



ESD



TVS



TSS



MOV



GDT



PLED

MS1065-06F

Product specification

FEATURES

- Transient protection for high-speed data lines
IEC 61000-4-2(ESD) $\pm 20\text{KV}$ (Contact)
 $\pm 25\text{KV}$ (Air)
IEC 61000-4-4(EFT) 40A(5/50ns)
Cable Discharge Event (CDE)
- Package optimized for high-speed lines
- Small package (4.1mm*2.0mm*0.5mm)
- Protects six data lines and one Vcc line
- Low capacitance: 0.2pF (I/O to I/O)
- Low leakage current
- Low clamping voltage
- Each I/O pin can withstand over 1000 ESD strikes
- for $\pm 8\text{KV}$ contact discharge

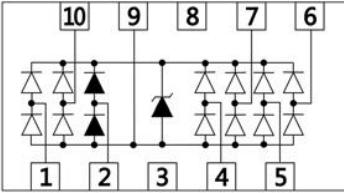
APPLICATIONS

- USB3.0
- HDMI1.4
- High Speed I/O Ports in any electronic product

MACHANICAL DATA

- DFN4120-10L package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranteed: $260^{\circ}\text{C}/10\text{s}$
- Reel size: 7 inch

Reference News

PACKAGE OUTLINE	CIRCUIT DIAGRAM	MARKING
 DFN4120-10L		

ABSOLUTE MAXIMUM RATING

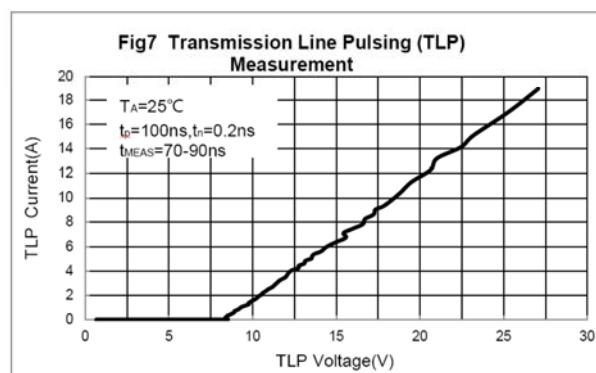
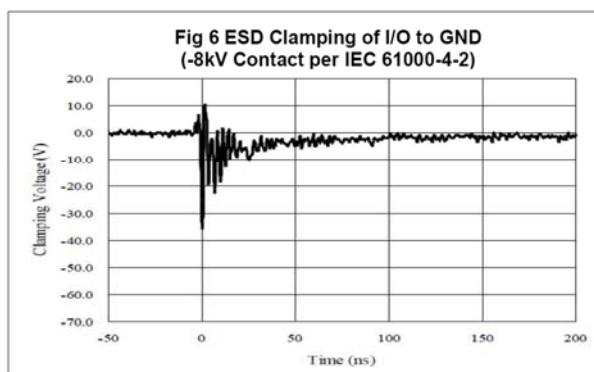
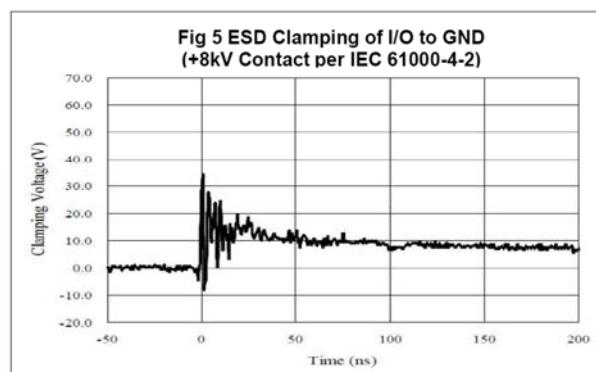
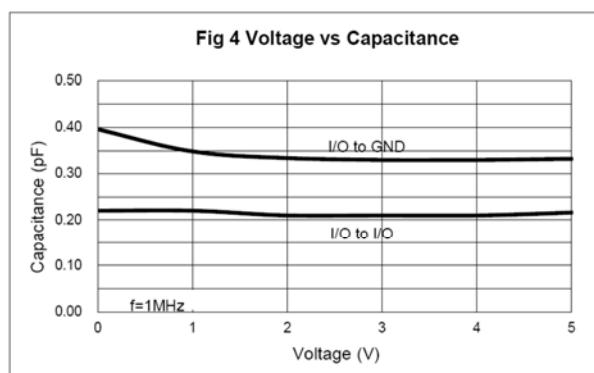
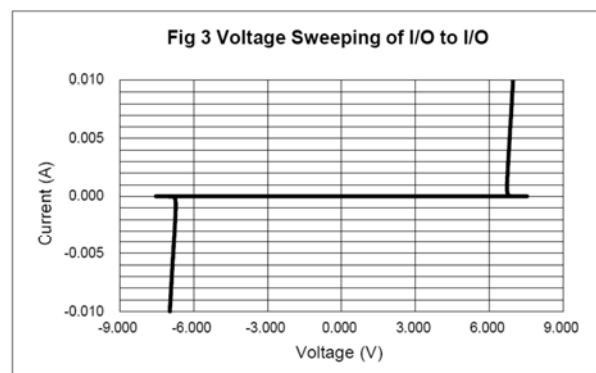
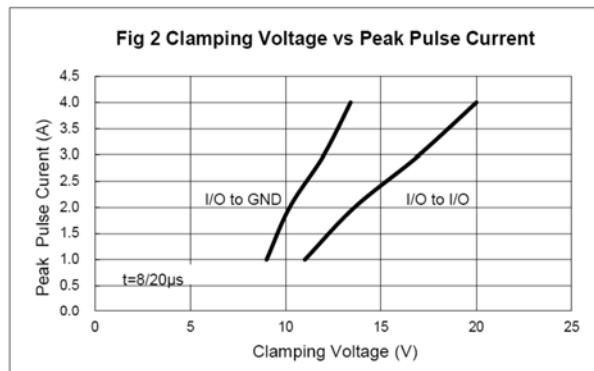
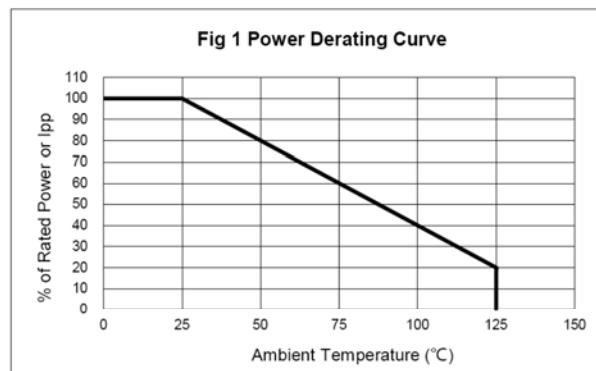
Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (8/20μs)	60	W
V_{ESD}	ESD per IEC 61000-4-2 (Contact) ESD per IEC 61000-4-2 (Air)	±20 ±25	kV
T_{OPT}	Operating Temperature	-55/+125	°C
T_{STG}	Storage Temperature	-55/+150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C)

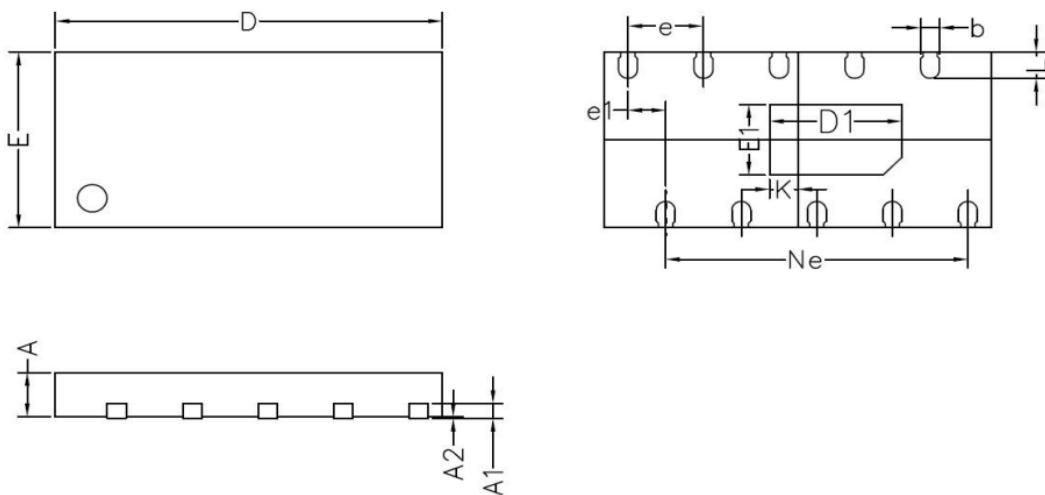
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage	Any I/O or Vcc pin to GND			5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_r = 1\text{mA}$ Any I/O or Vcc pin to GND	6.0		9.0	V
I_r	Reverse Leakage Current	$V_{RWM} = 5\text{V}$ Any I/O or Vcc pin to GND			1.0	μA
V_c	Clamping Voltage	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$ Any I/O pin to GND			10	V
		$I_{PP} = 4\text{A}$, $t_p = 8/20\mu\text{s}$ Any I/O pin to GND			15	V
		$I_{PP} = 8\text{A}$, $t_p = 8/20\mu\text{s}$ Vcc pin to GND			15	V
V_{CTLP}	TLP Clamping Voltage	$I_{PP} = 8\text{A}$ IEC61000-4-2 Level 2 equivalent ($\pm 4\text{kV}$ Contact, $\pm 8\text{kV}$ Air) Between I/O and GND		16		V
		$I_{PP} = 16\text{A}$ IEC61000-4-2 Level 4 equivalent ($\pm 8\text{kV}$ Contact, $\pm 16\text{kV}$ Air) Between I/O and GND		23		V
C_{ESD}	Parasitic Capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$ Between I/O and I/O		0.2	0.3	pF
		$V_R = 0\text{V}$, $f = 1\text{MHz}$ Between I/O and GND		0.4	0.5	pF
		$V_R = 0\text{V}$, $f = 1\text{MHz}$ Between Vcc and GND		0.80		pF

Note: I/O are pin 1,4,5,6,7,10; Vcc is pin 2; GND are pin9 and heatsink.

ELECTRICAL CHARACTERISTICS



DFN4120-10L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions (mm)		
	Min.	Nom.	Max.
A	0.45	0.50	0.55
A1	0.15 REF		
A2	0.00	0.02	0.05
D	4.05	4.10	4.15
E	1.95	2.00	2.05
D1	1.35	1.40	1.45
E1	0.75	0.80	0.85
L	0.25	0.30	0.35
b	0.15	0.20	0.25
e	0.80 BSC		
Ne	3.20 BSC		
e1	0.40 BSC		
K	0.25	0.30	0.35

REEL SPECIFICATION

P/N	PKG	QTY
MS1065-06F	DFN4120-10L	3000

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