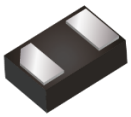
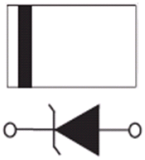
PE4703L1Q ~ PE4748L1Q Series

Hi-Surge ESD Protection

Voltage **3.3~48 V**

DFN1610-2L





Features

- IEC61000-4-2(ESD) : ±30kV Air, ±30kV Contact
- IEC61000-4-4(EFT) : 40A(5/50ns)
- IEC61000-4-5(Lightning) : 19A ~ 100A(8/20uS)
- Low clamping voltage
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : DFN1610-2L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0024 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
Typical Thermal Resistance(Note 1)	$R_{\theta JA}$	300	°C/W
Operating Junction Temperature Range	T_J	-55~150	°C
Storage Temperature Range	T_{STG}	-55~150	°C

PE4703L1Q ~ PE4748L1Q Series

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

PE4703L1Q						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	3.3	V
Maximum Peak Pulse Current	I_{PP}	t_P = 8/20us	-	-	110	A
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1mA	4	-	6.5	V
Reverse Leakage Current	I_R	V_R = 3.3V	-	-	3	uA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20us	-	-	8	V
		I_{PP} = 110A, t_P = 8/20us	-	-	12.7	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz	-	-	1500	pF

PE4705L1Q						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	5	V
Maximum Peak Pulse Current	I_{PP}	t_P = 8/20us	-	-	100	A
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1mA	5.5	-	9	V
Reverse Leakage Current	I_R	V_R = 5V	-	-	3	uA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20us	-	-	9	V
		I_{PP} = 100A, t_P = 8/20us	-	-	14.5	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz	-	-	1300	pF

PE4707L1Q						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	7	V
Maximum Peak Pulse Current	I_{PP}	t_P = 8/20us	-	-	88	A
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1mA	7.7	-	9.5	V
Reverse Leakage Current	I_R	V_R = 7V	-	-	1	uA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20us	-	-	10.5	V
		I_{PP} = 88A, t_P = 8/20us	-	-	16.5	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz	-	-	960	pF

PE4703L1Q ~ PE4748L1Q Series

PE4709L1Q						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	9	V
Maximum Peak Pulse Current	I_{PP}	t_P = 8/20us	-	-	73	A
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1mA	9.9	-	12	V
Reverse Leakage Current	I_R	V_R = 9V	-	-	1	uA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20us	-	-	13.5	V
		I_{PP} = 73A, t_P = 8/20us	-	-	20	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz	-	-	700	pF

PE4712L1Q						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	12	V
Maximum Peak Pulse Current	I_{PP}	t_P = 8/20us	-	-	58	A
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1mA	13.2	-	15.5	V
Reverse Leakage Current	I_R	V_R = 12V	-	-	1	uA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20us	-	-	18	V
		I_{PP} = 58A, t_P = 8/20us	-	-	27	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz	-	-	600	pF

PE4715L1Q						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	15	V
Maximum Peak Pulse Current	I_{PP}	t_P = 8/20us	-	-	45	A
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1mA	16.5	-	20	V
Reverse Leakage Current	I_R	V_R = 15V	-	-	1	uA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20us	-	-	22.5	V
		I_{PP} = 45A, t_P = 8/20us	-	-	32	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz	-	-	480	pF

PE4703L1Q ~ PE4748L1Q Series

PE4720L1Q						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	20	V
Maximum Peak Pulse Current	I_{PP}	t_P = 8/20us	-	-	34	A
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1mA	22	-	26	V
Reverse Leakage Current	I_R	V_R = 20V	-	-	1	uA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20us	-	-	30	V
		I_{PP} = 34A, t_P = 8/20us	-	-	43	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz	-	-	310	pF

PE4724L1Q						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	24	V
Maximum Peak Pulse Current	I_{PP}	t_P = 8/20us	-	-	32	A
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1mA	26.4	-	31	V
Reverse Leakage Current	I_R	V_R = 24V	-	-	1	uA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20us	-	-	35	V
		I_{PP} = 32A, t_P = 8/20us	-	-	45	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz	-	-	280	pF

PE4728L1Q						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	28	V
Maximum Peak Pulse Current	I_{PP}	t_P = 8/20us	-	-	27.5	A
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1mA	30	-	35.5	V
Reverse Leakage Current	I_R	V_R = 28V	-	-	1	uA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20us	-	-	42	V
		I_{PP} = 27.5A, t_P = 8/20us	-	-	52	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz	-	-	230	pF

PE4703L1Q ~ PE4748L1Q Series

PE4736L1Q						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	36	V
Maximum Peak Pulse Current	I_{PP}	t_P = 8/20us	-	-	19	A
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1mA	39.6	-	46.5	V
Reverse Leakage Current	I_R	V_R = 36V	-	-	1	uA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20us	-	-	52.5	V
		I_{PP} = 19A, t_P = 8/20us	-	-	75	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz	-	-	190	pF

PE4748L1Q						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	48	V
Maximum Peak Pulse Current	I_{PP}	t_P = 8/20us	-	-	15	A
Reverse Breakdown Voltage	V_{BR}	I_{BT} = 1mA	52.8	-	62	V
Reverse Leakage Current	I_R	V_R = 48V	-	-	1	uA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20us	-	-	69.6	V
		I_{PP} = 15A, t_P = 8/20us	-	-	96	V
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz	-	-	150	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.

PE4703L1Q ~ PE4748L1Q Series

TYPICAL CHARACTERISTIC CURVES

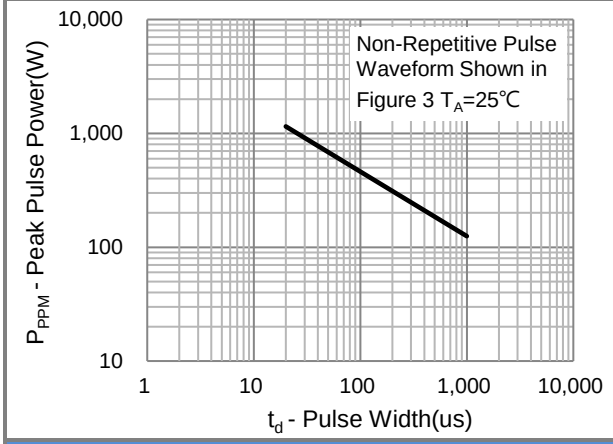


Fig.1 Peak Pulse Power Rating Curve

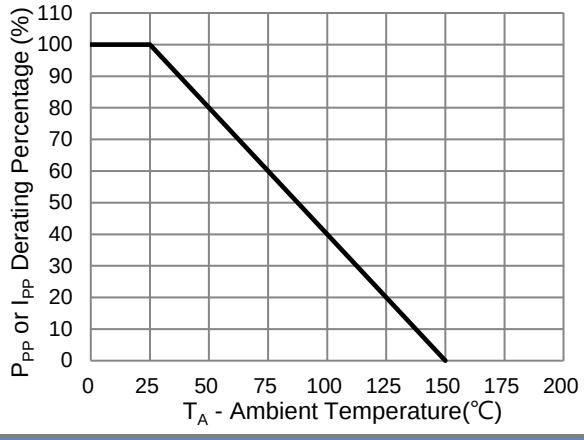


Fig.2 Derating Curve

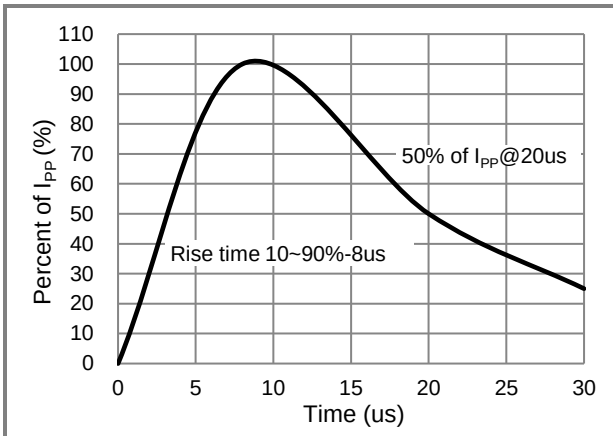


Fig.3 Pulse Waveform

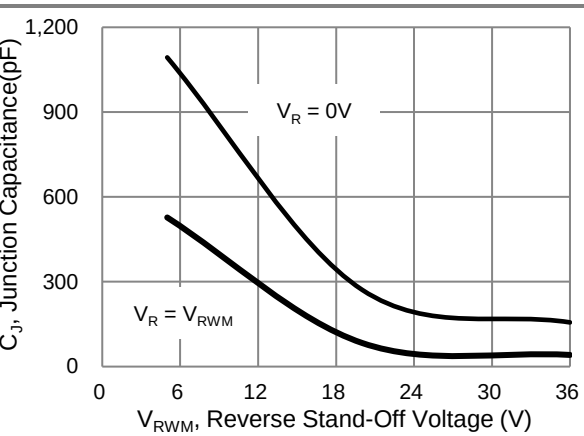


Fig.4 Typical Junction Capacitance

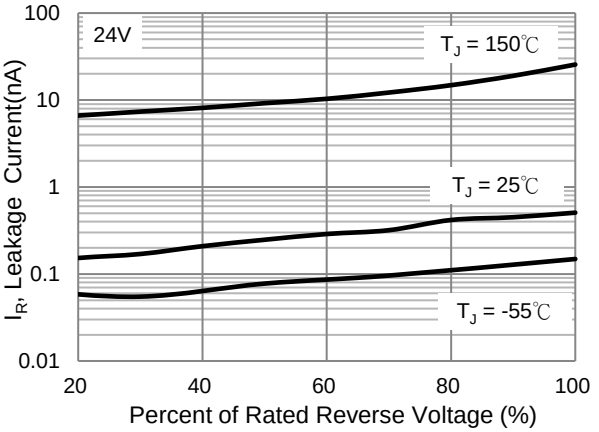


Fig.5 Typical Reverse Characteristics

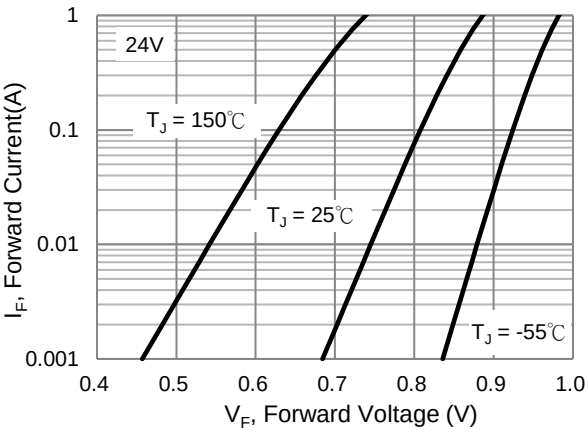


Fig.6 Typical Forward Characteristics

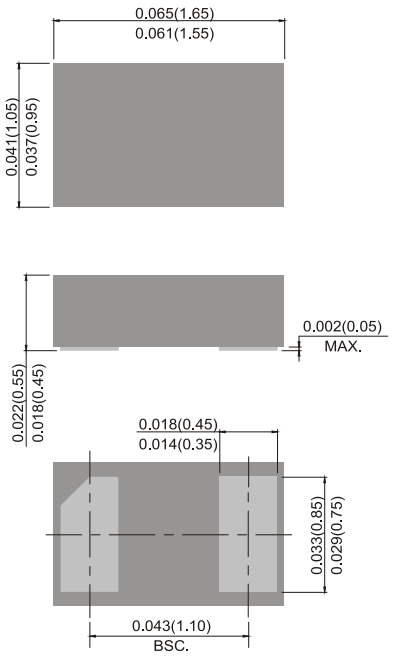
PE4703L1Q ~ PE4748L1Q Series

Product and Packing Information

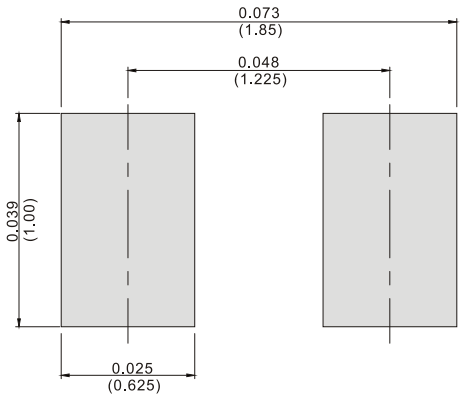
Part No.	Package Type	Packing Type	Marking
PE4703L1Q	DFN1610-2L	3K pcs / 7” reel	JP
PE4705L1Q	DFN1610-2L	3K pcs / 7” reel	JA
PE4707L1Q	DFN1610-2L	3K pcs / 7” reel	JB
PE4709L1Q	DFN1610-2L	3K pcs / 7” reel	JD
PE4712L1Q	DFN1610-2L	3K pcs / 7” reel	JF
PE4715L1Q	DFN1610-2L	3K pcs / 7” reel	JG
PE4720L1Q	DFN1610-2L	3K pcs / 7” reel	JH
PE4724L1Q	DFN1610-2L	3K pcs / 7” reel	JI
PE4728L1Q	DFN1610-2L	3K pcs / 7” reel	JM
PE4736L1Q	DFN1610-2L	3K pcs / 7” reel	JL
PE4748L1Q	DFN1610-2L	3K pcs / 7” reel	JN

Packaging Information & Mounting Pad Layout

DFN1610-2L Dimension — Unit: inch(mm)



DFN1610-2L Pad Layout — Unit: inch(mm)



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