

PJMBZ5V6A-AU ~ PJMBZ33A-AU Series

ESD Protection

Voltage

5.6~33 V

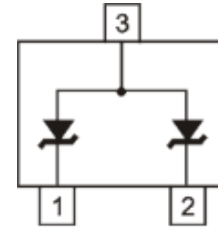
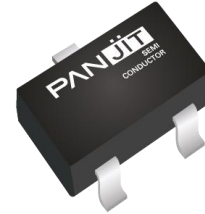
Features

- ISO10605(C=330pF, R=330Ω) :±30kV Air, ±30kV Contact
- HBM $\geq \pm 8\text{KV}$ & CDM $\geq \pm 2\text{KV}$
- 24 or 40W Peak Power Rating @1ms(Unidirectional)
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : SOT-23 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0084 grams

SOT-23



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

PARAMETER	SYMBOL	LIMIT	UNITS
Peak Pulse Power 10/1000us Waveform (5.6V ~ 9.1V)	P _{PP}	24	W
Peak Pulse Power 10/1000us Waveform (12V ~ 33V)	P _{PP}	40	W
ESD IEC61000-4-2(Air)	V _{ESD}	±30	kV
ESD IEC61000-4-2(Contact)		±30	
Typical Thermal Resistance ^(Note 1)	R _{θJA}	350	°C/W
Operating Junction Temperature Range	T _J	-55~150	°C
Storage Temperature Range	T _{STG}	-55~150	°C

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

PJMBZ5V6A-AU						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	3	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 20\text{mA}$, Any I/O pins to GND	5.32	5.6	5.88	V
Reverse Leakage Current	I_R	$V_R = 3\text{V}$, Any I/O pins to GND	-	-	5	μA
Clamping Voltage	V_{CL}	$I_{PP} = 3\text{A}$, $t_P = 10/1000\mu\text{s}$, Any I/O pins to GND	-	-	8	V

PJMBZ6V2A-AU						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	3	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1\text{mA}$, Any I/O pins to GND	5.89	6.2	6.51	V
Reverse Leakage Current	I_R	$V_R = 3\text{V}$, Any I/O pins to GND	-	-	0.5	μA
Clamping Voltage	V_{CL}	$I_{PP} = 2.76\text{A}$, $t_P = 10/1000\mu\text{s}$, Any I/O pins to GND	-	-	8.7	V

PJMBZ6V8A-AU						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	4.5	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1\text{mA}$, Any I/O pins to GND	6.46	6.8	7.14	V
Reverse Leakage Current	I_R	$V_R = 4.5\text{V}$, Any I/O pins to GND	-	-	0.5	μA
Clamping Voltage	V_{CL}	$I_{PP} = 2.5\text{A}$, $t_P = 10/1000\mu\text{s}$, Any I/O pins to GND	-	-	9.6	V

PJMBZ9V1A-AU						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	6	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1\text{mA}$, Any I/O pins to GND	8.65	9.1	9.56	V
Reverse Leakage Current	I_R	$V_R = 6\text{V}$, Any I/O pins to GND	-	-	0.3	μA
Clamping Voltage	V_{CL}	$I_{PP} = 1.7\text{A}$, $t_P = 10/1000\mu\text{s}$, Any I/O pins to GND	-	-	14	V

PJMBZ5V6A-AU ~ PJMBZ33A-AU Series

PJMBZ12A-AU

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	8.5	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1mA$, Any I/O pins to GND	11.4	12	12.6	V
Reverse Leakage Current	I_R	$V_R = 8.5V$, Any I/O pins to GND	-	-	0.2	μA
Clamping Voltage	V_{CL}	$I_{PP} = 2.35A$, $t_P = 10/1000\mu s$, Any I/O pins to GND	-	-	17	V

PJMBZ15A-AU

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	12	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1mA$, Any I/O pins to GND	14.25	15	15.75	V
Reverse Leakage Current	I_R	$V_R = 12V$, Any I/O pins to GND	-	-	0.05	μA
Clamping Voltage	V_{CL}	$I_{PP} = 1.9A$, $t_P = 10/1000\mu s$, Any I/O pins to GND	-	-	21	V

PJMBZ18A-AU

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	14.5	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1mA$, Any I/O pins to GND	17.1	18	18.9	V
Reverse Leakage Current	I_R	$V_R = 14.5V$, Any I/O pins to GND	-	-	0.05	μA
Clamping Voltage	V_{CL}	$I_{PP} = 1.6A$, $t_P = 10/1000\mu s$, Any I/O pins to GND	-	-	25	V

PJMBZ20A-AU

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	17	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1mA$, Any I/O pins to GND	19	20	21	V
Reverse Leakage Current	I_R	$V_R = 17V$, Any I/O pins to GND	-	-	0.05	μA
Clamping Voltage	V_{CL}	$I_{PP} = 1.4A$, $t_P = 10/1000\mu s$, Any I/O pins to GND	-	-	28	V

PJMBZ5V6A-AU ~ PJMBZ33A-AU Series

PJMBZ27A-AU						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	22	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1mA$, Any I/O pins to GND	25.65	27	28.35	V
Reverse Leakage Current	I_R	$V_R = 22V$, Any I/O pins to GND	-	-	0.05	μA
Clamping Voltage	V_{CL}	$I_{PP} = 1A$, $t_P = 10/1000\mu s$, Any I/O pins to GND	-	-	40	V

PJMBZ33A-AU						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	26	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1mA$, Any I/O pins to GND	31.35	33	34.65	V
Reverse Leakage Current	I_R	$V_R = 26V$, Any I/O pins to GND	-	-	0.05	μA
Clamping Voltage	V_{CL}	$I_{PP} = 0.87A$, $t_P = 10/1000\mu s$, Any I/O pins to GND	-	-	46	V

NOTES :

1. Mounted on a FR4 PCB, single-sided copper, standard footprint.
2. A transient suppressor is selected according to the working peak reverse voltage(V_{RWM}), which should be equal to or greater than the DC or continuous peak operation voltage level.

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TYPICAL CHARACTERISTIC CURVES

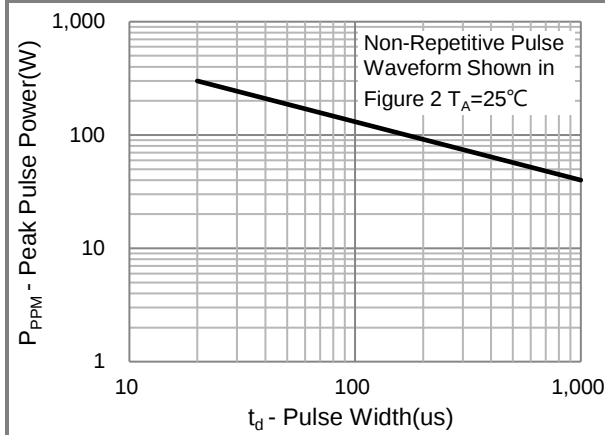


Fig.1 Pulse Power Rating Curve

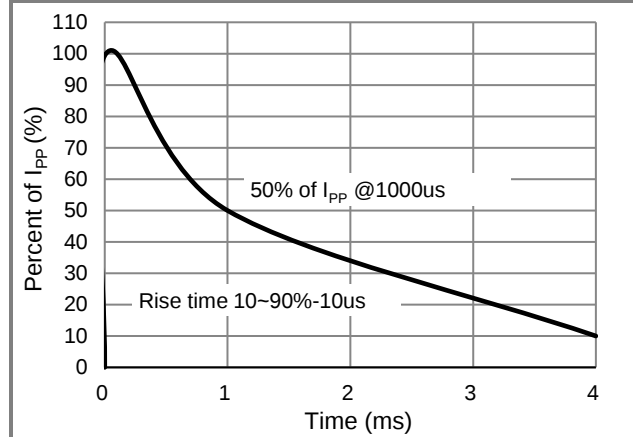


Fig.2 Pulse Waveform

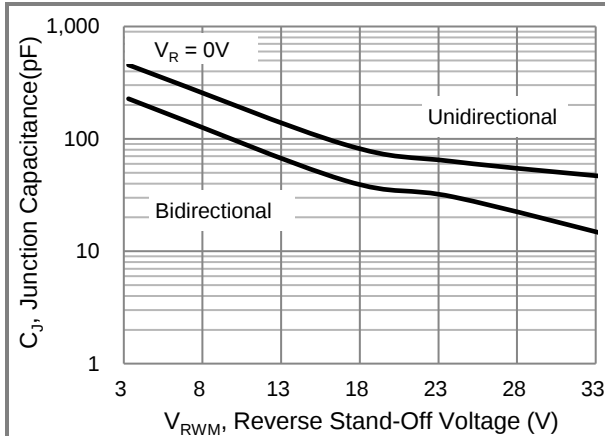


Fig.3 Typical Junction Capacitance

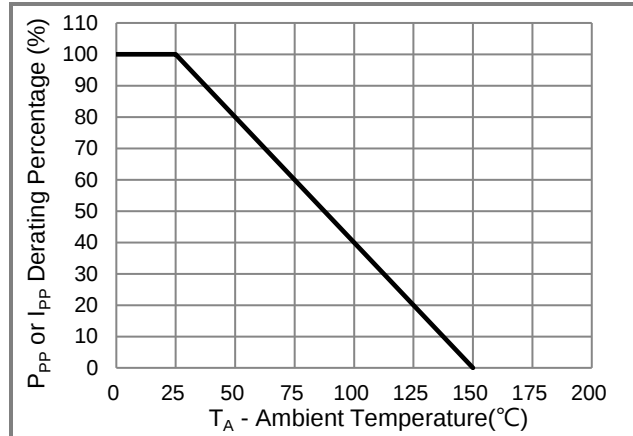


Fig.4 Derating Curve

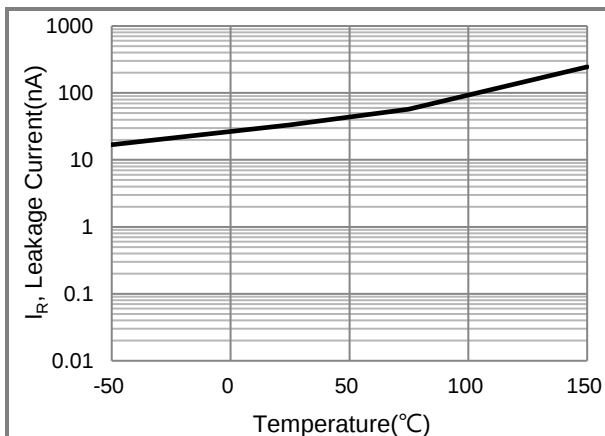


Fig.5 Typical Reverse Characteristics

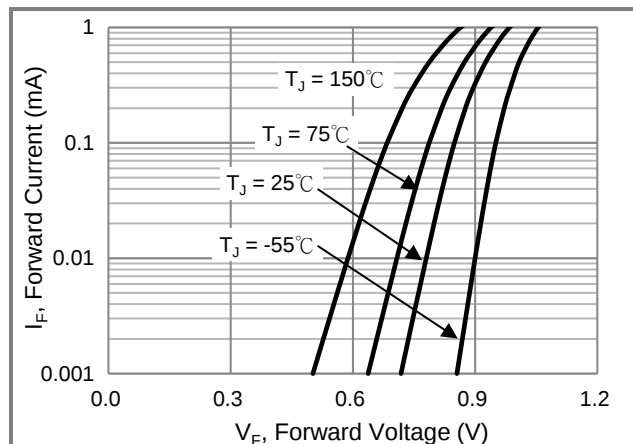


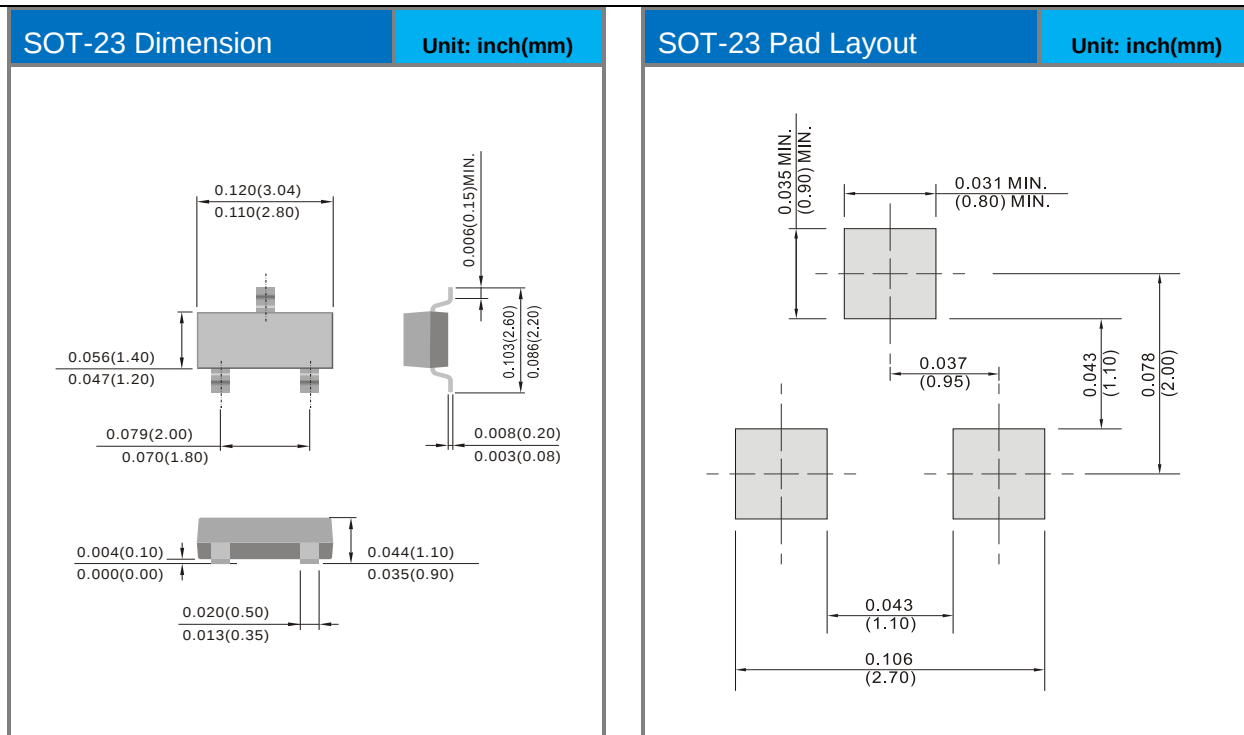
Fig.6 Typical Forward Characteristics

PJMBZ5V6A-AU ~ PJMBZ33A-AU Series

Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PJMBZ5V6A-AU	SOT-23	3K pcs / 7" reel	Z2C
PJMBZ6V2A-AU	SOT-23	3K pcs / 7" reel	Z2D
PJMBZ6V8A-AU	SOT-23	3K pcs / 7" reel	Z2E
PJMBZ9V1A-AU	SOT-23	3K pcs / 7" reel	Z2F
PJMBZ12A-AU	SOT-23	3K pcs / 7" reel	Z2G
PJMBZ15A-AU	SOT-23	3K pcs / 7" reel	Z2H
PJMBZ18A-AU	SOT-23	3K pcs / 7" reel	Z2J
PJMBZ20A-AU	SOT-23	3K pcs / 7" reel	Z2A
PJMBZ27A-AU	SOT-23	3K pcs / 7" reel	Z2K
PJMBZ33A-AU	SOT-23	3K pcs / 7" reel	Z2L

Packaging Information & Mounting Pad Layout



PJMBZ5V6A-AU ~ PJMBZ33A-AU Series

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[1.5SMCJ36A_R1_10001](#) [1.5SMCJ36CA_R1_00001](#) [1.5SMCJ40A_R1_00001](#) [1.5SMCJ48A_R1_00001](#) [1.5SMCJ51CAS](#)
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