

# ESDFN12AT

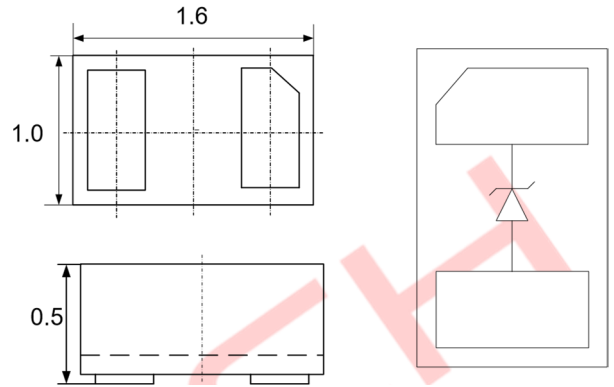
## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Power Dissipation-1200W

Reverse Stand-off Voltage-12V

### FEATURES

- ◆ For surface mount applications
- ◆ 1-Line Uni-directional TVS
- ◆ High peak pulse current capability
- ◆ Ultra low clamping voltage
- ◆ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30\text{kV}$   
Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-4 (EFT) 80A (5/50ns)
  - IEC61000-4-5 (Lightning) 20A - 90A (8/20 $\mu\text{s}$ )
- ◆ RoHS compliant



Package Dimension

Circuit and Pin

### MECHANICAL DATA

- ◆ Case: DFN1610-2
- ◆ Lead Finish: NiPdAu
- ◆ Case Material: "Green" Molding Compound
- ◆ Plastic package has UL Flammability classification 94V-0
- ◆ Moisture Sensitivity: Level 3 per J-STD-020

Dated: 07/2016  
Rev:1.0

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## ABSOLUTE MAXIMUM RATINGS

Ratings at  $T_A = 25^\circ\text{C}$  unless otherwise specified.

PARAMETER	SYMBOL	VALUE	UNIT
Peak Pulse Power Dissipation (8/20 $\mu\text{s}$ )	$P_{PPM}$	1200	W
ESD Voltage per IEC6100-4-2 Contact Air	$V_{ESD1}$ $V_{ESD2}$	$\pm 30$ $\pm 30$	kV
Operating Temperature Range	$T_J$	-55 to +125	$^\circ\text{C}$
Operating and Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

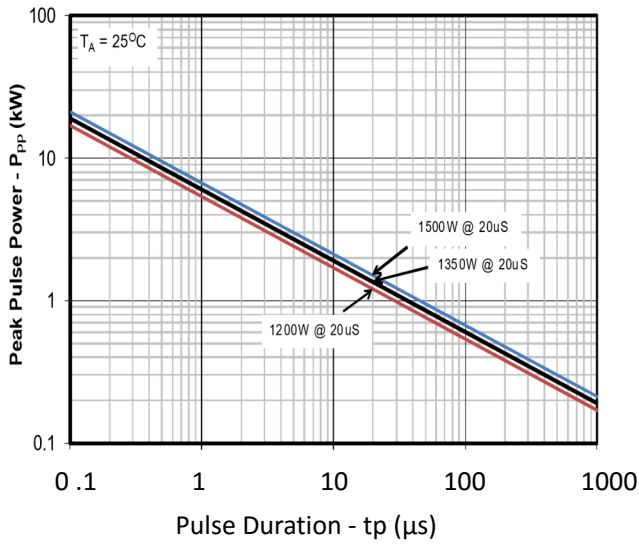
## ELECTRICAL CHARACTERISTICS at $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Reverse Working Voltage	$V_{RWM}$				12	V
Breakdown Voltage	$V_{(BR)}$	$I_T = 1\text{mA}$	12.6			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 12\text{V}$			0.1	$\mu\text{A}$
Forward Voltage	$V_F$	$I_F = 10$			1.2	V
Peak Pulse Current	$I_{PP}$	$t_p = 8/20\mu\text{s}$			64	A
Clamping Voltage	$V_C$	$I_{PP} = 10\text{A}$ (8 $\times$ 20 $\mu\text{s}$ pulse)			18	V
Clamping Voltage	$V_C$	$I_{PP} = 64\text{A}$ (8 $\times$ 20 $\mu\text{s}$ pulse)			25	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}, f = 1\text{MHz}$			500	pF

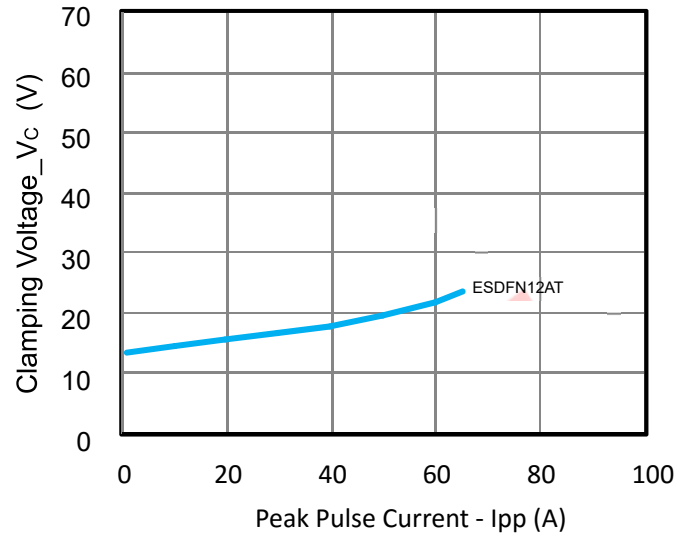
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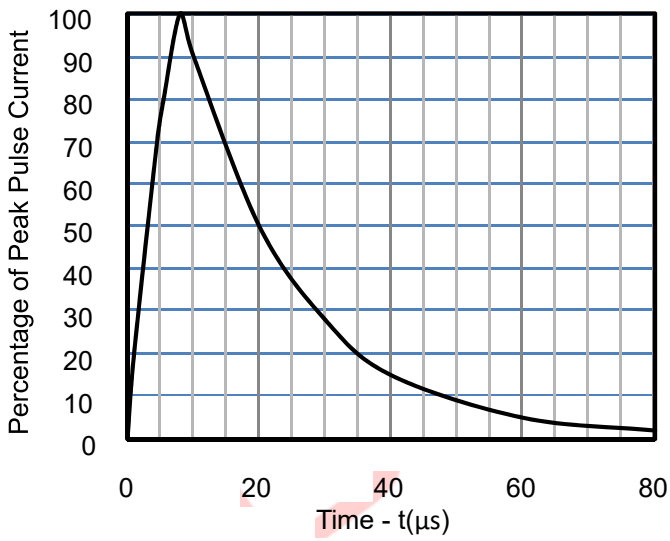
## RATINGS AND CHARACTERISTIC CURVES



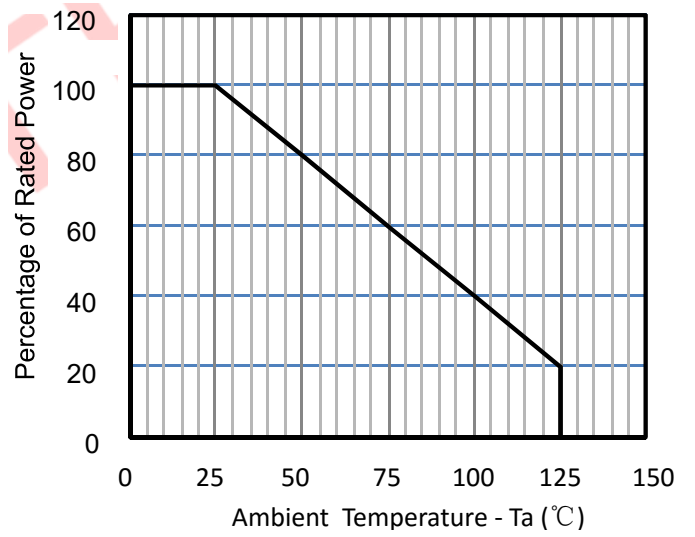
Peak Pulse Power — Pulse Duration



Clamping Voltage — Peak Pulse Current



8 X 20 us Pulse Waveform

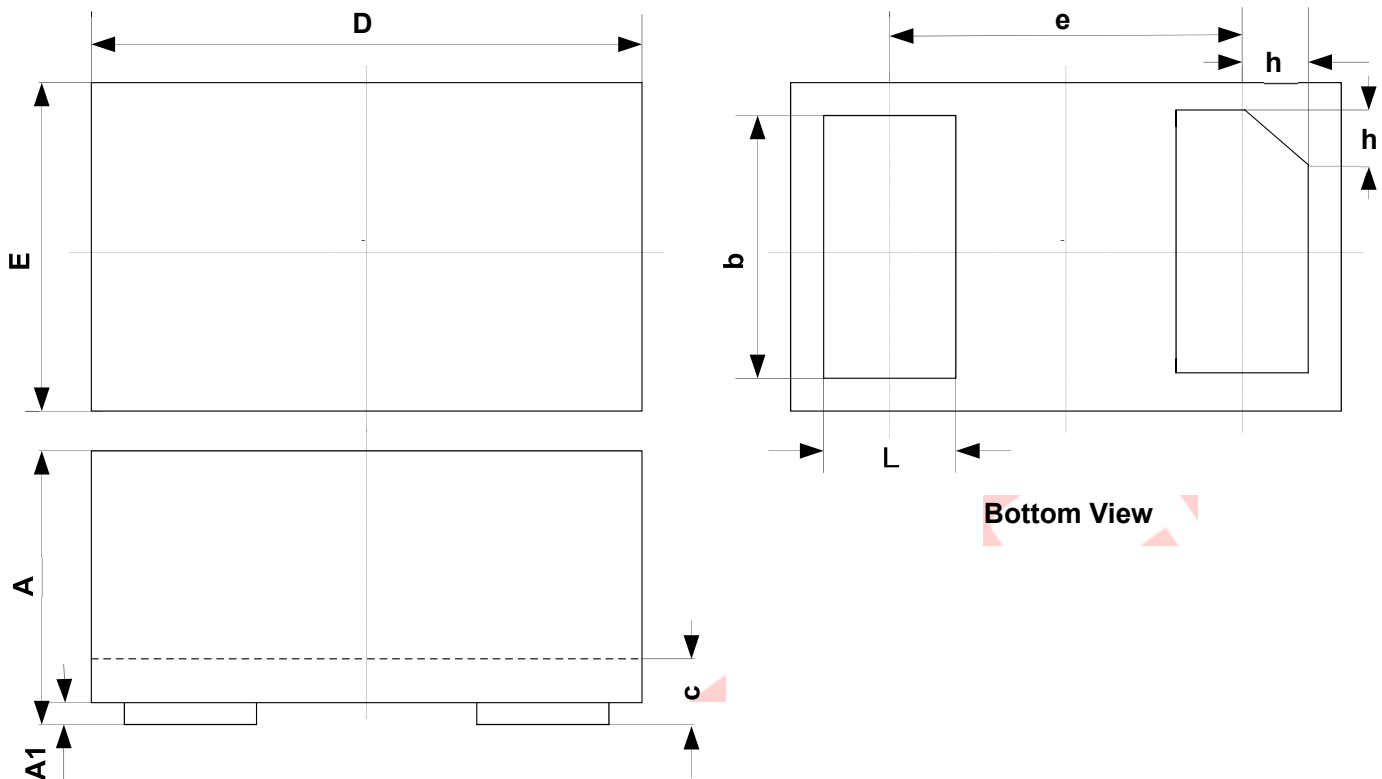


Power Derating Curve

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## PACKAGE OUTLINE

### DFN1610-2



Bottom View

### MECHANICAL DATA

UNIT		A	A1	D	E	L	b	c	e	h
mm	max	0.55	0.05	1.65	1.05	0.45	0.85	0.20	1.10	0.25
	min	0.45	-	1.55	0.95	0.35	0.75	0.10	BSC	0.15
inch	max	0.022	0.002	0.066	0.042	0.018	0.034	0.008	0.044	0.010
	min	0.018	-	0.062	0.038	0.014	0.030	0.004	BSC	0.006

### ORDERING INFORMATION

Device	Package	Shipping
ESDFN12AT	DFN1610-2	3,000/Tape & Reel (7 inches)

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