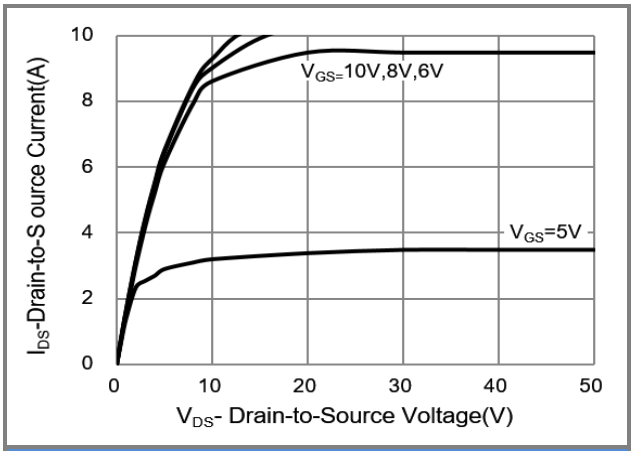

Fig.1 Output Characteristics

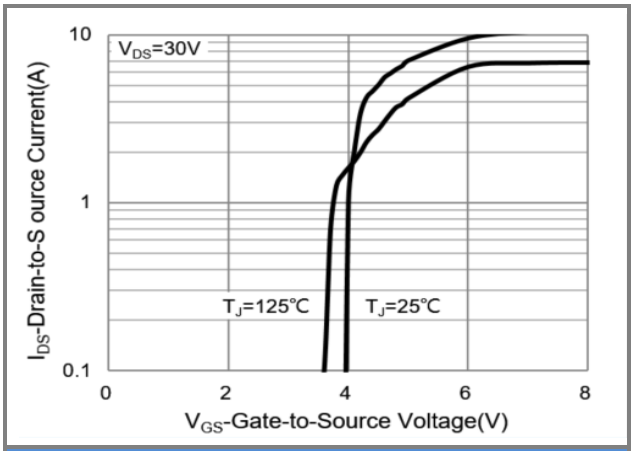

Fig.2 Transfer Characteristics

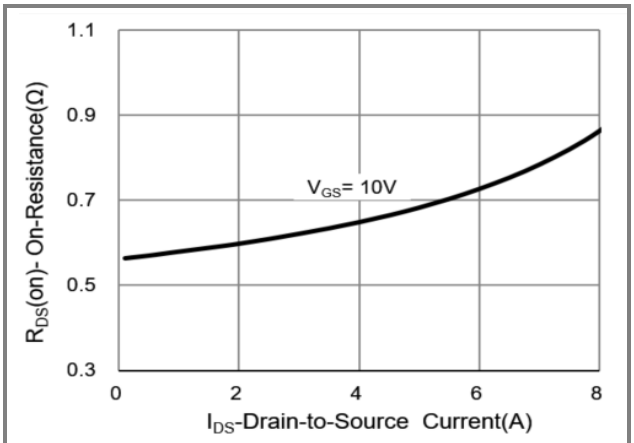

Fig.3 On-Resistance vs. Drain Current

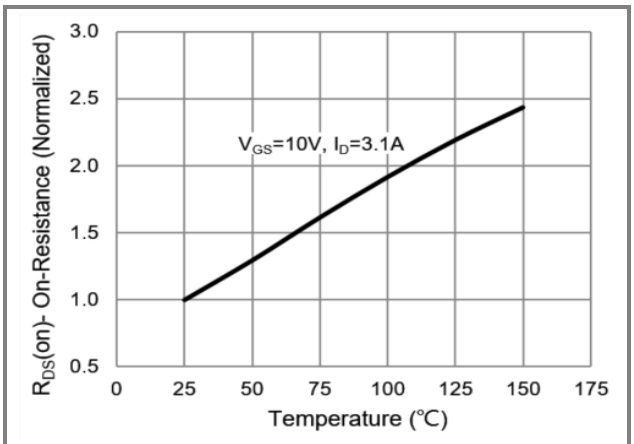

Fig.4 Resistance vs. Junction Temperature

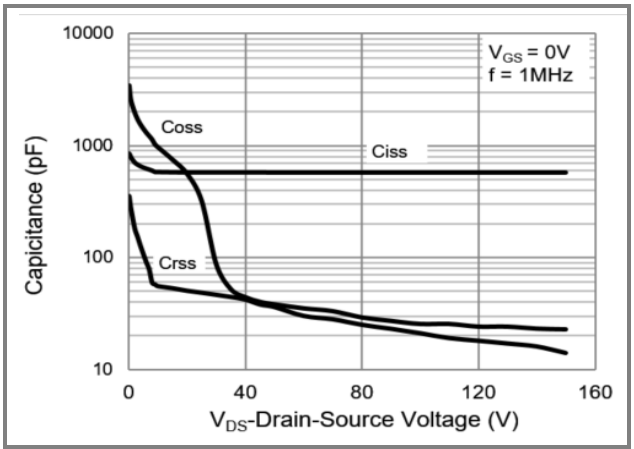

Fig.5 Capacitance vs. Drain-Source Voltage

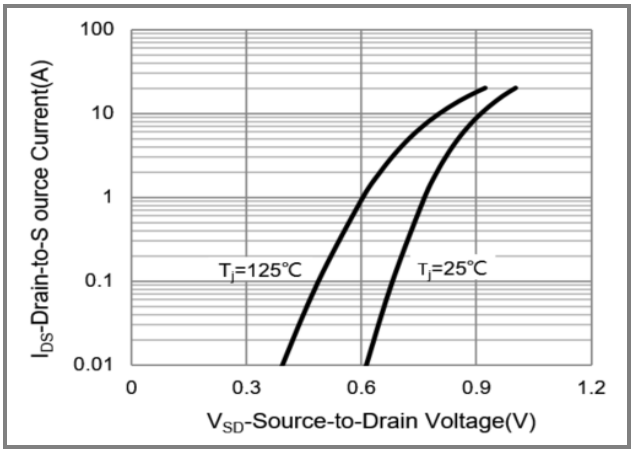

Fig.6 Source-Drain Diode Forward Voltage

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TYPICAL CHARACTERISTIC CURVES

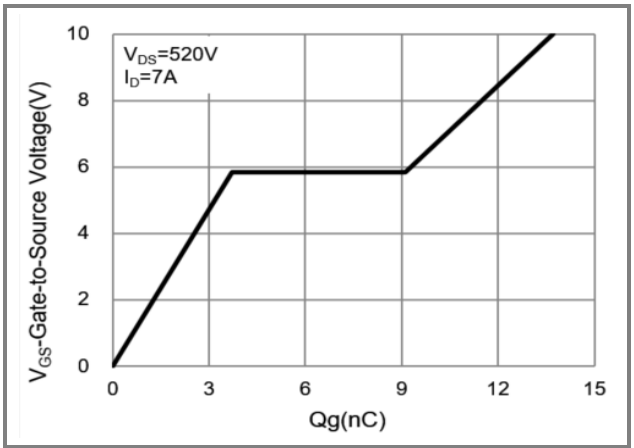


Fig.7 Gate Charge

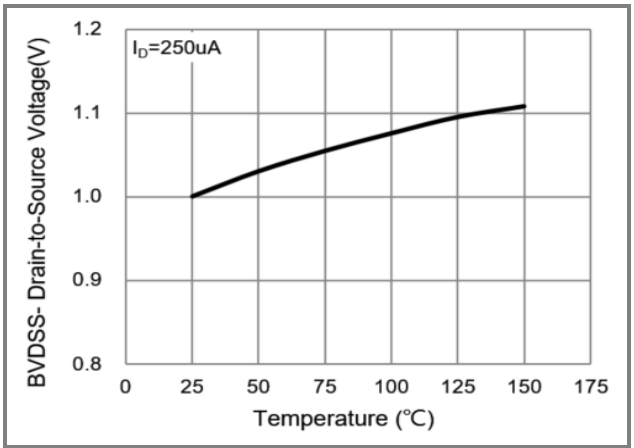


Fig.8 BV_{DSS} vs. Junction Temperature

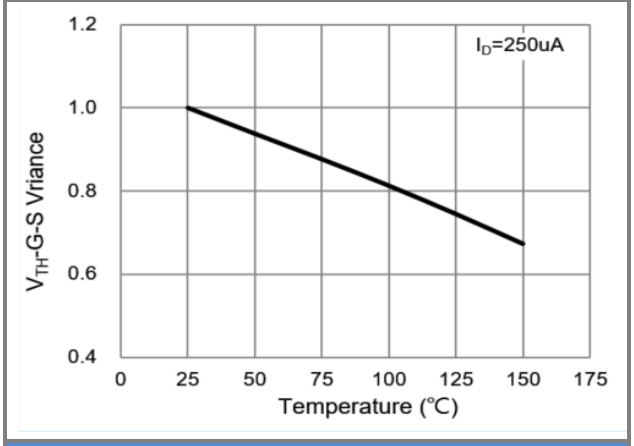


Fig.9 Threshold Voltage Variation with Temperature

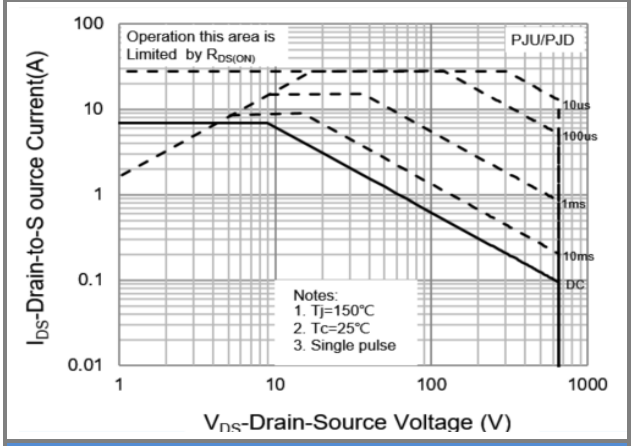


Fig.10 Maximum Safe Operating Area

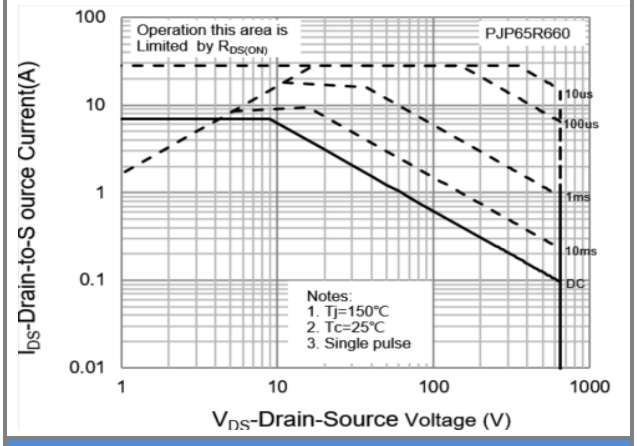


Fig.11 Maximum Safe Operating Area

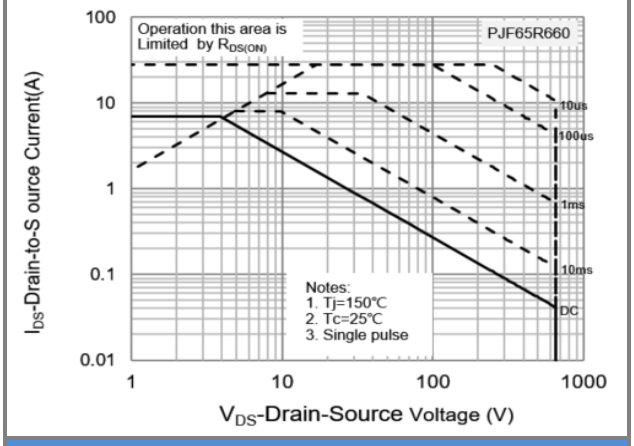


Fig.12 Maximum Safe Operating Area

PJU65R660 / PJD65R660 / PJP65R660 / PJF65R660

TYPICAL CHARACTERISTIC CURVES

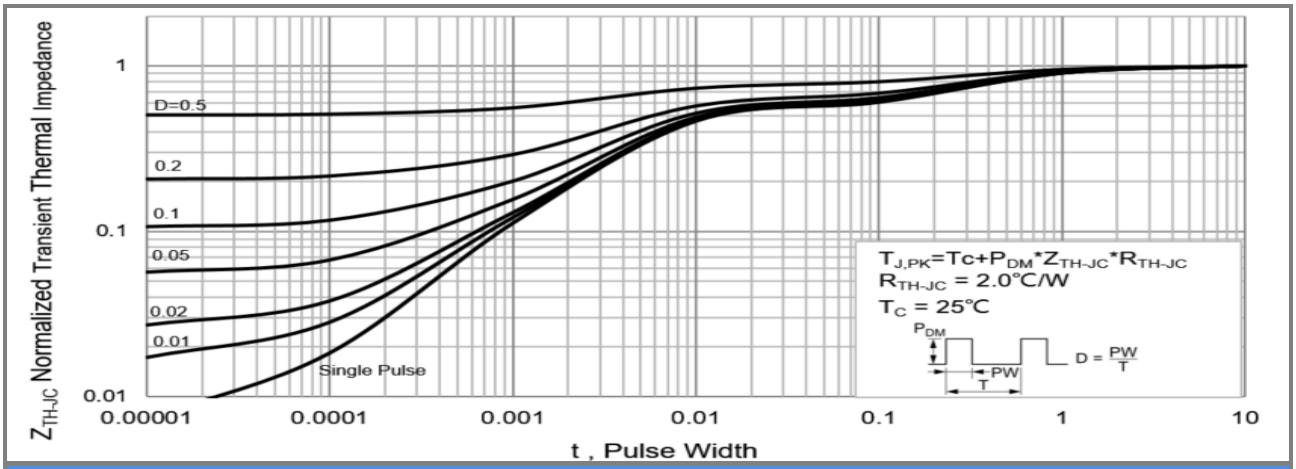


Fig.13 PJU/PJD Normalized Transient Thermal Impedance vs. Pulse Width

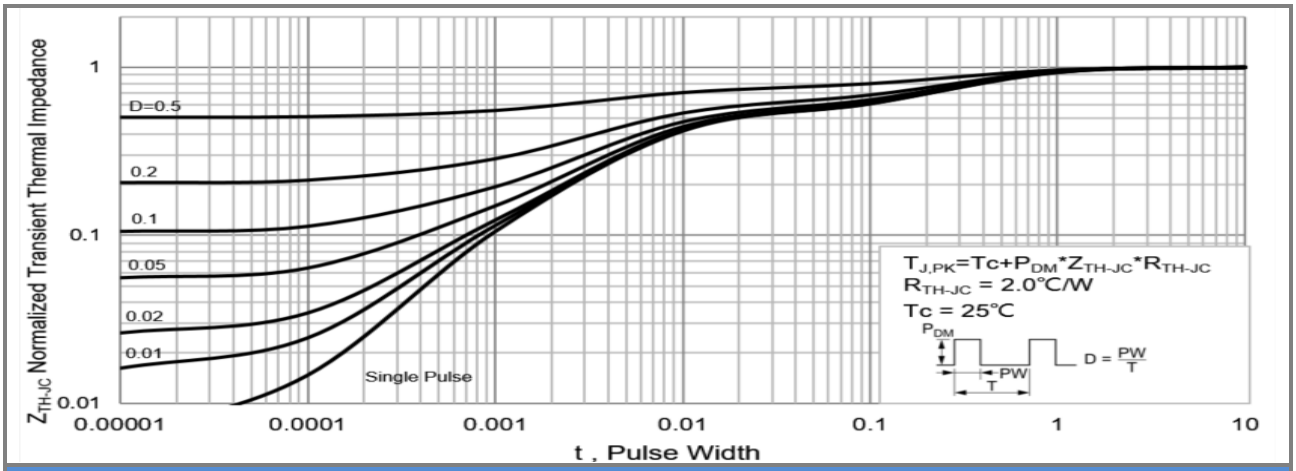


Fig.14 PJP65R660 Normalized Transient Thermal Impedance vs. Pulse Width

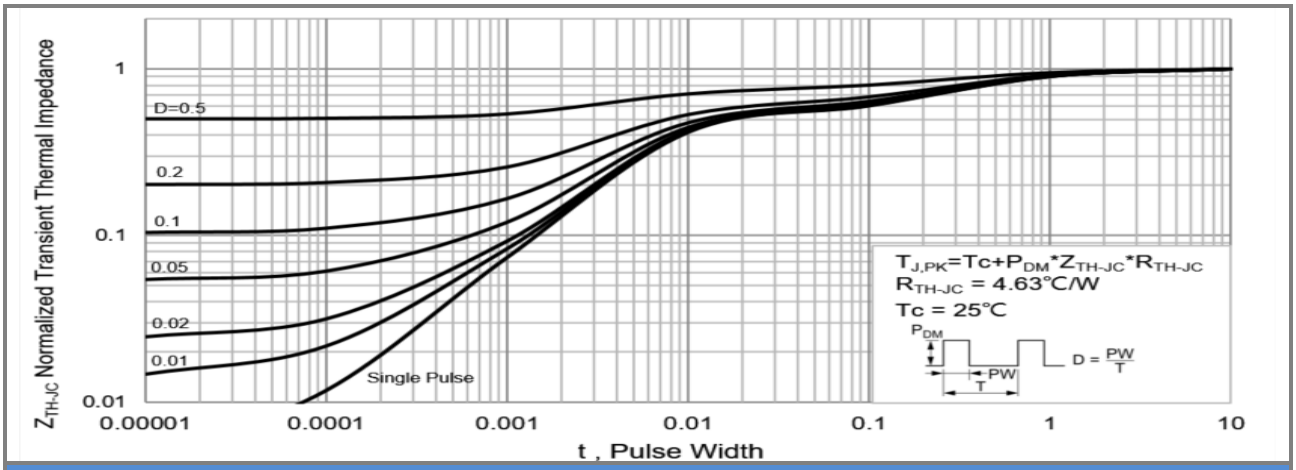


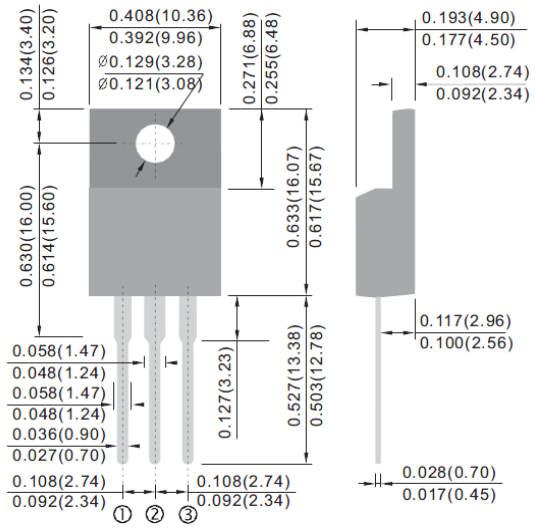
Fig.15 PJF65R660 Normalized Transient Thermal Impedance vs. Pulse Width

PJU65R660 / PJD65R660 / PJP65R660 / PJF65R660

Packaging Information

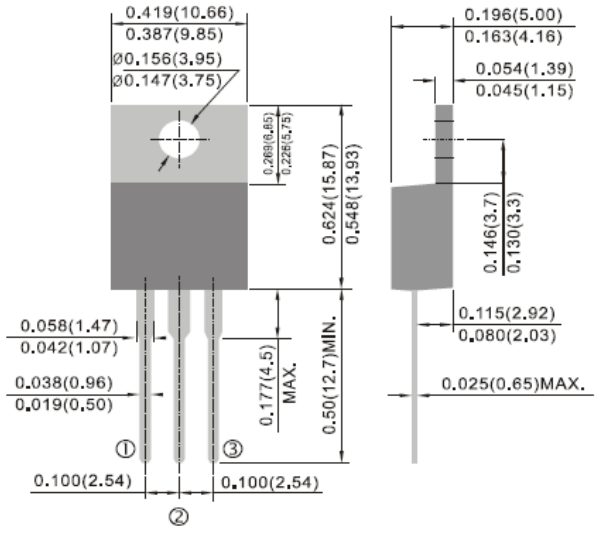
ITO-220AB-F Dimension

Unit: mm



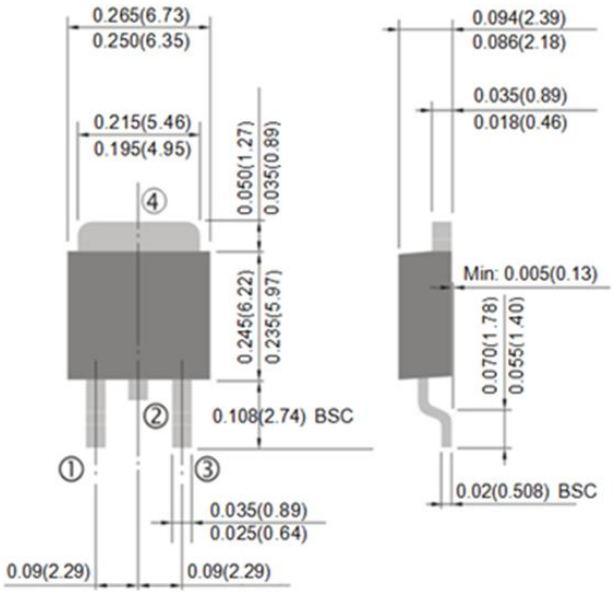
TO-220AB Dimension

Unit: mm



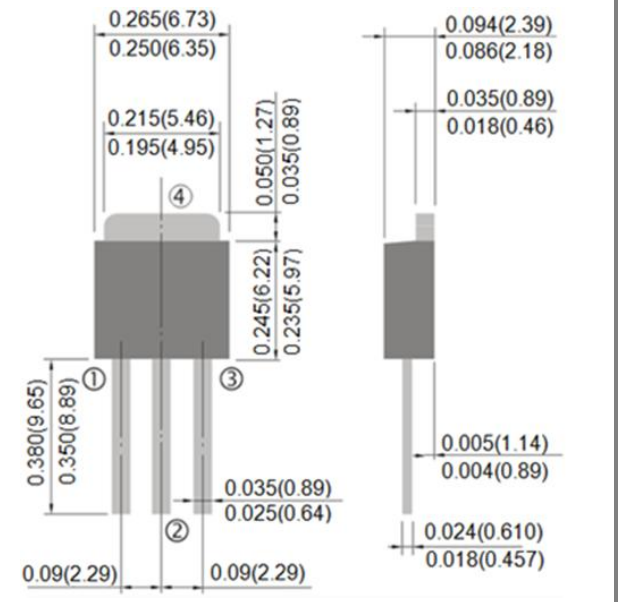
TO-252AA Dimension

Unit: mm



TO-251AA Dimension

Unit: mm



PJU65R660 / PJD65R660 / PJP65R660 / PJF65R660

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJU65R660_T0_00001	TO-251AA	80pcs / Tube	U65R660	Halogen free
PJD65R660_L2_00001	TO-252AA	3,000pcs / 13” reel	D65R660	Halogen free
PJP65R660_T0_00001	TO-220AB	50pcs / Tube	P65R660	Halogen free
PJF65R660_T0_00001	ITO-220AB-F	50pcs / Tube	F65R660	Halogen free

PJU65R660 / PJD65R660 / PJP65R660 / PJF65R660

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