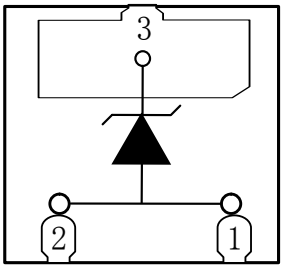
EOS/ESD Protection Diode in DFN-2020-3L

Features

- 5000 Watts peak pulse power (tp = 8/20μs)
- DFN-2020-3L package
- Unidirectional configurations
- Low clamping voltage
- Low leakage current
- Medium capacitance (Cj=1700pF typ.)
- Protection one data/power line to:
  IEC 61000-4-2 ±30kV contact ±30kV air
  IEC 61000-4-4 (EFT) 40A (5/50ns)
  IEC 61000-4-5 (Lightning) 240A (8/20μs)



Mechanical Data

- **Case:** DFN-2020-3L (plastic package).
  Lead free; RoHS compliant
- **Molding Compound Flammability Rating:**
  UL 94 V-0
- **Terminals:** High temperature soldering guaranteed:
  260 °C/10 sec. at terminals

Applications

- Power lines
- USB Vbus Industrial Electronics
- Industrial Electronics
- Microcontroller Input Protection
- Computer & Consumer Electronics
- Automotive and Telecommunication

Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power (T_P=8/20μS)	P_{PP}	5000	W
ESD contact/air discharge (IEC-61000-4-2)	V_{ESD}	30/30	kV
Peak Pulse Current (t_P = 8/20μS)	I_{PP}	240	A
Junction Temperature	T_J	-55 to +125	℃
Storage temperature	T_{STG}	-55 to +150	℃

Electrical Characteristics

(T_A = 25 °C unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse stand-off Voltage	V_{RWM}				7	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA		9		V
Reverse Leakage Current	I_R	V_R=7V			1	uA
Clamping Voltage (IEC 61000-4-5)	V_C	I_{PP} =50A			12.5	V
Clamping Voltage (IEC 61000-4-5)	V_C	I_{PP} =100A			15.5	V
Clamping Voltage (IEC 61000-4-5)	V_C	I_{PP} =240A			23	V
Junction Capacitance	C_J	V_R=0V, f=1MHz		1700		pF

Typical Characteristics (T_{amb} = 25 °C unless otherwise specified)

Fig.1 Peak Pulse Power Rating Curve

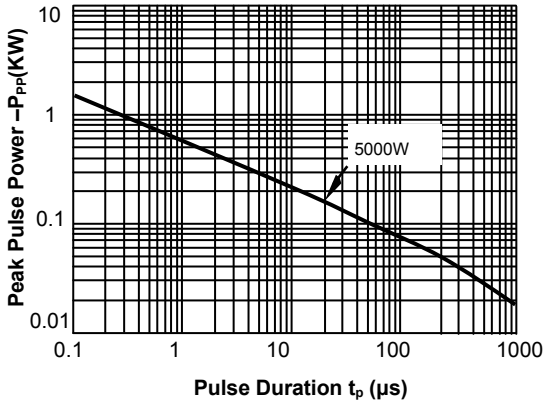


Fig.2 Pulse Derating Curve

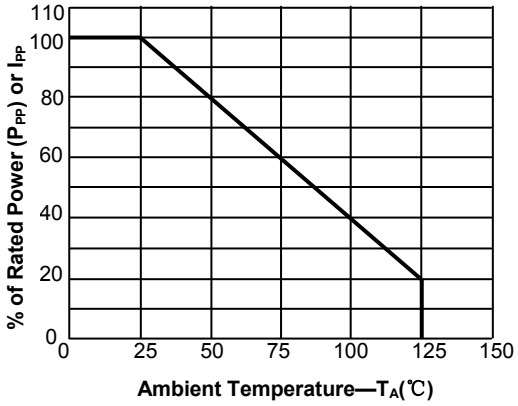


Fig.3 Pulse Waveform-8/20μs

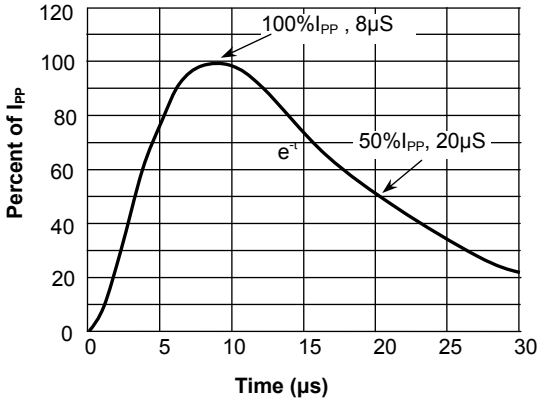
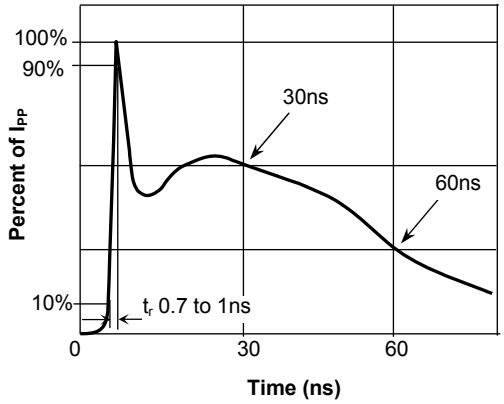
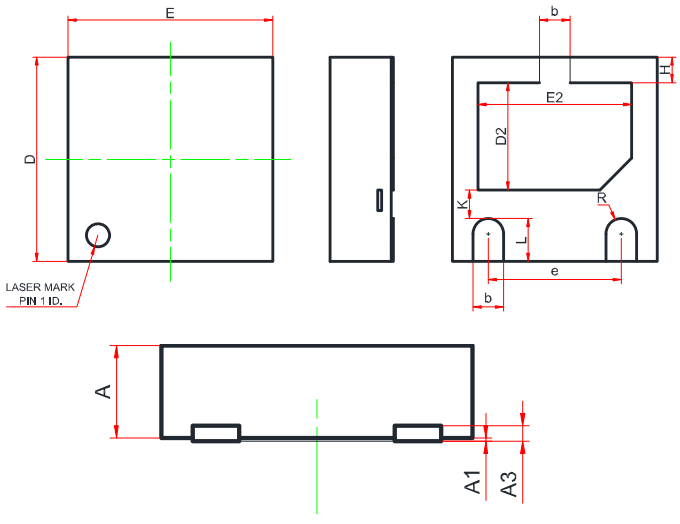


Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

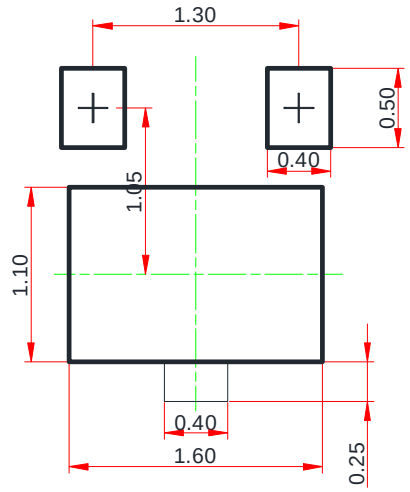


Package Dimensions

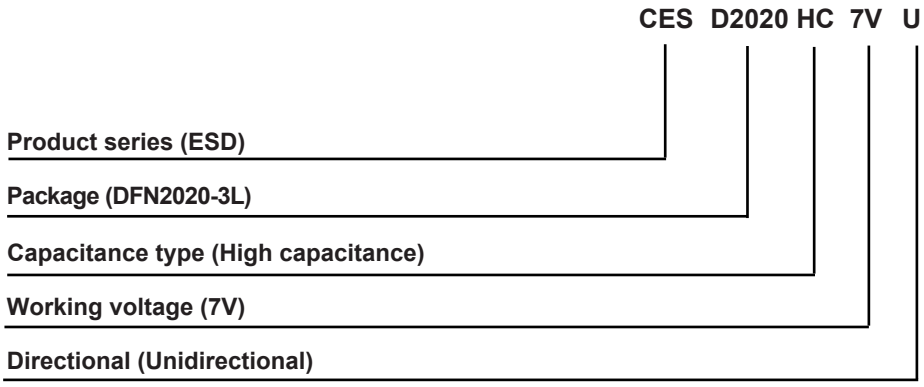


Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.51	0.55	0.60
A1	0.00	0.02	0.05
A3		0.15 REF.	
b	0.25	0.30	0.35
D	1.90	2.00	2.10
E	1.90	2.00	2.10
D2	0.85	1.00	1.10
E2	1.35	1.50	1.60
e	1.20	1.30	1.40
H	0.20	0.25	0.30
K	0.20	0.30	0.40
L	0.35	0.40	0.45
R	0.15	-	-

PAD Dimensions



Part number system



Ordering information

Order code	Marking	Package	Packaging option	Base quantity	Packaging specification
CESD2020HC7VU	3N07	DFN2020-3L	Tape and reel	3000pcs / reel	EIA STD RS-481

Revision history

Date	Revision	Changes
23-May-2012	1.0	Initial release

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