

# ESD Protection Diode: TExSD82

## SOD-882 package



### ■ Features

1. RoHS compliant and halogen-free
2. Low capacitance
3. Low clamping voltage
4. Low leakage current
5. IEC 61000-4-2 (ESD) 15~20KV (air), 8~25KV (contact)



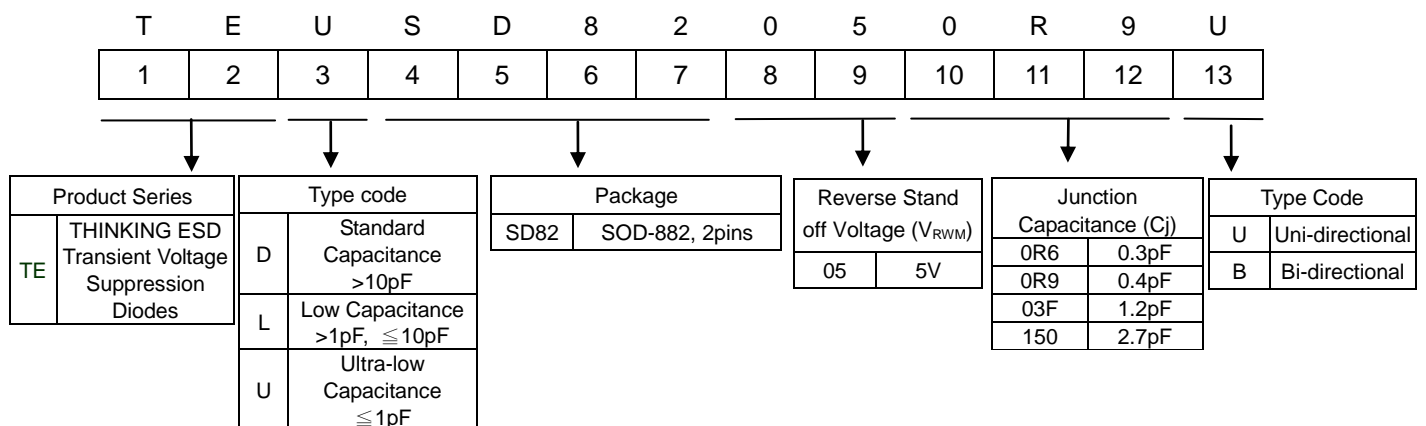
### ■ Recommended Applications

1. Cell phone handsets and accessories
2. Notebooks, desktops and servers
3. PCI express, SATA, USB 2.0, DVI, display port
4. Portable instrumentation

### ■ Mechanical Data

1. Case: DFN1006(0402), molded plastic meets UL flammability rating 94V-0
2. Meets MSL level 1, per J-STD-020

### ■ Part Number Code

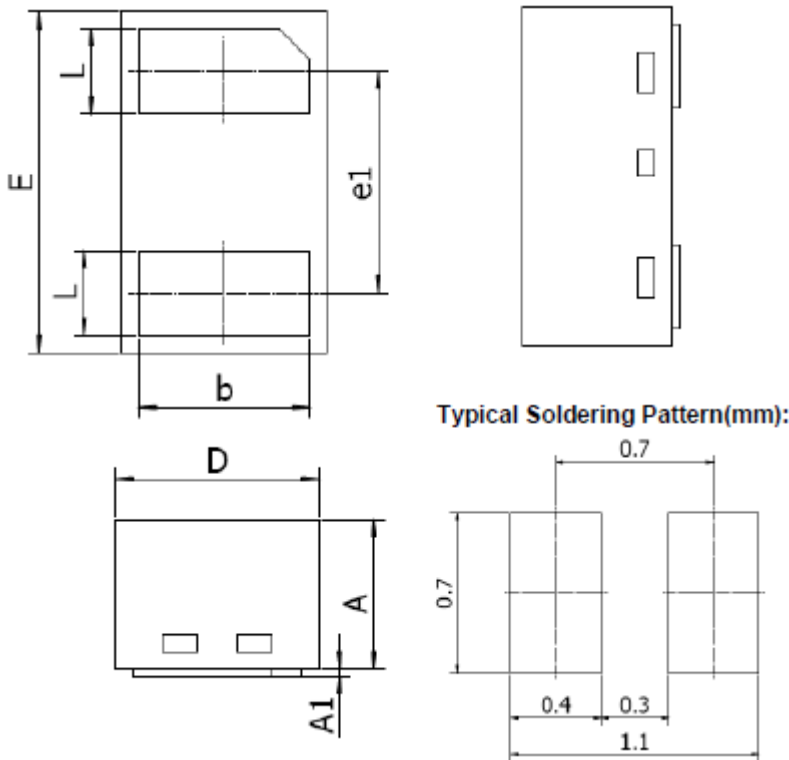


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### Structures and Dimensions



Unit: mm

Symbol	SOD-882	
	Min	Max
A	0.46	0.5
A1	-	0.03
b	0.45	0.55
D	0.55	0.65
E	0.95	1.05
e1	Typ.0.65	
L	0.2	0.3

### Schematic & PIN Configuration



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

P/N	Reverse Stand-off Voltage	Reverse Leakage Current	Product Polarity	Marking	Peak Pulse Power (8/20 $\mu\text{s}$ )	Peak Pulse Current (8/20 $\mu\text{s}$ )	ESD (contact)	ESD (air)	Operating Temp.	Storage Temp.
	$V_{RWM}$ (V)	$I_R$ ( $\mu\text{A}$ )	Uni/Bi		$P_{PK}$ (W)	$I_{PP}$ (A)	KV	KV	$T_J$ ( $^\circ\text{C}$ )	$T_{stg}$ ( $^\circ\text{C}$ )
	Max	Max								
TEUSD82050R6U	5	1	Uni	L		4	8	15	-55 to +150	-55 to +150
TEUSD82050R9U	5	1	Uni	N		1	8	15	-55 to +150	-55 to +150
TEUSD820503FU	5	1	Uni	Q5		3.5	12	15	-55 to +125	-55 to +150
TEUSD8205150U	5	0.5	Uni	C	60	5	25	20	-55 to +125	-55 to +150

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### ■ Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

TEUSD82050R6U						
Parameter	Symbol	Min	Typ.	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			5	V	
Breakdown Voltage	V <sub>BR</sub>	5.4			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			1	uA	V <sub>R</sub> = V <sub>RWM</sub>
Clamping Voltage	V <sub>C</sub>			20	V	I <sub>PP</sub> = 4A (8/20μs pulse)
Junction Capacitance	C <sub>J</sub>		0.65		pF	V <sub>R</sub> = 0V, f = 1MHz

TEUSD82050R9U						
Parameter	Symbol	Min	Typ.	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			5	V	
Breakdown Voltage	V <sub>BR</sub>	5.4			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			1	uA	V <sub>R</sub> = V <sub>RWM</sub>
Clamping Voltage	V <sub>C</sub>			12.9	V	I <sub>PP</sub> = 1A (8/20μs pulse)
Junction Capacitance	C <sub>J</sub>		0.9		pF	V <sub>R</sub> = 0V, f = 1MHz

TEUSD820503FU						
Parameter	Symbol	Min	Typ.	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			5	V	
Breakdown Voltage	V <sub>BR</sub>	5.6		11	V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			1	uA	V <sub>R</sub> = V <sub>RWM</sub>
Clamping Voltage	V <sub>C</sub>			13	V	I <sub>PP</sub> = 3.5A (8/20μs pulse)
Junction Capacitance	C <sub>J</sub>		3.5		pF	V <sub>R</sub> = 0V, f = 1MHz

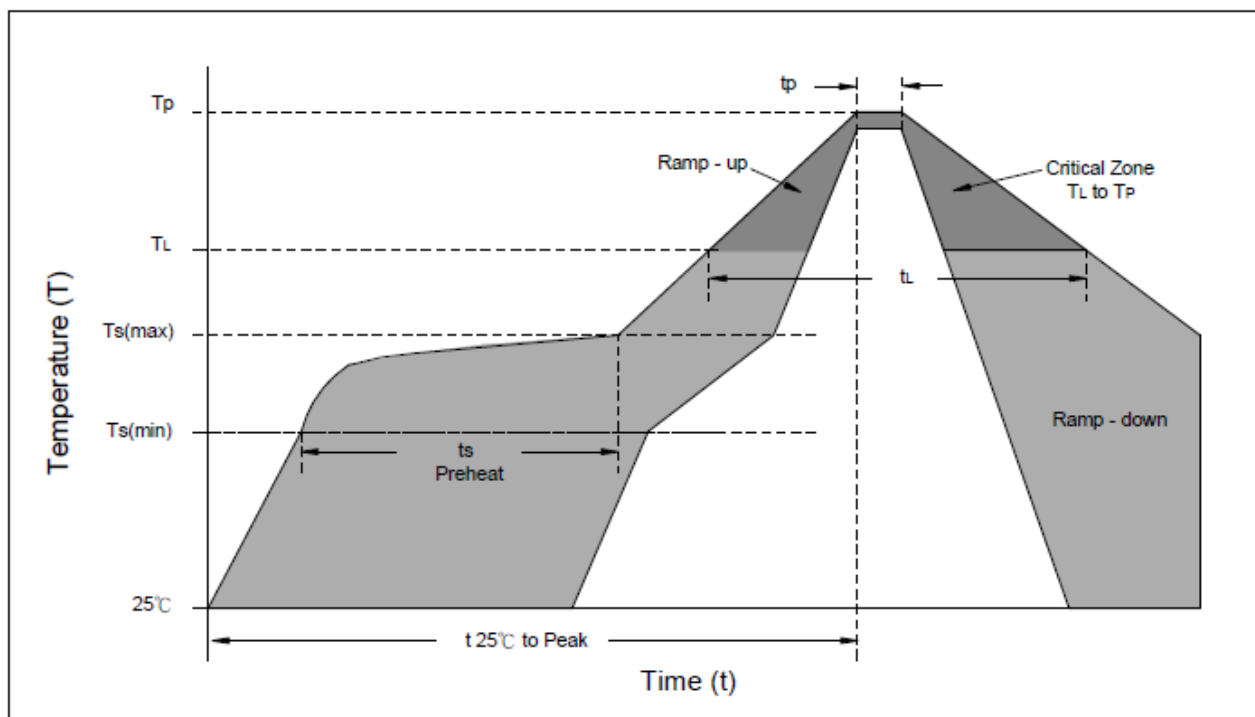
TEDSD8205150U						
Parameter	Symbol	Min	Typ.	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			5	V	
Breakdown Voltage	V <sub>BR</sub>	5.6			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			0.5	nA	V <sub>R</sub> = V <sub>RWM</sub>
Clamping Voltage	V <sub>C</sub>			12	V	I <sub>PP</sub> = 5A (8/20μs pulse)
Junction Capacitance	C <sub>J</sub>		15		pF	V <sub>R</sub> = 0V, f = 1MHz

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### ■ Soldering Recommendation



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

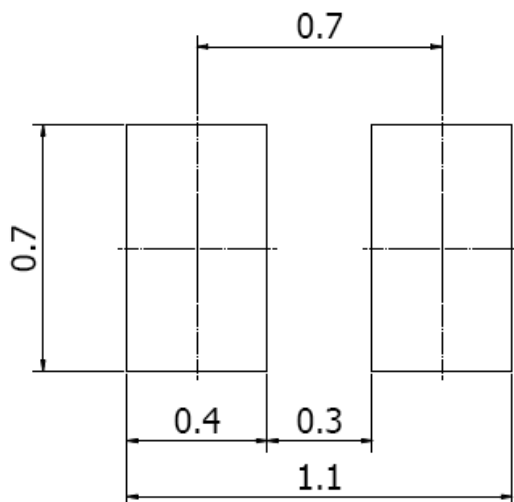
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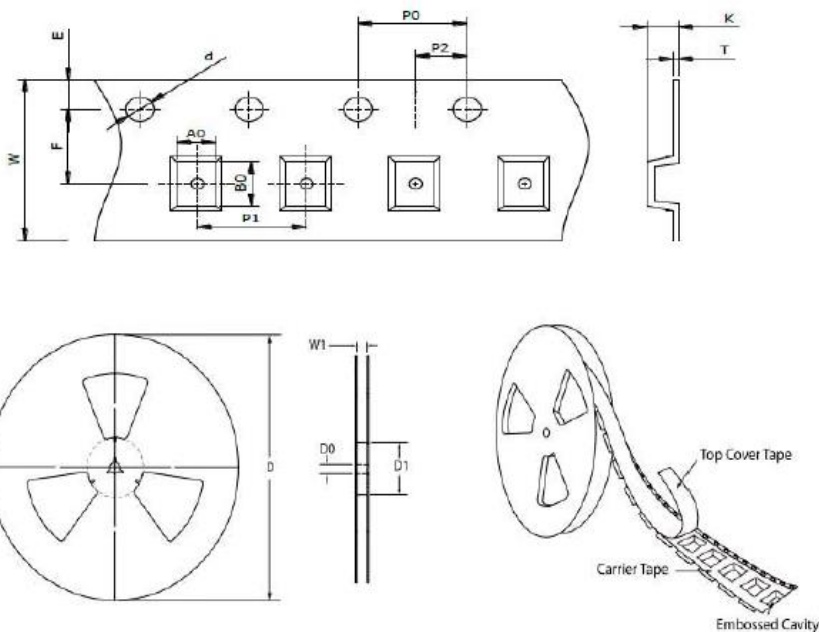
### ■ Recommended Soldering Pad Dimensions

Unit: mm



### ■ Packaging

Unit: 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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### ■ Quantity

MPQ: 10,000pcs

Package Type	Reel Size (inch)	Reel (Kpcs)
SOD-882	7"	10

### ■ Warehouse Storage Conditions of product

- Storage condition:
  1. Storage Temperature:  $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
  2. Relative Humidity:  $\leq 75\% \text{RH}$
  3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.