

PE4505CS ~ PE4536CS Series

ESD Protection

Voltage

5~36 V

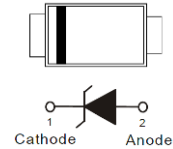
Features

- IEC61000-4-2(ESD) : $\pm 30\text{kV}$ Air, $\pm 30\text{kV}$ Contact
- IEC61000-4-5(Lightning) : 6~31.2A(8/20 μs)
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : SOD-323 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0041 grams

SOD-323



Maximum Ratings and Thermal Characteristics ($T_A = 25^\circ\text{C}$ 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)	$R_{\theta\text{JA}}$	650	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	-55~150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55~150	$^\circ\text{C}$

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

PE4505CS						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	5	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1\text{mA}$	6	-	8	V
Reverse Leakage Current	I_R	$V_R = 5\text{V}$	-	-	1	μA
Clamping Voltage	V_C	$I_{PP} = 31.2\text{A}$, $t_P = 8/20\mu\text{s}$	-	-	15	V
Off State Junction Capacitance	C_J	0Vdc Bias $f = 1\text{MHz}$	-	-	390	pF

PE4507CS						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	7	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1\text{mA}$	7.7	-	9	V
Reverse Leakage Current	I_R	$V_R = 7\text{V}$	-	-	1	μA
Clamping Voltage	V_C	$I_{PP} = 28.8\text{A}$, $t_P = 8/20\mu\text{s}$	-	-	16.5	V
Off State Junction Capacitance	C_J	0Vdc Bias $f = 1\text{MHz}$	-	-	355	pF

PE4509CS						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	9	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1\text{mA}$	9.9	-	12	V
Reverse Leakage Current	I_R	$V_R = 9\text{V}$	-	-	0.5	μA
Clamping Voltage	V_C	$I_{PP} = 20.4\text{A}$, $t_P = 8/20\mu\text{s}$	-	-	23	V
Off State Junction Capacitance	C_J	0Vdc Bias $f = 1\text{MHz}$	-	-	290	pF

PE4512CS						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	12	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1\text{mA}$	13.2	-	15.5	V
Reverse Leakage Current	I_R	$V_R = 12\text{V}$	-	-	0.1	μA
Clamping Voltage	V_C	$I_{PP} = 17.4\text{A}$, $t_P = 8/20\mu\text{s}$	-	-	26.5	V
Off State Junction Capacitance	C_J	0Vdc Bias $f = 1\text{MHz}$	-	-	195	pF

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PE4515CS

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	15	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1mA$	16.5	-	19.5	V
Reverse Leakage Current	I_R	$V_R = 15V$	-	-	0.1	μA
Clamping Voltage	V_C	$I_{PP} = 13.2A$, $t_P = 8/20\mu s$	-	-	35.5	V
Off State Junction Capacitance	C_J	0Vdc Bias $f = 1MHz$	-	-	127	pF

PE4520CS

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	20	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1mA$	22	-	26	V
Reverse Leakage Current	I_R	$V_R = 20V$	-	-	0.1	μA
Clamping Voltage	V_C	$I_{PP} = 11.4A$, $t_P = 8/20\mu s$	-	-	40	V
Off State Junction Capacitance	C_J	0Vdc Bias $f = 1MHz$	-	-	105	pF

PE4524CS

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	24	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1mA$	26.4	-	31	V
Reverse Leakage Current	I_R	$V_R = 24V$	-	-	0.1	μA
Clamping Voltage	V_C	$I_{PP} = 8.4A$, $t_P = 8/20\mu s$	-	-	55	V
Off State Junction Capacitance	C_J	0Vdc Bias $f = 1MHz$	-	-	82.5	pF

PE4536CS

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 2)	V_{RWM}	-	-	-	36	V
Reverse Breakdown Voltage	V_{BR}	$I_{BT} = 1mA$	39.6	-	46.5	V
Reverse Leakage Current	I_R	$V_R = 36V$	-	-	0.1	μA
Clamping Voltage	V_C	$I_{PP} = 6A$, $t_P = 8/20\mu s$	-	-	67.5	V
Off State Junction Capacitance	C_J	0Vdc Bias $f = 1MHz$	-	-	60	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.

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TYPICAL CHARACTERISTIC CURVES

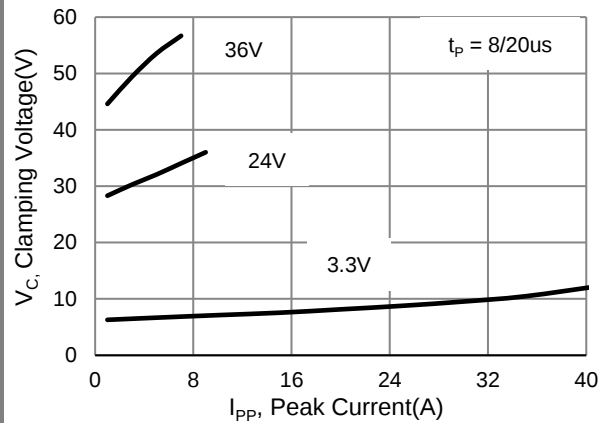


Fig.1 Typical Peak Clamping Voltage

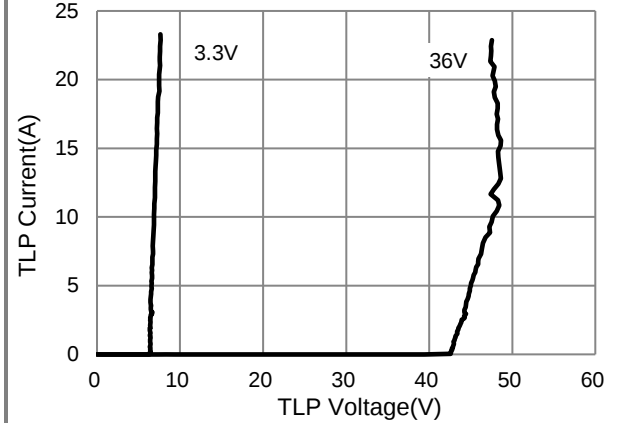


Fig.2 TLP Measurement

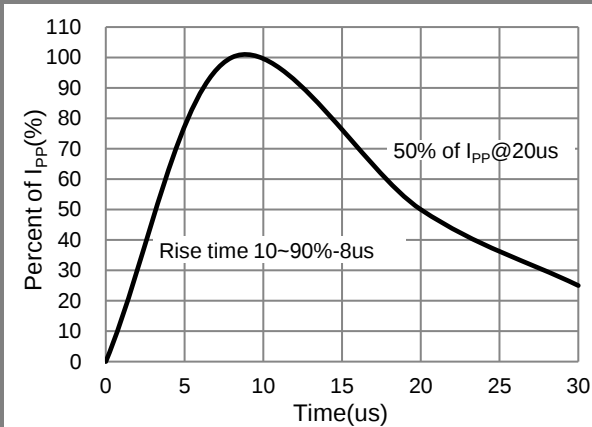


Fig.3 Pulse Waveform

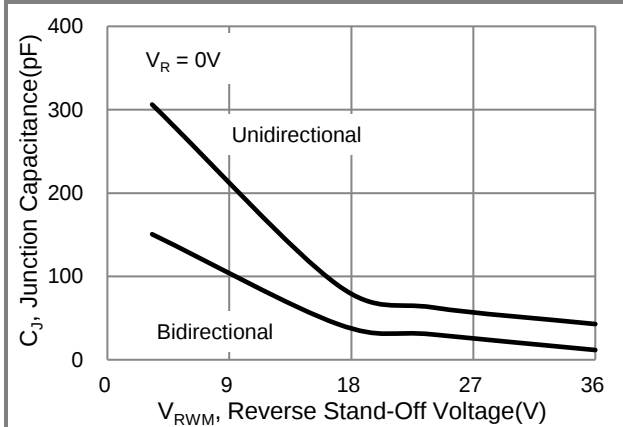


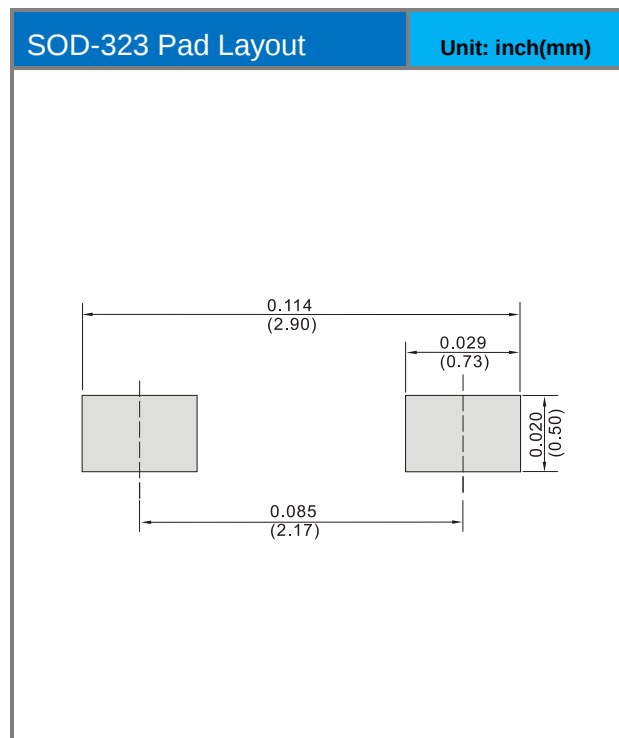
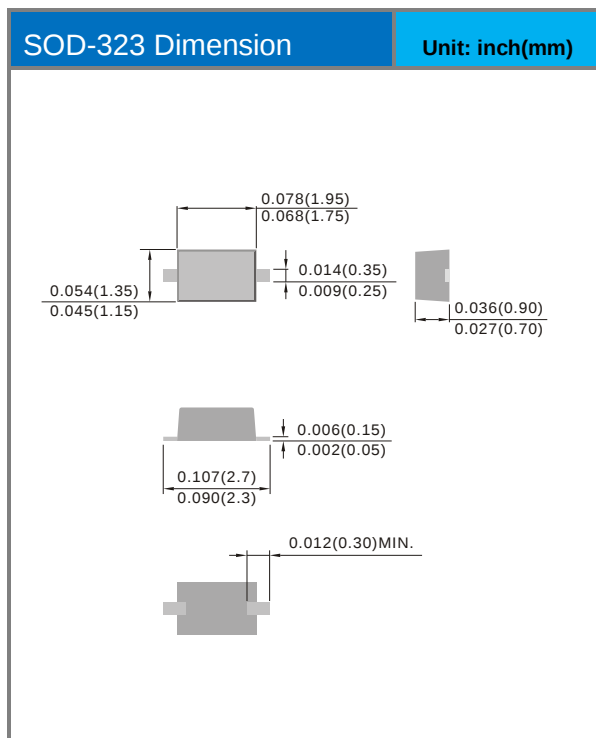
Fig.4 Typical Junction Capacitance

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PE4505CS	SOD-323	5K pcs / 7" reel	AEA
PE4507CS	SOD-323	5K pcs / 7" reel	AEB
PE4509CS	SOD-323	5K pcs / 7" reel	AEC
PE4512CS	SOD-323	5K pcs / 7" reel	AED
PE4515CS	SOD-323	5K pcs / 7" reel	AEE
PE4520CS	SOD-323	5K pcs / 7" reel	AEF
PE4524CS	SOD-323	5K pcs / 7" reel	AEG
PE4536CS	SOD-323	5K pcs / 7" reel	AEJ

Packaging Information & Mounting Pad Layout



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