

ESD9P Series-HAF

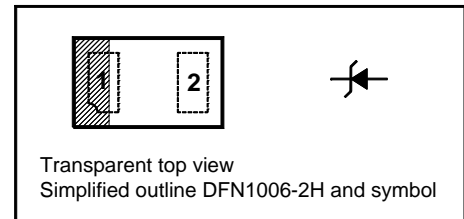
ESD Protection Diodes

Features

- Halogen and Antimony Free(HAF),
RoHS compliant

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



Absolute Maximum Ratings (at $T_a = 25^\circ\text{C}$ unless otherwise specified)

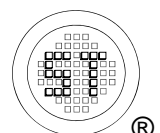
Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20 \mu\text{s}$)	P_{PK}	see Table 1	W
Peak Pulse Current ($t_p = 8/20 \mu\text{s}$)	I_{PP}	see Table 1	A
ESD (IEC 61000-4-2) Air Contact	V_{ESD}	± 30 ± 30	KV
Power Dissipation ¹⁾	P_D	150	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

Characteristics at $T_a = 25^\circ\text{C}$ ($V_F = 0.9 \text{ V Max. at } I_F = 10 \text{ mA}$)

Table 1

Type	Reverse Stand-off Voltage	Reverse Current	Breakdown Voltage		Clamping Voltage	Reverse Peak Pulse Current	Peak Power Dissipation	Capacitance		
	V_{RWM}	I_R at V_{RWM}	V_{BR}	at I_T	V_C at Max. I_{PP}	I_{PP}	$t_p = 8/20 \mu\text{s}$	C_j	at f	at V_R
	Max. (V)	Max. (μA)	Min. (V)	(mA)	Max. (V)	Max. (A)	Max. (W)	Typ. (pF)	(MHz)	(V)
ESD9P3V3	3.3	2.5	5	1	10.4	9.8	102	110	1	0
ESD9P5V0	5	1	6.2	1	12.3	8.7	107	65	1	0
ESD9P12	12	1	13.5	1	23.7	5.9	140	30	1	0



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Electrical Characteristic Curves

Fig 1. Pulse Waveform

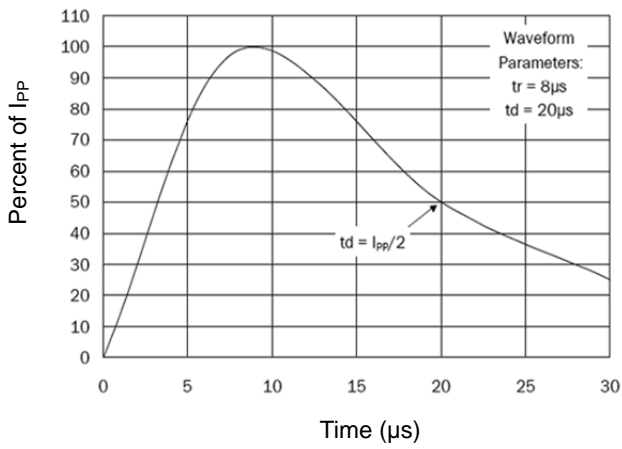


Fig 2. Power Derating Curve

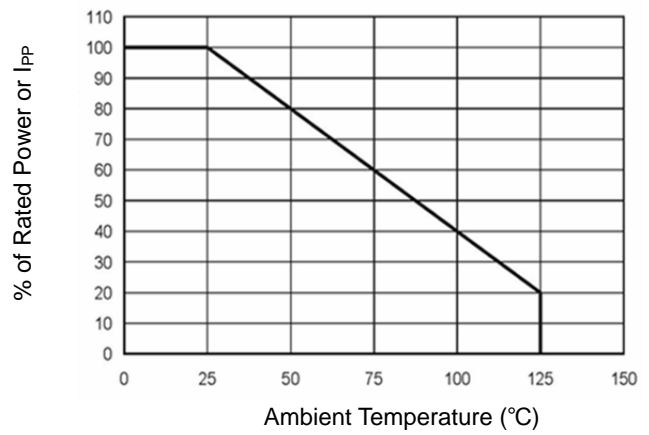


Fig 3. Clamping Voltage Curve

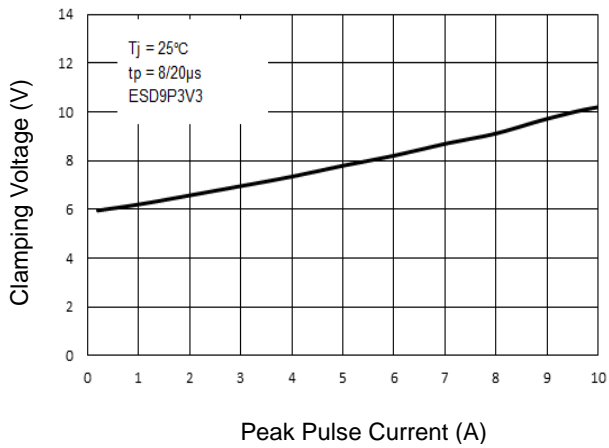


Fig 4. Clamping Voltage Curve

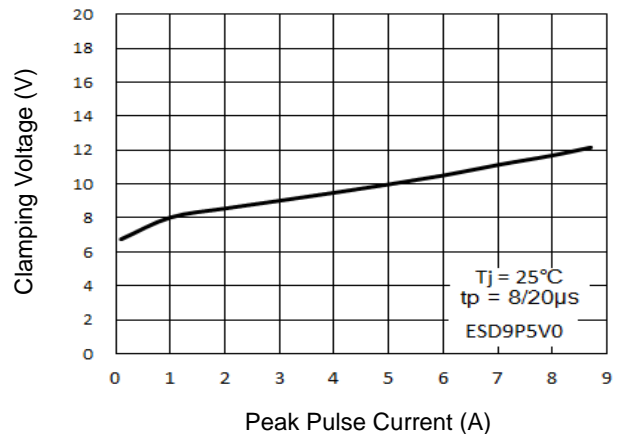


Fig 5. Clamping Voltage Curve

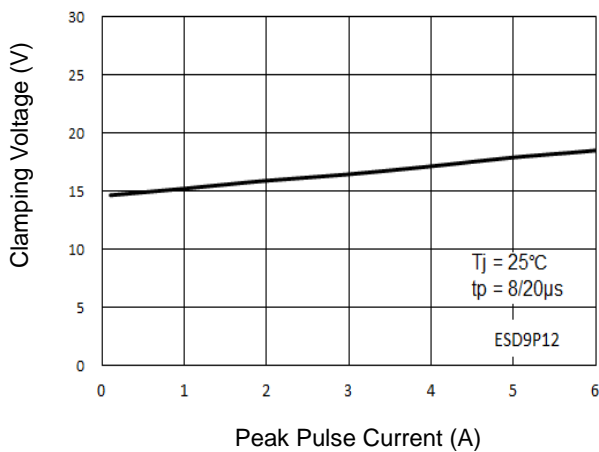
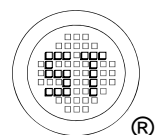
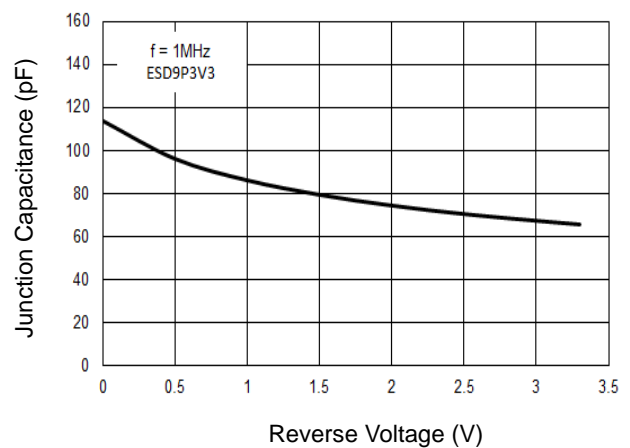


Fig 6. Junction Capacitance



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Electrical Characteristic Curves

Fig 7. Junction Capacitance

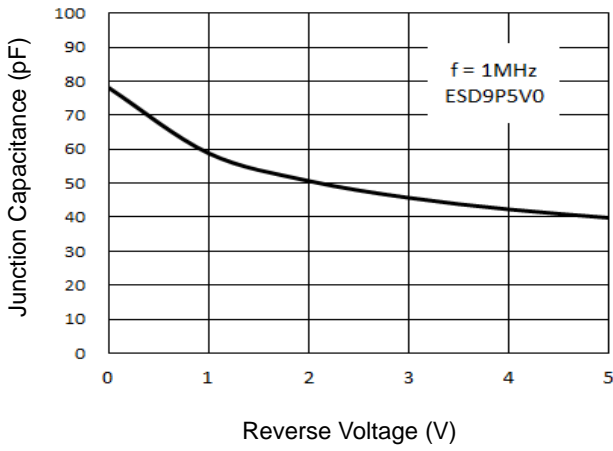


Fig 8. Junction Capacitance

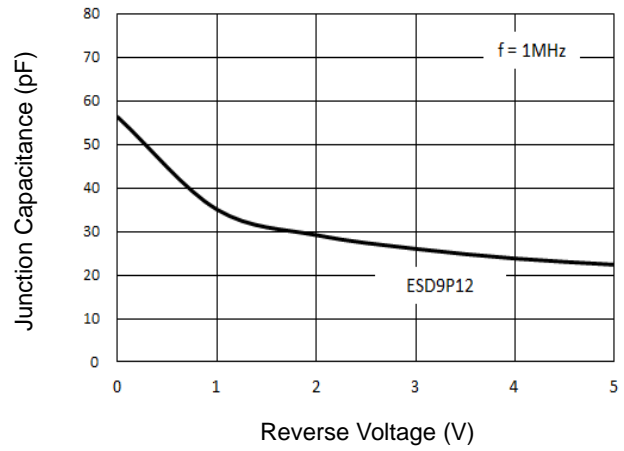


Fig. 9 TLP Curve

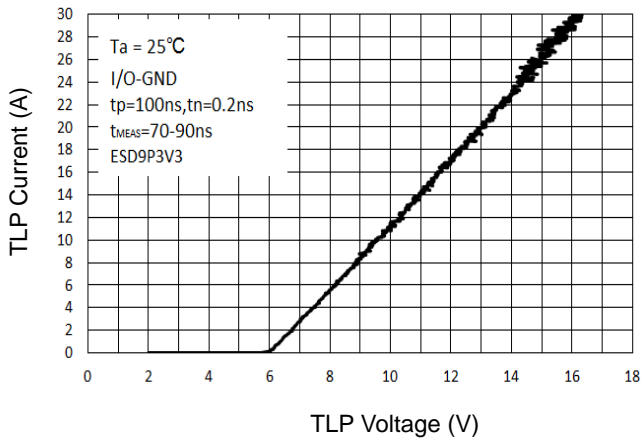


Fig. 10 TLP Curve

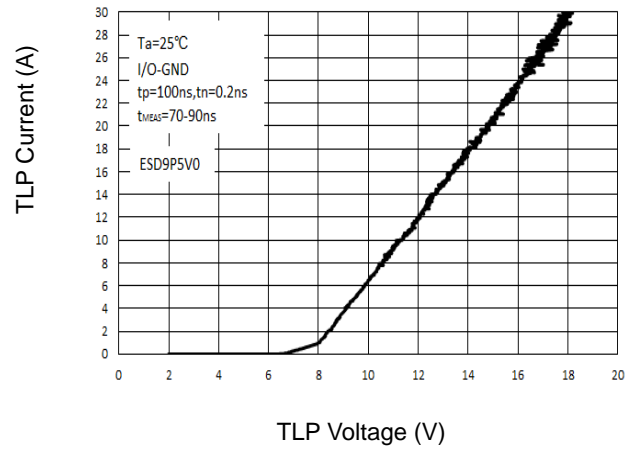
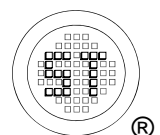
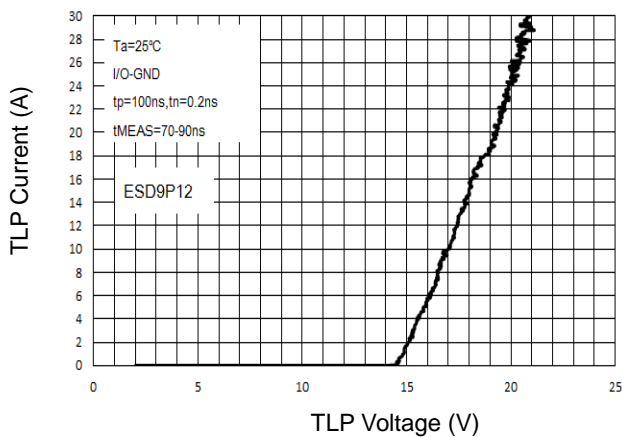


Fig. 11 TLP Curve

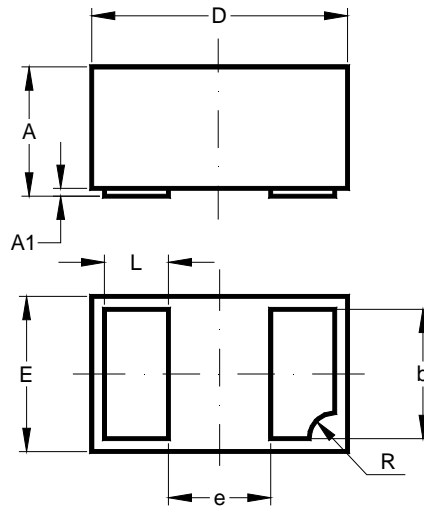


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PACKAGE OUTLINE

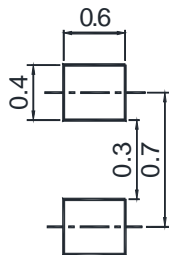
Plastic surface mounted package; 2 leads

DFN1006-2H



UNIT	A	A1	b	D	E	e	L	R
mm	0.51	0.05	0.55	1.05	0.65	0.4	0.3	0.15
	0.46	0	0.45	0.95	0.55		0.2	0.05

Recommended Soldering Footprint



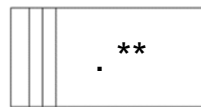
Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
DFN1006-2H	8	2 ± 0.1	0.079 ± 0.004	178	7	10,000

Marking information

" ** " = Part No.

Type	Marking	Type	Marking
ESD9P3V3	XA	ESD9P5V0	XB
ESD9P12	XC		



" III " = Cathode line

" • " = HAF (Halogen and Antimony Free)

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