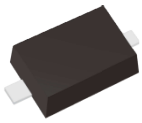
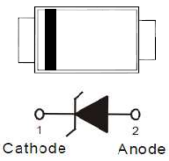
PE4205CS ~ PE4236CS Series

Hi-Surge ESD Protection

Voltage **5~36 V**

SOD-323





Features

- IEC61000-4-2(ESD): ± 15 kV Air, ± 8 kV Contact Compliance with the capability up to ± 30 kV
- IEC61000-4-4(EFT): 80 A (5/50 ns)
- IEC61000-4-5(Lightning): 25 A~4 A (8/20 uS)
- Low clamping voltage
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case: Molded plastic, SOD-323
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00014 ounces, 0.0041 grams

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

PARAMETER	SYMBOL	LIMIT	UNITS
ESD IEC61000-4-2(Air) ESD IEC61000-4-2(Contact)	V_{ESD}	±30 ±30	kV
Operating Junction Temperature Range	T_J	-55~150	°C
Storage Temperature Range	T_{STG}	-55~150	°C

PE4205CS ~ PE4236CS Series

Electrical Characteristics (T_A = 25 °C unless otherwise noted)

PE4205CS						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage	V_{RWM} (1)	-	-	-	5	V
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1 mA	6	-	7.5	V
Reverse leakage current	I_R	V_R = 5 V	-	-	1	μA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 μs	-	-	8	V
		I_{PP} = 25 A, t_P = 8/20 μs	-	-	13.5	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	250	pF

PE4207CS						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage	V_{RWM} (1)	-	-	-	7	V
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1 mA	7.5	-	9.5	V
Reverse leakage current	I_R	V_R = 7 V	-	-	1	μA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 μs	-	-	10	V
		I_{PP} = 20 A, t_P = 8/20 μs	-	-	15	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	200	pF

PE4209CS						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage	V_{RWM} (1)	-	-	-	9	V
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1 mA	9.5	-	12	V
Reverse leakage current	I_R	V_R = 9 V	-	-	1	μA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 μs	-	-	13	V
		I_{PP} = 15 A, t_P = 8/20 μs	-	-	20	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	180	pF

PE4205CS ~ PE4236CS Series

PE4212CS						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage	V_{RWM} (1)	-	-	-	12	V
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1 mA	12.5	-	15.5	V
Reverse leakage current	I_R	V_R = 12 V	-	-	0.5	μA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 μs	-	-	17	V
		I_{PP} = 12 A, t_P = 8/20 μs	-	-	24	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	120	pF

PE4215CS						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage	V_{RWM} (1)	-	-	-	15	V
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1 mA	15.5	-	20	V
Reverse leakage current	I_R	V_R = 15 V	-	-	0.5	μA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 μs	-	-	22	V
		I_{PP} = 9 A, t_P = 8/20 μs	-	-	32	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	100	pF

PE4218CS						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage	V_{RWM} (1)	-	-	-	18	V
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1 mA	20	-	24	V
Reverse leakage current	I_R	V_R = 18 V	-	-	0.1	μA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 μs	-	-	27	V
		I_{PP} = 9 A, t_P = 8/20 μs	-	-	34	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	90	pF

PE4205CS ~ PE4236CS Series

PE4220CS						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage	V_{RWM} (1)	-	-	-	20	V
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1 mA	20.5	-	26	V
Reverse leakage current	I_R	V_R = 20 V	-	-	0.1	μA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 μs	-	-	28.5	V
		I_{PP} = 8 A, t_P = 8/20 μs	-	-	35	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	60	pF

PE4224CS						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage	V_{RWM} (1)	-	-	-	24	V
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1 mA	24.5	-	31	V
Reverse leakage current	I_R	V_R = 24 V	-	-	0.1	μA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 μs	-	-	35	V
		I_{PP} = 6 A, t_P = 8/20 μs	-	-	46	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	55	pF

PE4236CS						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage	V_{RWM} (1)	-	-	-	36	V
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1 mA	36.5	-	46.5	V
Reverse leakage current	I_R	V_R = 36 V	-	-	0.1	μA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 μs	-	-	53	V
		I_{PP} = 4 A, t_P = 8/20 μs	-	-	67	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	40	pF

NOTES:

1. 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.

PE4205CS ~ PE4236CS Series

TYPICAL CHARACTERISTIC CURVES

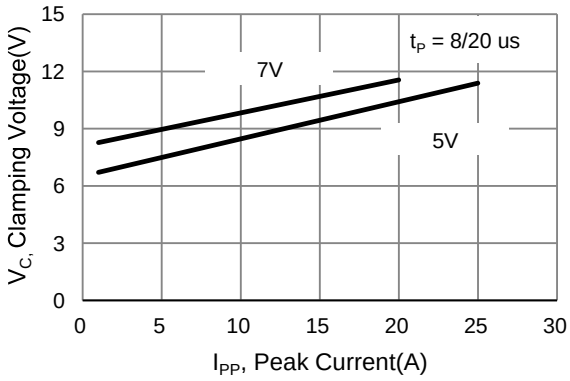


Fig.1 Typical Peak Clamping Voltage

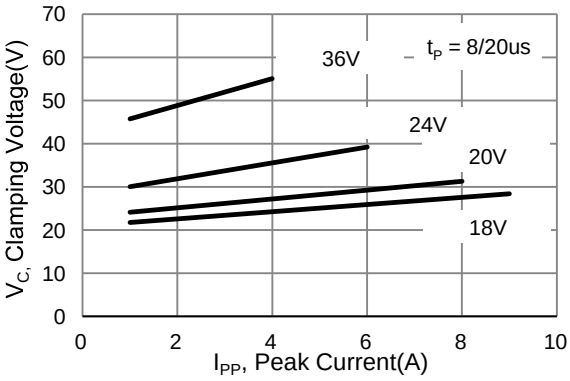


Fig.2 Pulse Waveform

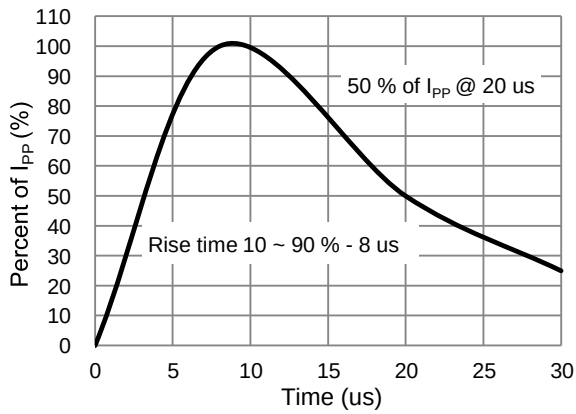


Fig.3 Typical Junction Capacitance

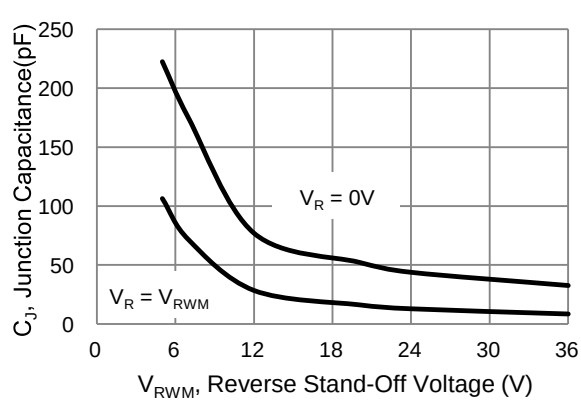


Fig.4 TLP Measurement

PE4205CS ~ PE4236CS Series

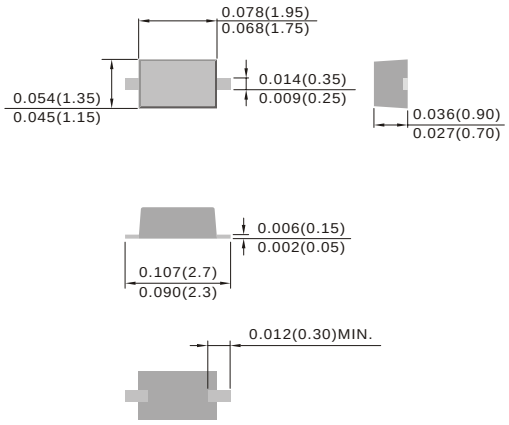
Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PE4205CS_R1_00001	SOD-323	5K pcs / 7” reel	ABA	Halogen free
PE4207CS_R1_00001	SOD-323	5K pcs / 7” reel	ABB	Halogen free
PE4209CS_R1_00001	SOD-323	5K pcs / 7” reel	ABC	Halogen free
PE4212CS_R1_00001	SOD-323	5K pcs / 7” reel	ABD	Halogen free
PE4215CS_R1_00001	SOD-323	5K pcs / 7” reel	ABE	Halogen free
PE4218CS_R1_00001	SOD-323	5K pcs / 7” reel	ABF	Halogen free
PE4220CS_R1_00001	SOD-323	5K pcs / 7” reel	ABH	Halogen free
PE4224CS_R1_00001	SOD-323	5K pcs / 7” reel	ABI	Halogen free
PE4236CS_R1_00001	SOD-323	5K pcs / 7” reel	ABJ	Halogen free

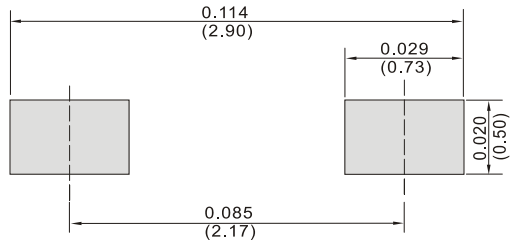
PE4205CS ~ PE4236CS Series

Packaging Information & Mounting Pad Layout

SOD-323 Dimension — Unit: inch(mm)



SOD-323 Pad Layout — Unit: inch(mm)



PE4205CS ~ PE4236CS Series

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