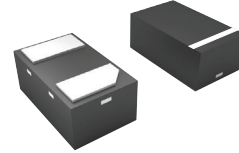


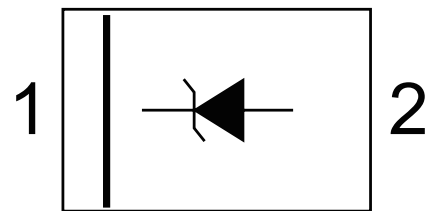
## 1. General description

The ESDHD05UF is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time. The ESDHD05UF suited for use in cellular phones, portable device, digital cameras, power supplies and many other portable applications.



## 2. Features and benefits

- Transient protection for high-speed data lines
- Peak pulse power 320W @ 8/20 $\mu$ s waveform
- IEC 61000-4-2 (ESD)  $\pm$ 30kV(air),  $\pm$ 30kV(contact)
- Protects one directional I/O line
- Low clamping voltage
- Low leakage current
- Meet MSL level1
- Halogen free and RoHS compliant



## 3. Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants
- Notebooks / Desktops / Servers
- Portable Instrumentation
- Peripherals
- Pagers



## 4. Ordering information

Type number	Package Name	Orderable part number	Packing method	Small packing quantity	Marking	Package issue date
ESDHD05UF	DFN1006	ESDHD05UFX	Tape and reel	10000	YB	13-Oct-2020

## 5. Absolute maximum ratings

In accordance with the Absolute Maximum Rating System (IEC 60134).

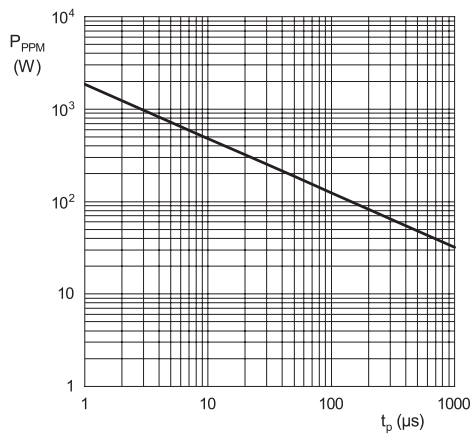
$T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified.

Symbol	Parameter	Conditions	Values	Unit
<b>Absolute maximum rating</b>				
$P_{PPM}$	peak pulse power	$t_p = 8/20\ \mu\text{s}$	320	W
$I_{PP}$	peak pulse current	$t_p = 8/20\ \mu\text{s}$	20	A
$V_{ESD}$	ESD per IEC 61000-4-2 (air) ESD per IEC 61000-4-2 (contact)		$\pm$ 30 $\pm$ 30	kV kV
$T_{stg}$	storage temperature range		-55 to 150	$^\circ\text{C}$
$T_j$	operating temperature range		-55 to 150	$^\circ\text{C}$

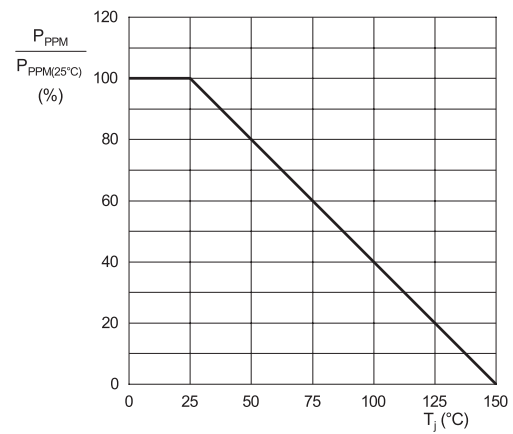
## 6. Characteristics

$T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified.

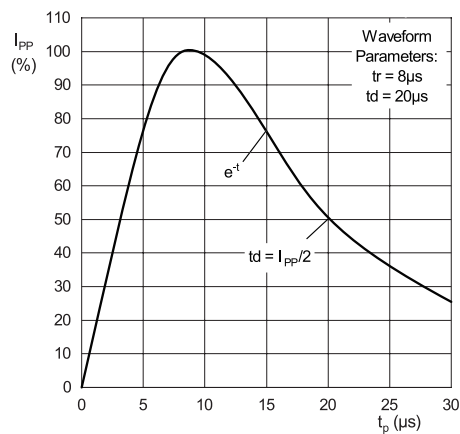
Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{RWM}$	Reverse Working Voltage	$I_R = 1\ \mu\text{A}$	-	-	5	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T = 1\ \text{mA}$	6	-	9.5	V
$I_R$	Reverse Leakage Current	$V_R = V_{RWM}$	-	-	100	nA
$V_C$	Clamping Voltage	$I_{PP} = 1\ \text{A}; t_p = 8/20\ \mu\text{s}$	-	-	10	V
		$I_{PP} = 20\ \text{A}; t_p = 8/20\ \mu\text{s}$	-	-	16	V
$C_j$	Junction Capacitance	$V_R = 0\ \text{V}; f = 1\ \text{MHz}$	-	150	-	pF



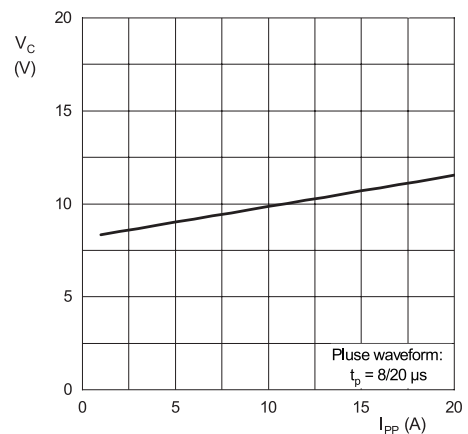
**Fig. 1. Pulse rating curve**



**Fig. 2. Peak pulse power derating curve**



**Fig. 3. Pulse waveform**



**Fig. 4. Clamping voltage vs Peak pulse current**

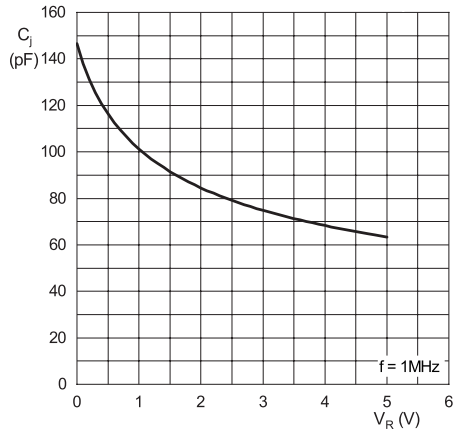


Fig. 5. Capacitance vs Reverse voltage

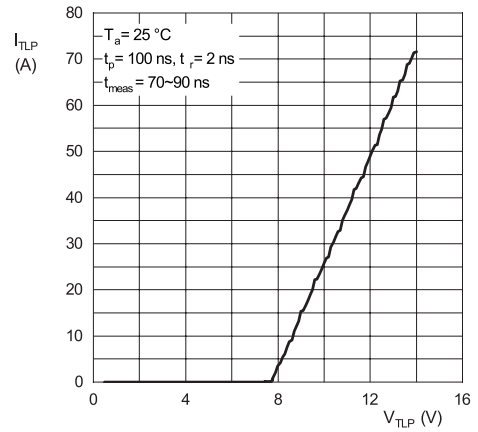


Fig. 6. TLP I-V Curve

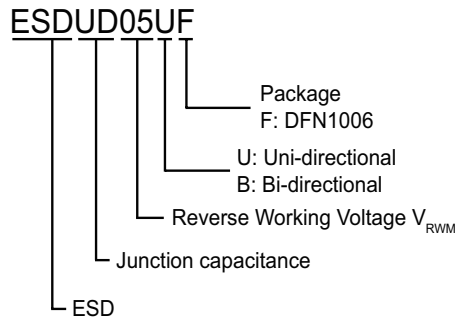
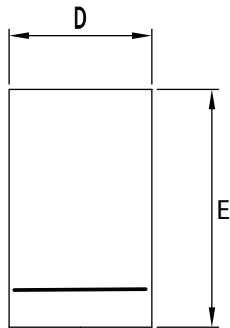


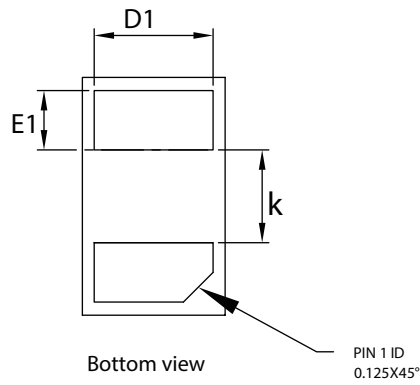
Fig. 7. Part numbering

## 7. Package outline

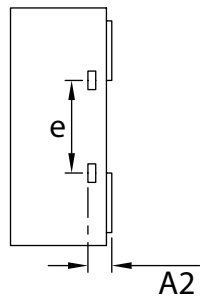
DFN1006



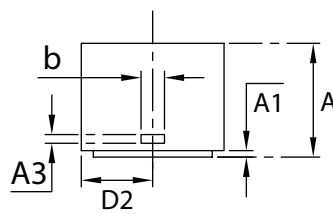
Top view



Bottom view

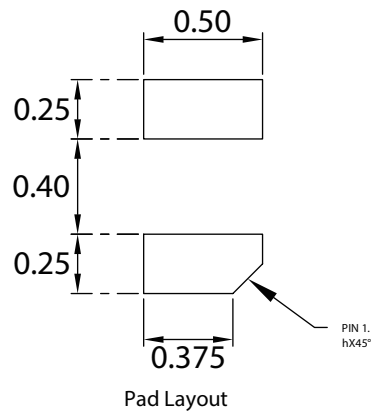


Side view



COMMON DIMENSIONS  
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	0.350	0.450	0.550
A1	0.000	0.020	0.050
A2	0.077	0.127	0.207
A3	0.013	0.063	0.113
b	0.070	0.120	0.200
D	0.500	0.60	0.700
D1	0.400	0.500	0.600
D2	0.200	0.300	0.400
E	0.900	1.000	1.100
E1	0.150	0.250	0.350
e	0.460	0.510	0.560
k	0.300	0.400	0.500



Pad Layout

**Note:**

1. Controlling dimension : in millimeters.
2. General tolerance: +/-0.05mm.
3. The pad layout is for reference purposes only.

## 8. Legal information

### Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

- [1] Please consult the most recently issued document before initiating or completing a design.
- [2] The term 'short data sheet' is explained in section "Definitions".
- [3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.ween-semi.com>.

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