

PEC3202ES-AU ~ PEC3205ES-AU Series

ESD Protection

Voltage

2.5~5 V

Features

- ISO10605(C=330pF, R=330Ω) : -±30kV Air, ±30kV Contact
- HBM $\geq \pm 8\text{KV}$ & CDM $\geq \pm 2\text{KV}$
- IEC61000-4-5(Lightning) : 5~10A(8/20uS)
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : SOD-523 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0014 grams

SOD-523



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

PARAMETER	SYMBOL	LIMIT	UNITS
ESD IEC61000-4-2(Air)	V _{ESD}	±30	kV
ESD IEC61000-4-2(Contact)		±30	
Typical Thermal Resistance ^(Note 1)	R _{θJA}	710	°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)

PEC3202ES-AU						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	2.5	V
Reverse Breakdown Voltage	V_{BR}	$I_{BR} = 50\text{ mA}$	2.6	-	4	V
Reverse Leakage Current	I_R	$V_R = 2.5\text{ V}$	-	-	0.5	μA
Clamping Voltage	V_{CL}	$I_{PP} = 1\text{ A}$, $t_P = 8/20\text{ }\mu\text{s}$	-	-	4.5	V
		$I_{PP} = 10\text{ A}$, $t_P = 8/20\text{ }\mu\text{s}$	-	-	9	
Clamping Voltage TLP ^(Note 3)	V_{CL}	$I_{PP} = 8\text{ A}$, $t_P = 100\text{ ns}$,	-	7.16	-	V
		$I_{PP} = 16\text{ A}$, $t_P = 100\text{ ns}$,	-	9.3	-	
Dynamic Resistance	R_{DYN}	$t_P = 100\text{ ns}$	-	0.27	-	Ω
Off State Junction Capacitance	C_J	0Vdc Bias $f = 1\text{ MHz}$	-	-	20	pF

PEC3203ES-AU						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	3.3	V
Reverse Breakdown Voltage	V_{BR}	$I_{BR} = 50\text{ mA}$	3.5	-	4.5	V
Reverse Leakage Current	I_R	$V_R = 3.3\text{ V}$	-	-	0.5	μA
Clamping Voltage	V_{CL}	$I_{PP} = 1\text{ A}$, $t_P = 8/20\text{ }\mu\text{s}$	-	-	5.5	V
		$I_{PP} = 10\text{ A}$, $t_P = 8/20\text{ }\mu\text{s}$	-	-	9	
Clamping Voltage TLP ^(Note 3)	V_{CL}	$I_{PP} = 8\text{ A}$, $t_P = 100\text{ ns}$,	-	7.2	-	V
		$I_{PP} = 16\text{ A}$, $t_P = 100\text{ ns}$,	-	9.2	-	
Dynamic Resistance	R_{DYN}	$t_P = 100\text{ ns}$	-	0.25	-	Ω
Off State Junction Capacitance	C_J	0Vdc Bias $f = 1\text{ MHz}$	-	-	20	pF

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PEC3205ES-AU						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	5	V
Reverse Breakdown Voltage	V_{BR}	$I_{SB} = 50 \text{ mA}$	5.5	-	8	V
Reverse Leakage Current	I_R	$V_R = 5 \text{ V}$	-	-	0.5	μA
Clamping Voltage	V_{CL}	$I_{PP} = 1 \text{ A}, t_P = 8/20 \text{ }\mu\text{s}$	-	-	10	V
		$I_{PP} = 5 \text{ A}, t_P = 8/20 \text{ }\mu\text{s}$	-	-	13	
Clamping Voltage TLP ^(Note 3)	V_{CL}	$I_{PP} = 8 \text{ A}, t_P = 100 \text{ ns},$	-	11.8	-	V
		$I_{PP} = 16 \text{ A}, t_P = 100 \text{ ns},$	-	15.9	-	
Dynamic Resistance	R_{DYN}	$t_P = 100 \text{ ns}$	-	0.51	-	Ω
Off State Junction Capacitance	C_J	0Vdc Bias $f = 1 \text{ MHz}$	-	-	20	pF

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.
3. Testing using Transmission Line Pulse (TLP) conditions: $Z_0 = 50 \text{ }\Omega$, $t_P = 100 \text{ ns}$.

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TYPICAL CHARACTERISTIC CURVES

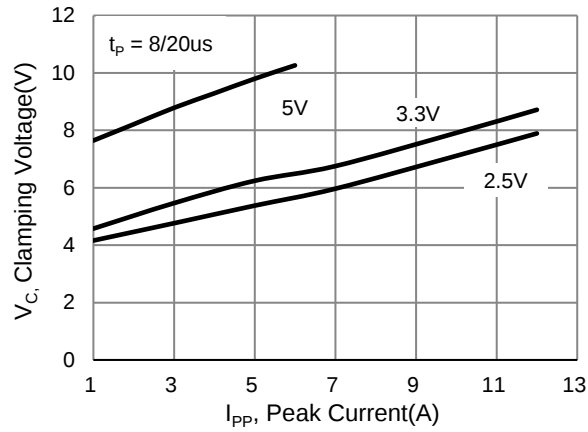


Fig.1 Typical Peak Clamping Voltage

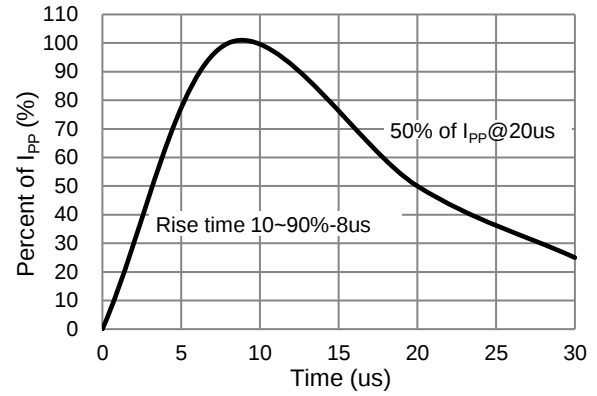


Fig.2 Pulse Waveform

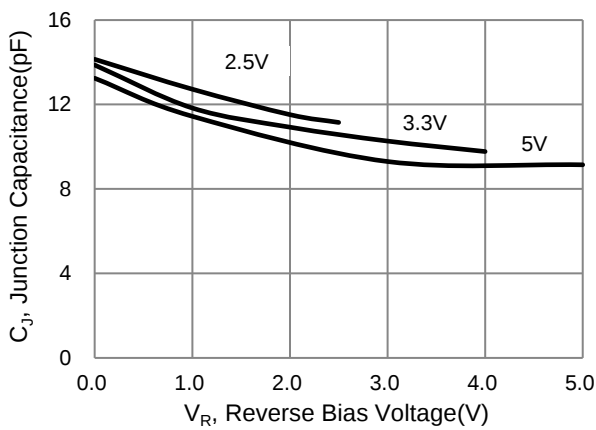


Fig.3 Typical Junction Capacitance

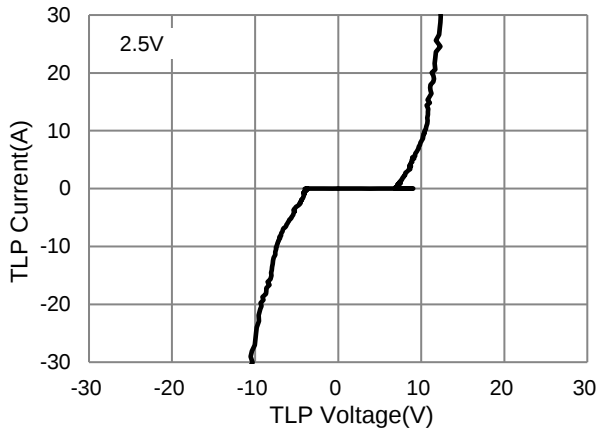


Fig.4 TLP Measurement

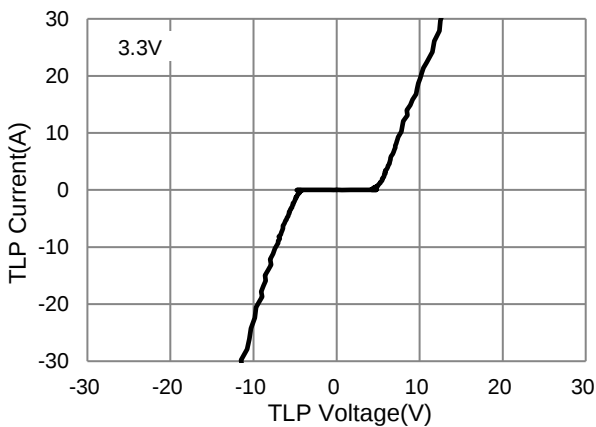


Fig.5 TLP Measurement

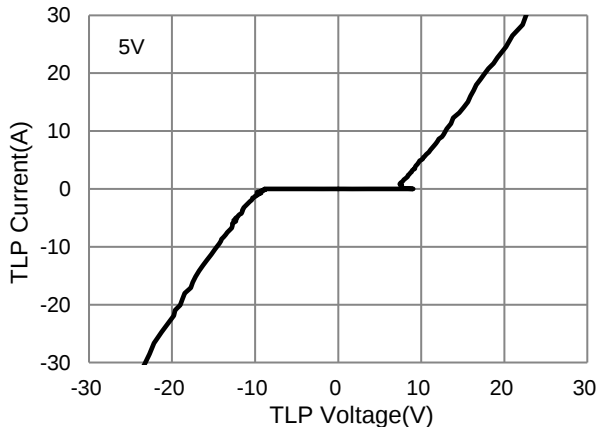


Fig.6 TLP Measurement

PEC3202ES-AU ~ PEC3205ES-AU Series

TYPICAL CHARACTERISTIC CURVES

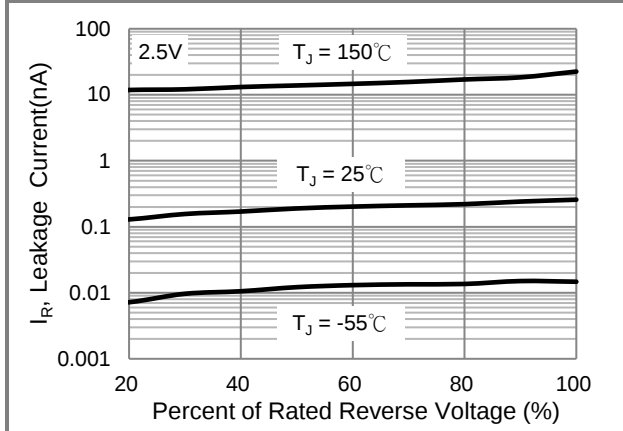


Fig.7 Typical Reverse Characteristics

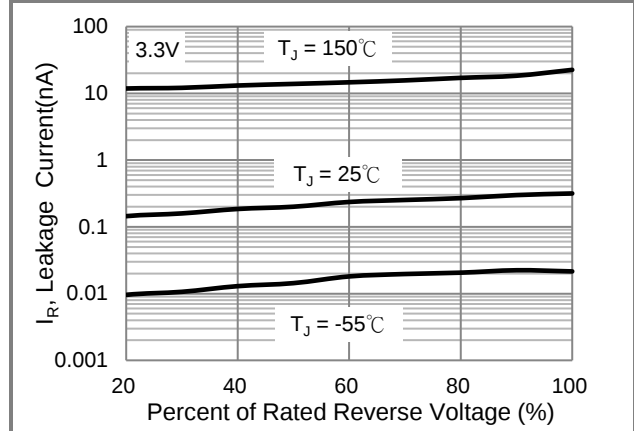


Fig.8 Typical Reverse Characteristics

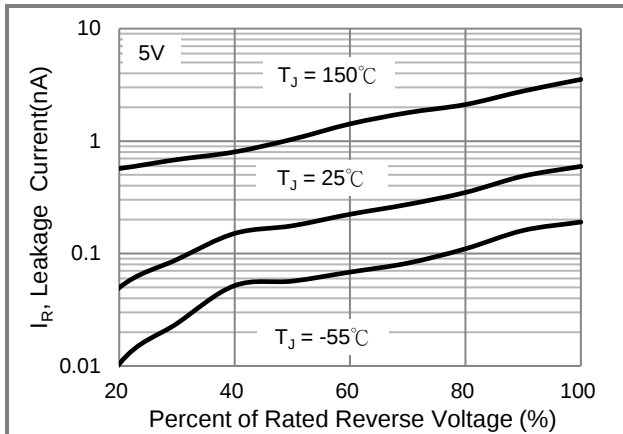


Fig.9 Typical Reverse Characteristics

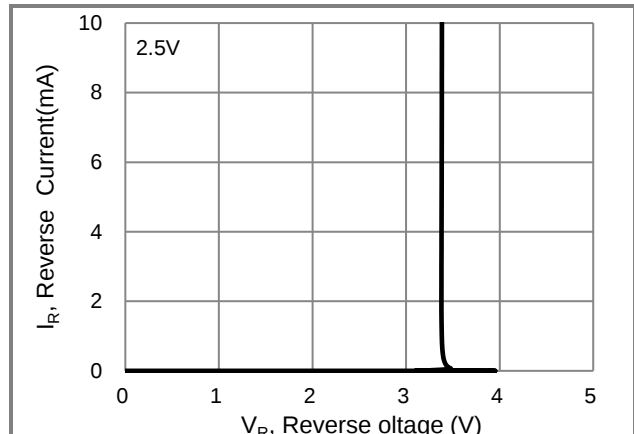


Fig.10 Typical Reverse Characteristics

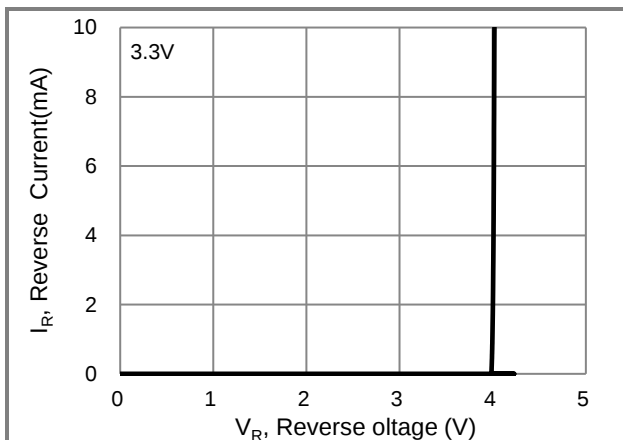


Fig.11 Typical Reverse Characteristics

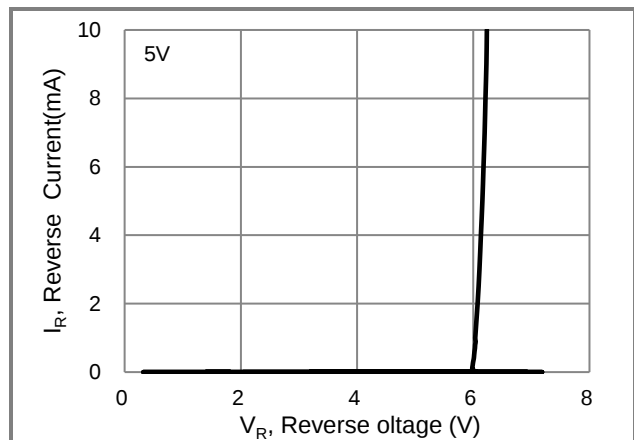


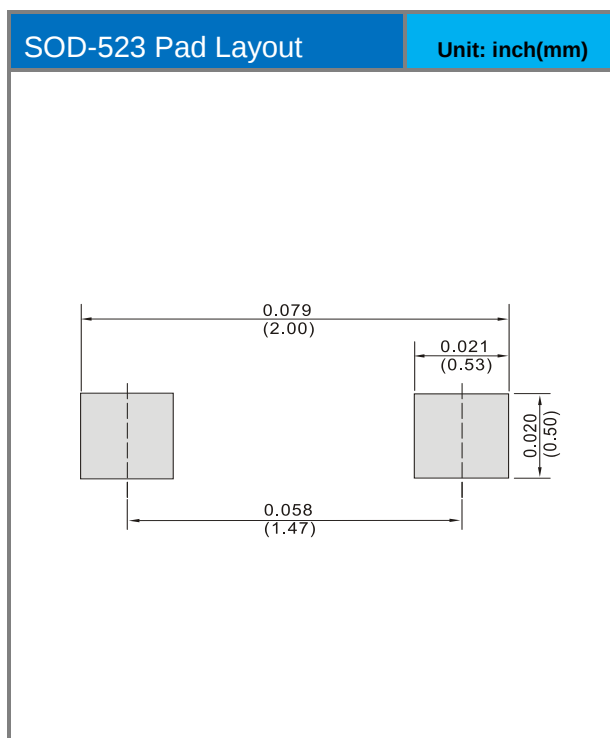
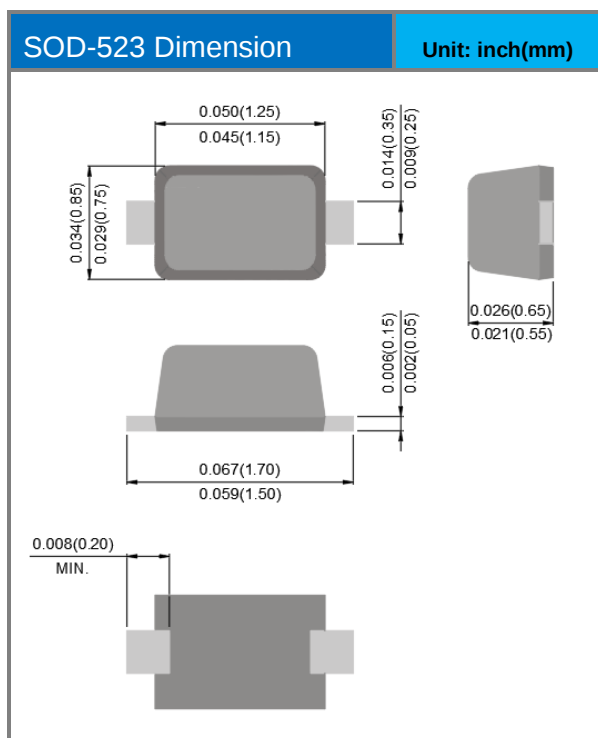
Fig.12 Typical Reverse Characteristics

PEC3202ES-AU ~ PEC3205ES-AU Series

Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PEC3202ES-AU	SOD-523	5K pcs / 7" reel	BA
PEC3203ES-AU	SOD-523	5K pcs / 7" reel	BB
PEC3205ES-AU	SOD-523	5K pcs / 7" reel	BC

Packaging Information & Mounting Pad Layout



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