DFN1610-2L ESD 静电保护二极管

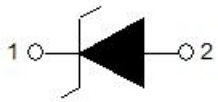
■Features 特点

Un-directional ESD Protection 单通道单向静电保护

■Applications 应用

Notebooks, desktops, and servers 笔记本、台式机和服务器
Cellular handsets and accessories 蜂窝手机及附件
Personal Digital Assistants 个人数码助手
Portable Instrumentation 便携仪器

■Internal Schematic Diagram 内部结构



■Device Marking 产品打标

24P

■Absolute Maximum Ratings 最大额定值

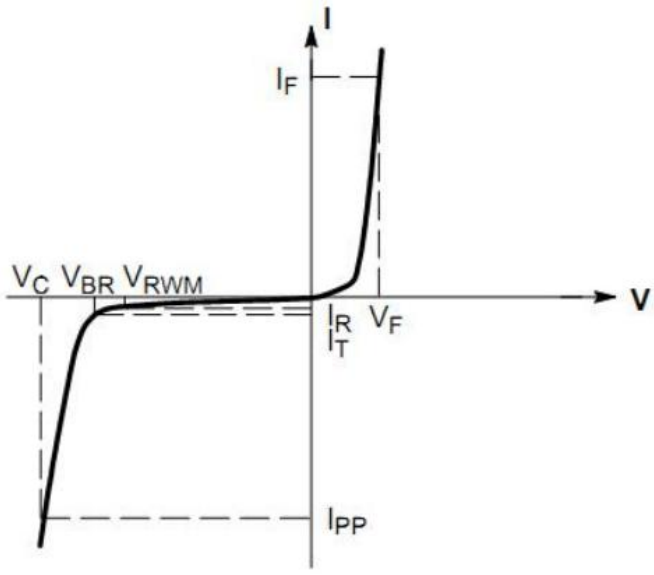
Characteristic 特性参数	Symbol 符号	Rat 额定值	Unit 单位
ESD (IEC61000-4-2 contact discharge) @25℃接触放电	V_{ESD}	±30	KV
ESD (IEC61000-4-2 air discharge) @25℃空气放电	V_{ESD}	±30	KV
Peak Pulse Power @25℃峰值脉冲功率	P_{PK}	2400	W
Peak Pulse Current @25℃峰值脉冲电流	I_{PP}	80	A
Lead Temperature 管脚温度	T_L	260	℃
Operating Temperature 工作温度	T_{op}	-40~85	℃
Junction Temperature 结温	T_J	-55~125	℃
Storage Temperature 储存温度	T_{stg}	-55~150	℃

■Electrical Characteristics 电特性

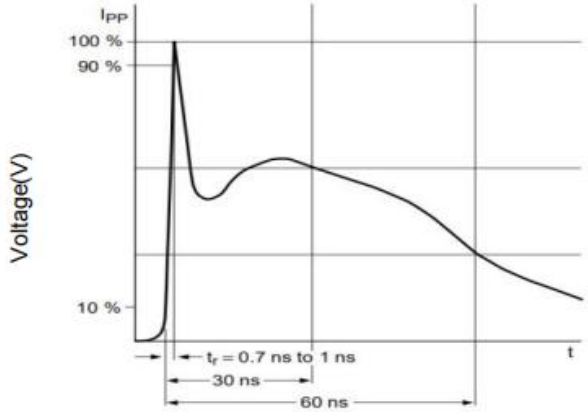
(T_A=25℃ unless otherwise noted 如无特殊说明，温度为 25℃)

Characteristic Parameters 特性参数	Symbol 符号	Min 最小值	Typ 典型值	Max 最大值	Unit 单位	Condition 条件
Reverse Stand-off Voltage 反向工作电压	V_{RWM}			24	V	
Reverse Breakdown Voltage 反向击穿电压	V_{BR}	25			V	I_T=1mA
Reverse Leakage Current 反向漏电流	I_R			0.1	μA	V_{RWM}=24V
Clamping Voltage 钳位电压	V_C		26.5		V	I_{PP}=40A,tp=8/20μs
Clamping Voltage 钳位电压	V_C		28	30	V	I_{PP}=80A,tp=8/20μs
Diode Capacitance 二极管电容	C_D		240 67	300 80	pF	V_R=0V,f=1MHz V_R=24V,f=1MHz

V_{RWM}	Reverse Working Voltage 反向工作电压
$V_{R(BR)}$	Reverse Breakdown Voltage 反向击穿电压@I_T=1mA
I_T	Test Current 测试电流
I_R	Reverse Leakage Current 反向漏电流@V_{RWM}
V_C	Clamping Voltage 钳位电压
I_{PP}	Reverse Peak Pulse Current 浪涌电流
C_D	Diode Capacitance 结电容 V_{IO}=0V, f = 1MHz

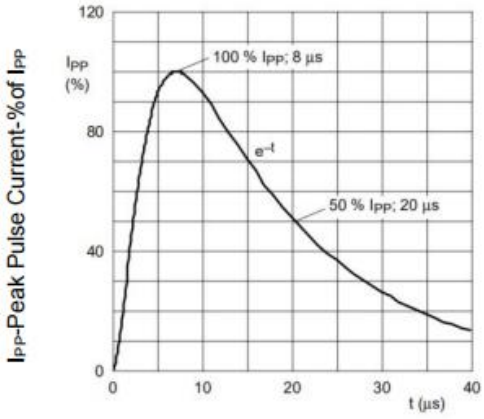


■Typical Characteristic Curve 典型特性曲线



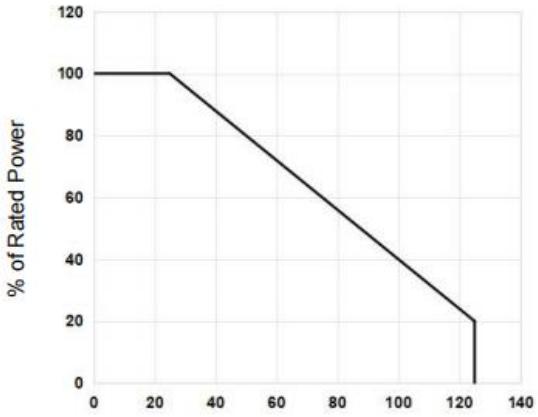
Time(nS)

IEC61000−4−2 Pulse Waveform

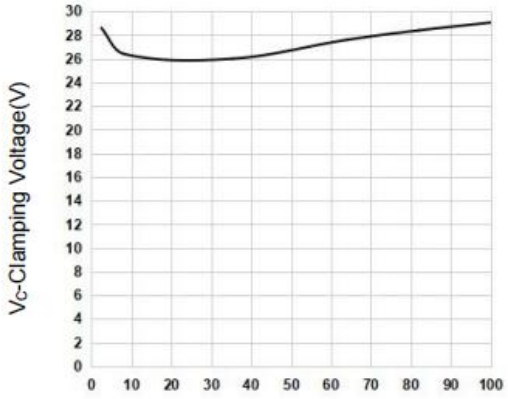


T-Time(µS)

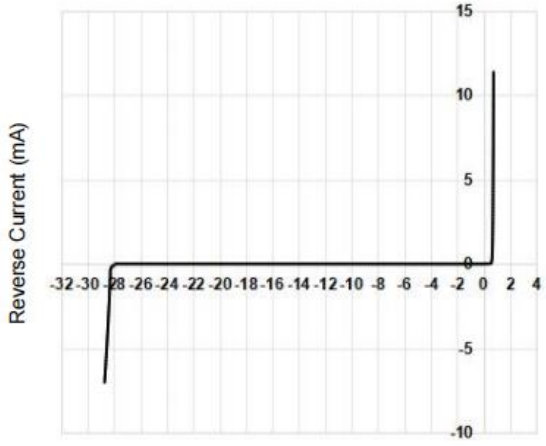
IEC61000−4−5 8X20µs Pulse Waveform



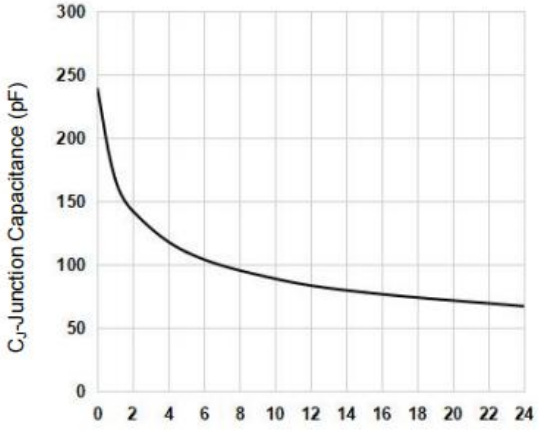
Power Derating Curve



Clamping Voltage vs. Peak Pulse Current



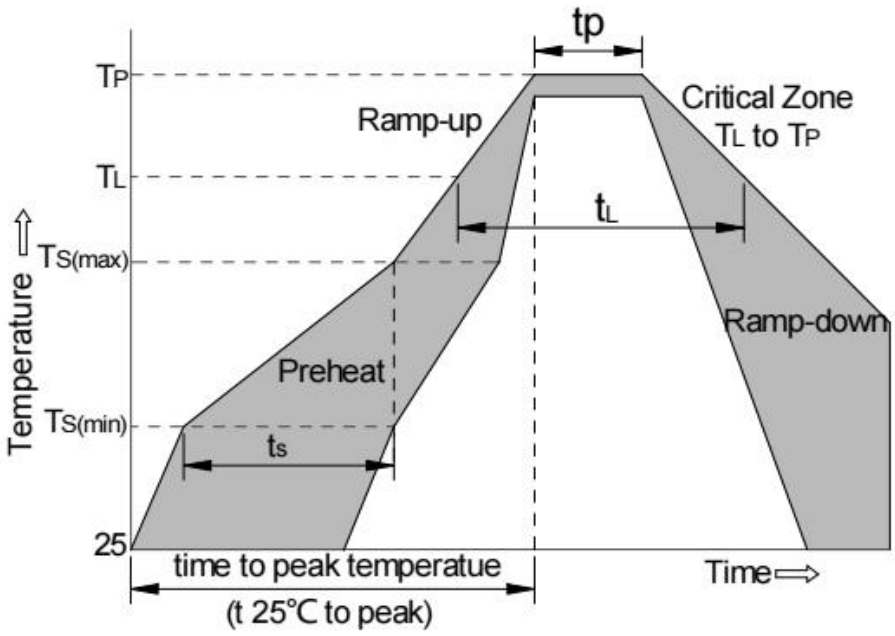
Reverse Current vs. Reverse Voltage



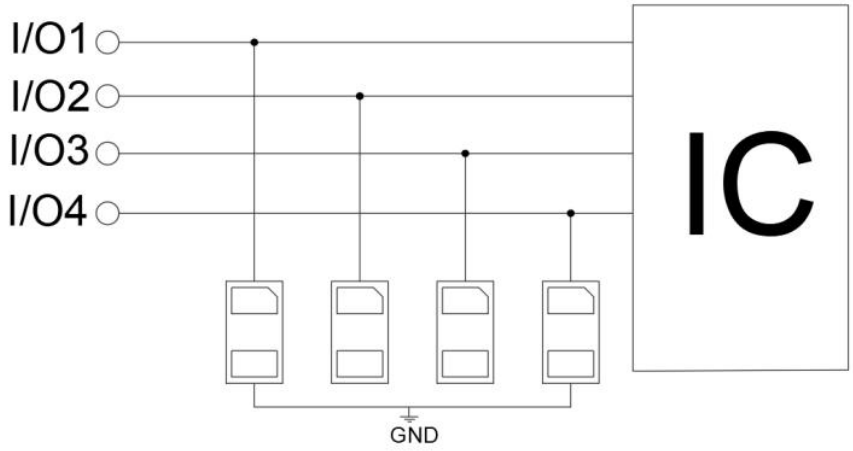
Junction Capacitance vs. Reverse Voltage

■Soldering Parameters 焊接参数

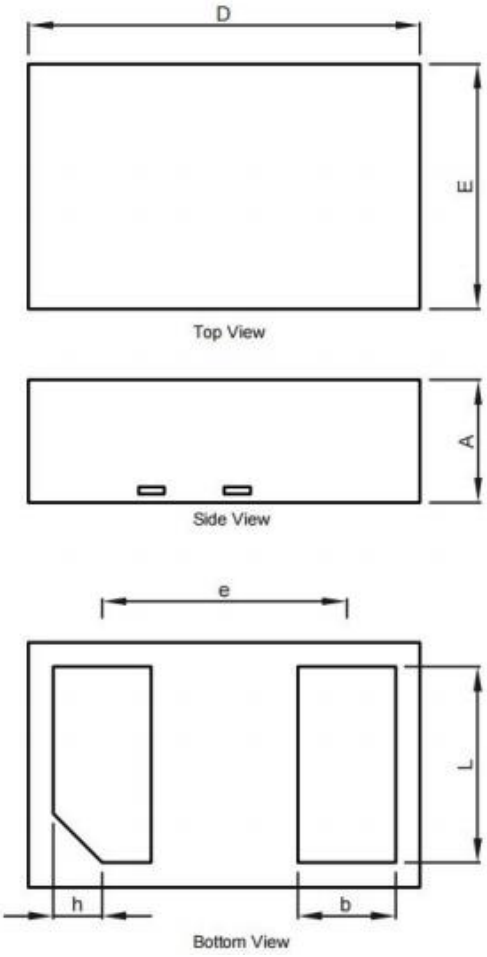
Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



■Typical Application 典型应用



■Dimension 外形封装尺寸



SYMBOL	MILLIMETERS		
	MIN	TYP	MAX
A	0.535	0.585	0.635
D	1.550	1.600	1.650
E	0.950	1.000	1.050
b	0.350	0.400	0.450
L	0.750	0.80	0.850
e	1.10BSC		
h	0.150	0.200	0.250