

静电防护二极管 :TExD102 系列

DFN1006 封装



■ 特性

- 1. 符合RoHS与无卤要求
- 2. 低电容
- 3. 低限制电压
- 4. 低漏流
- 5. 满足 61000-4-2 (ESD) 15~30KV (air), 10~30KV (contact)



■ 用途

- 1. 手机与配件
- 2. 笔记本电脑, 服务器
- 3. PCI express, SATA, USB 2.0,DVI, 显示端口
- 4. 可携式装置

■ 机械数据

- 1. 封装型式: DFN1006(EIA 0402), 封装塑料符合防火等级UL94-V0
- 2. 满足MSL level 1, per J-STD-020

■ 编码规则

T	E	L	D	1	0	2	0	5	1	0	0	B
1	2	3	4	5	6	7	8	9	10	11	12	13
↓		↓		↓		↓		↓		↓		↓
产品类型		电容型式		封装形式		反向截止电压 (V _{RWM})		结电容(Cj)		极性型式		
TE	兴勤 静电防护二极管	D	标准电容 >10pF	D102	DFN1006, 2pins	3R	3.3V	0R3	0.3pF	U	单极性	
		L	低电容 >1pF, ≤10pF			05	5V	0R4	0.4pF	B	双极性	
		U	超低电容 ≤1pF			12	12v	01C	1.2pF			
								02H	2.7pF			
								080	8pF			
								100	10pF			
								120	12pF			
								150	13pF			
								300	30pF			

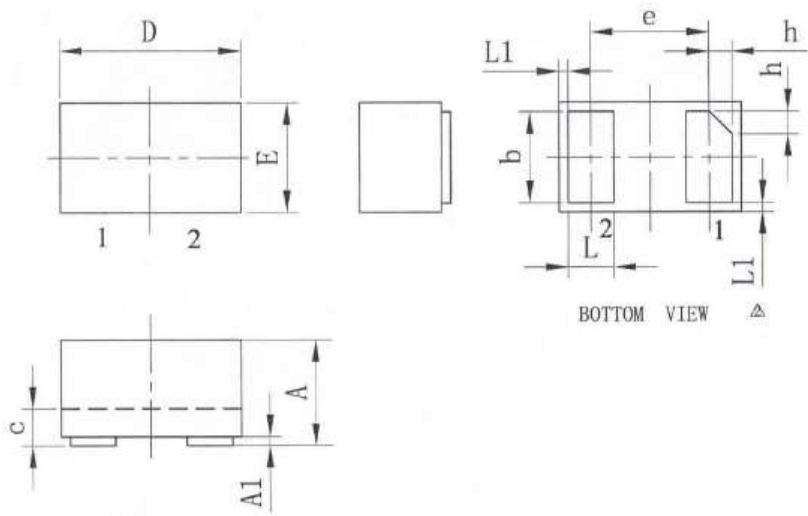
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■ 结构与尺寸

单位:mm



Symbol	DFN1006-2L		
	Min	Nom	Max
A	0.45	0.5	0.55
A1	0	0.02	0.05
b	0.45	0.5	0.55
c	0.12	0.15	0.18
D	0.95	1	1.05
e	0.65BSC		
E	0.55	0.6	0.65
L	0.2	0.25	0.3
L1	0.05REF		
h	0.07	0.12	0.17

■ 图标概要与配置



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■ 电气特性 (T_A=25℃)

兴勤料号	最大反向 截止电压	反向漏电流		产品极性 单/双向	印字	峰值脉冲 功率	峰值脉冲 电流	接触 放电	空气 放电	工作温度	存储温度
	V _{RWM} （V）	I _R （uA）		Uni/Bi		P _{PK} （W）	I _{PP} （A）	KV	KV	T _J （℃）	T _{stg} （℃）
	Max	Typ	Max	（单/双）							
TEUD1023R0R4B	3.3	0.1	0.5	Bi	3T	60	3.5	20	20	-55 to +125	-55 to +125
TEDD1023R120B	3.3		2	Bi		84	7	±20	±25	-55 to +125	-55 to +150
TEDD1023R150B	3.3	0.1	0.2	Bi	3E	80	10	15	25	-55 to +125	-55 to +125
TEUD102050R3B	5	0.1	0.5	Bi	5T	60	3.5	20	20	-55 to +125	-55 to +125
TEUD102060R3B	6	0.1	0.5	Bi	5T	60	3.5	20	20	-55 to +125	-55 to +125
TEUD102050R4B	5	0.1	0.5	Bi	5F	60	3.5	20	20	-55 to +125	-55 to +125
TELD1020502HB	5	0.1	0.5	Bi	VB	40	3	10	15	-55 to +125	-55 to +125
TELD10205080B	5		1	Bi	PB	65	5	25	25	-55 to +150	-55 to +150
TELD1020501CU	5	0.1	0.5	Uni	UD	70	7	25	25	-55 to +125	-55 to +125
TEDD10205300B	5	0.1	0.5	Bi	M5	200	18	30	30	-55 to +125	-55 to +125
TELD10212100B	12	0.1	0.5	Bi	12B	120	5	30	30	-55 to +125	-55 to +125

■ 电气特性 (T_A=25℃)

TEUD1023R0R4B						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			3.3	V	
Breakdown Voltage	V _{BR}	5.0	7.5		V	IT = 1mA
Reverse Leakage Current	I _R		0.1	0.5	uA	VR = VRWM
Clamping Voltage	V _C		8		V	IPP = 1A (8/20μs pulse)
			15	19	V	IPP = 3.5A (8/20μs pulse)
Junction Capacitance	C _J		0.4	0.5	pF	VR = 0V, f = 1MHz

TEDD1023R120B						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			3.3	V	
Breakdown Voltage	V _{BR}	4			V	IT = 1mA
Reverse Leakage Current	I _R			1	uA	VR = VRWM
Clamping Voltage	V _C			19	V	IPP = 1A (8/20μs pulse)
				12	V	IPP = 7A (8/20μs pulse)
Junction Capacitance	C _J			12	pF	VR = 0V, f = 1MHz



TEDD1023R150B						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			3.3	V	
Breakdown Voltage	V_{BR}	3.8			V	$I_T = 1mA$
Reverse Leakage Current	I_R		0.1	0.2	μA	$V_R = V_{RWM}$
Clamping Voltage	V_C			6	V	$I_{PP} = 5A$ (8/20 μs pulse)
Clamping Voltage	V_C			8	V	$I_{PP} = 10A$ (8/20 μs pulse)
Junction Capacitance	C_J		12	15	pF	$V_R = 0V$, $f = 1MHz$

TEUD102050R3B/TEUD102060R3B						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6	8		V	$I_T = 1mA$
Reverse Leakage Current	I_R		0.1	0.5	μA	$V_R = V_{RWM}$
Clamping Voltage	V_C			15	V	$I_{PP} = 3.5A$ (8/20 μs pulse)
Junction Capacitance	C_J		0.5	0.9	pF	$V_R = 0V$, $f = 1MHz$

TEUD102050R4B						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6	8		V	$I_T = 1mA$
Reverse Leakage Current	I_R		0.1	0.5	μA	$V_R = V_{RWM}$
Clamping Voltage	V_C			16	V	$I_{PP} = 3.5A$ (8/20 μs pulse)
Junction Capacitance	C_J		0.4	0.5	pF	$V_R = 0V$, $f = 1MHz$

TELD1020502HB						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	5.5	6.5		V	$I_T = 1mA$
Reverse Leakage Current	I_R		0.1	0.5	μA	$V_R = V_{RWM}$
Clamping Voltage	V_C			12	V	$I_{PP} = 3A$ (8/20 μs pulse)
Junction Capacitance	C_J		2.7	3.5	pF	$V_R = 0V$, $f = 1MHz$



TELD10205080B						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6			V	$I_T = 1mA$
Reverse Leakage Current	I_R			1	μA	$V_R = V_{RWM}$
Clamping Voltage	V_C			13	V	$I_{PP} = 6A$ (8/20 μs pulse)
Junction Capacitance	C_J		8	10	pF	$V_R = 0V, f = 1MHz$

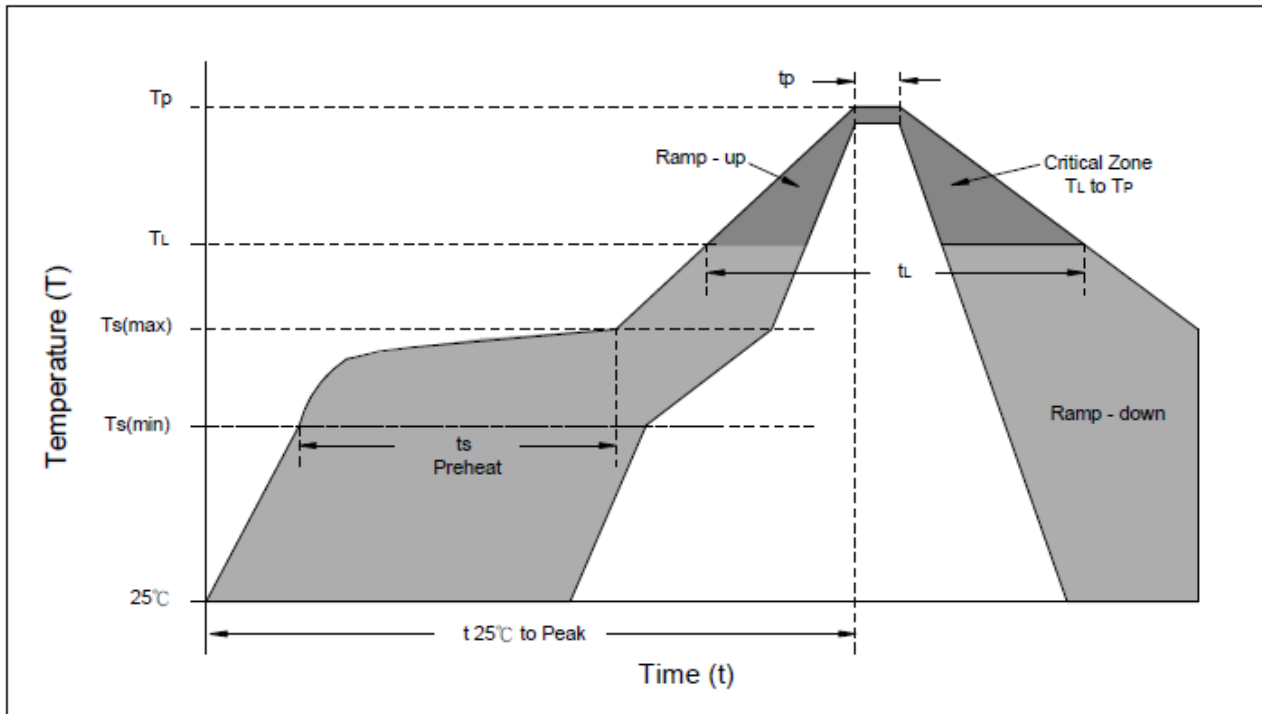
TELD1020501CU						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6	7.2		V	$I_T = 1mA$
Reverse Leakage Current	I_R		0.1	0.5	μA	$V_R = V_{RWM}$
Clamping Voltage	V_C		10		V	$I_{PP} = 7A$ (8/20 μs pulse)
Junction Capacitance	C_J		1.2	1.5	pF	$V_R = 0V, f = 1MHz$

TEDD10205300B						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6			V	$I_T = 1mA$
Reverse Leakage Current	I_R		0.1	0.5	μA	$V_R = V_{RWM}$
Clamping Voltage	V_C			11.5	V	$I_{PP} = 18A$ (8/20 μs pulse)
Junction Capacitance	C_J		30		pF	$V_R = 0V, f = 1MHz$

TELD10212100B						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			12	V	
Breakdown Voltage	V_{BR}	13.3			V	$I_T = 1mA$
Reverse Leakage Current	I_R		0.1	0.5	μA	$V_R = V_{RWM}$
Clamping Voltage	V_C			24	V	$I_{PP} = 5A$ (8/20 μs pulse)
Junction Capacitance	C_J		10		pF	$V_R = 0V, f = 1MHz$

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■ 推荐焊接条件



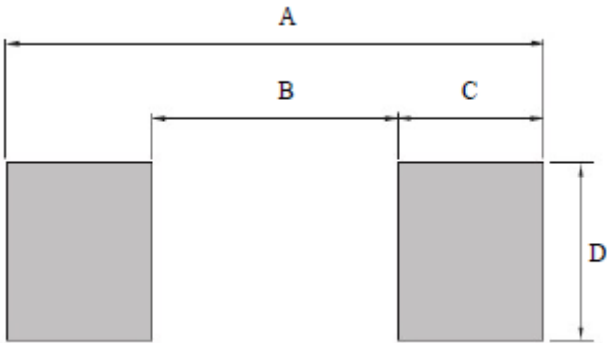
Reflow Condition	Lead-free assembly
Preheat -Temperature Min(Ts min) -Temperature Min(Ts max) -Time (min to max) (ts)	150°C 200°C 60 – 180 seconds
Average ramp up rate -Temperature Liquidus (TL) to peak	3°C/second max
Ts(max) to TL -Ramp-up Rate	3°C/second max.
Reflow -Temperature Liquidus (TL) -Time (tL)	217°C 60 – 150 seconds
Peak Temperature (TP)	260°C
Time within 5°C of actual peak Temperature(tp)	20 – 40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to peak Temperature(TP)	8 minutes max.
Do not exceed	260°C

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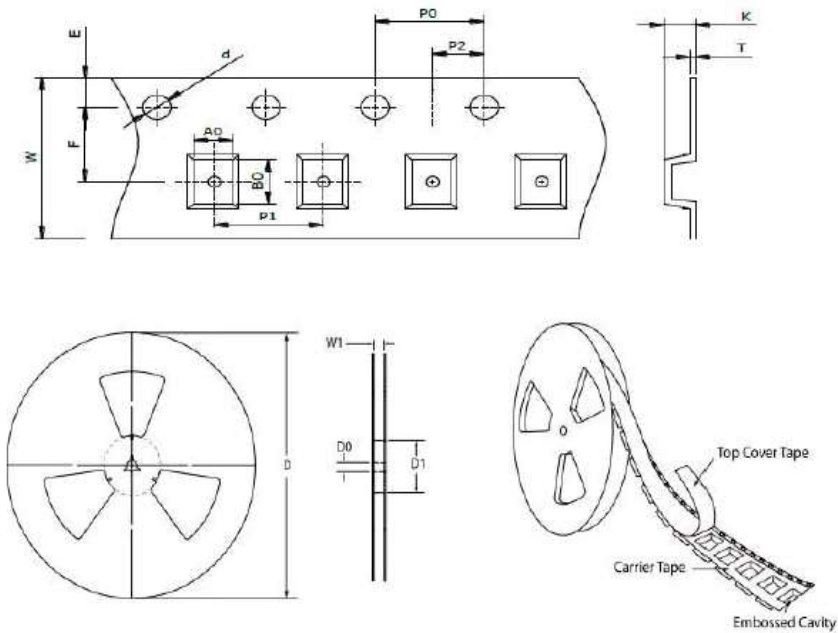
■ 推荐焊盘尺寸



单位:mm

封装	A	B	C	D
DFN1006(EIA0402)	1.3	0.3	0.5	0.7

■ 包装



单位:mm

Symbol	DFN1006-2L
A0	0.67 ± 0.10
B0	1.12 ± 0.10
K	0.60 ± 0.10
d	1.50 ± 0.10
D	178.00 ± 2.00
D0	13.00 ± 0.20
D1	MIN. 54.00
E	1.75 ± 0.10
F	3.50 ± 0.10
P0	4.00 ± 0.10
P1	4.00 ± 0.10
P2	2.00 ± 0.10
T	0.22 ± 0.05
W	8.00 ± 0.20
W1	MAX. 13.50

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■ 数量

最小包装数量(MPQ): 10,000pcs

封装型式	卷盘尺寸(英寸)	单卷数量(Kpcs)
DFN1006(EIA0402)	7"	10

■ 仓库存储条件

● 存储条件:

- 1.储存温度: -10℃~+40℃
- 2.相对湿度: $\leq 75\%RH$
- 3.不要将本产品存放在有腐蚀性气体或是阳光直接照射的环境中保管

● 存储期限: 1 年