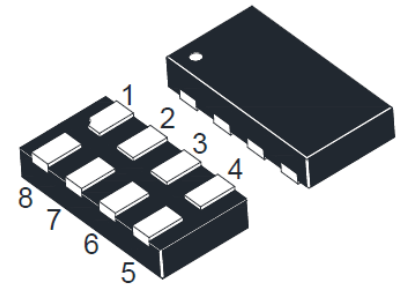




FEATURES

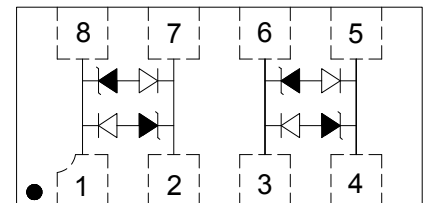
- ◇ Protects two line pairs
- ◇ Low operating voltage: 3.3V
- ◇ Low capacitance: 1.0pF maximum
- ◇ 350W peak pulse power per line ($t_p=8/20\mu s$)
- ◇ Low operating and clamping voltage
- ◇ Low leakage current
- ◇ RoHS compliant



DFN2010-8L

MAIN APPLICATIONS

- ◇ 10/100/1000 ethernet
- ◇ Integrated magnetics /RJ-45 connectors
- ◇ LAN/WAN equipment
- ◇ Security cameras
- ◇ Industrial controls
- ◇ Notebooks & desktop computers



PROTECTION SOLUTION TO MEET

- ◇ IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
- ◇ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◇ IEC61000-4-5 (Lightning) 20A (8/20 μs)

MECHANICAL CHARACTERISTICS

- ◇ DFN2010-8L package
- ◇ Molding compound flammability rating: UL 94V-0
- ◇ Quantity per reel: 3,000pcs
- ◇ Lead finish: lead free
- ◇ Marking code: LC33

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	350	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 30 ± 30	kV
Lead soldering temperature	T_L	260 (10 sec.)	$^{\circ}\text{C}$
Operating junction temperature range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V_{RWM}				3.3	V
Reverse breakdown voltage	V_{BR}	$I_T=1\text{mA}$	3.5	4.2		V
Reverse leakage current	I_R	$V_{RWM}=3.3\text{V}$		0.01	0.1	μA
Clamping voltage	V_C	$I_{PP}=1\text{A}$, $t_P=8/20\mu\text{s}$		6	7	V
		$I_{PP}=12\text{A}$, $t_P=8/20\mu\text{s}$		11	15	
		$I_{PP}=20\text{A}$, $t_P=8/20\mu\text{s}$		15	18	
Junction capacitance	C_J	$V_{RWM}=0\text{V}$, $f=1\text{MHz}$, pins 1, 8 to 2, 7 and pins 3, 6 to 4, 5		0.6	1.0	pF

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

FIG.1: V- I curve characteristics (Bi-directional)

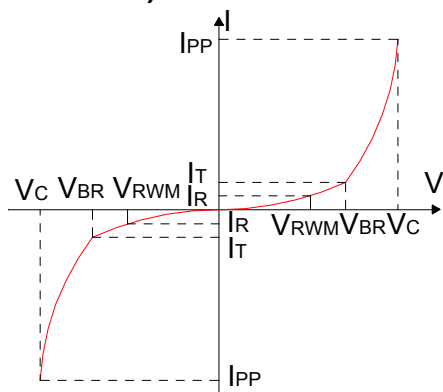


FIG.2: Pulse waveform (8/20 μs)

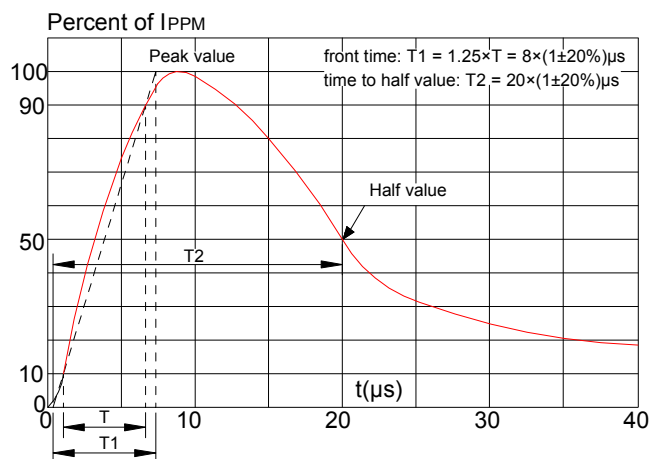


FIG.3: Pulse derating curve

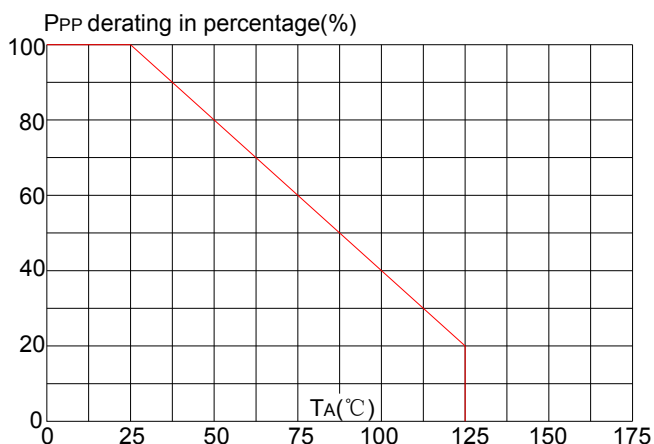
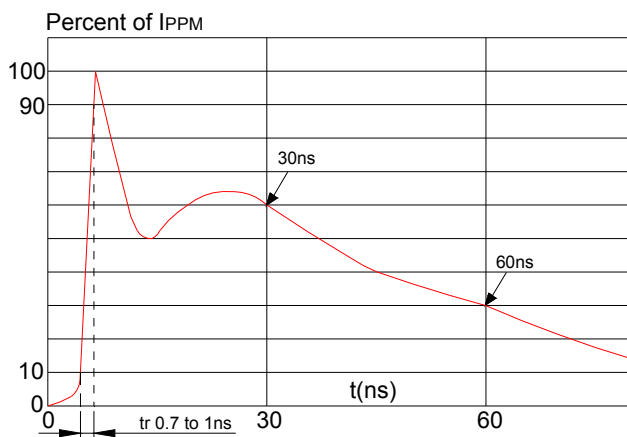
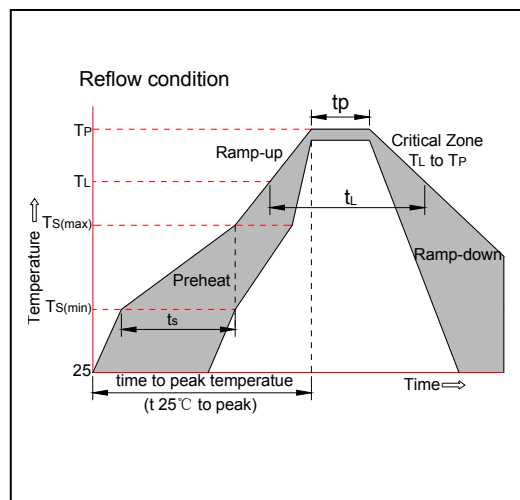


FIG.4: ESD clamping (30kV contact)

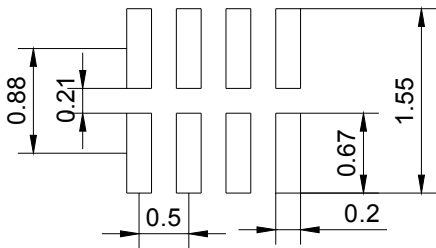
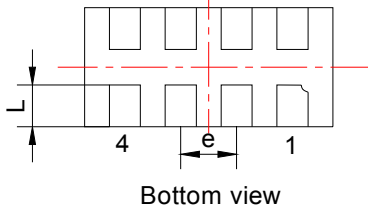
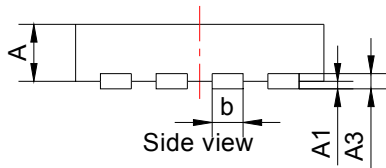
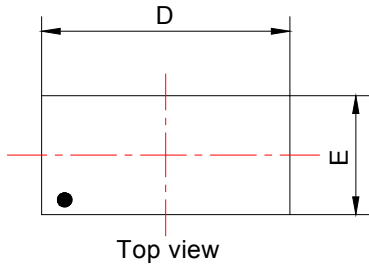


SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max ($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature (T_L) (Liquidus)	+217°C
	-Temperature (t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



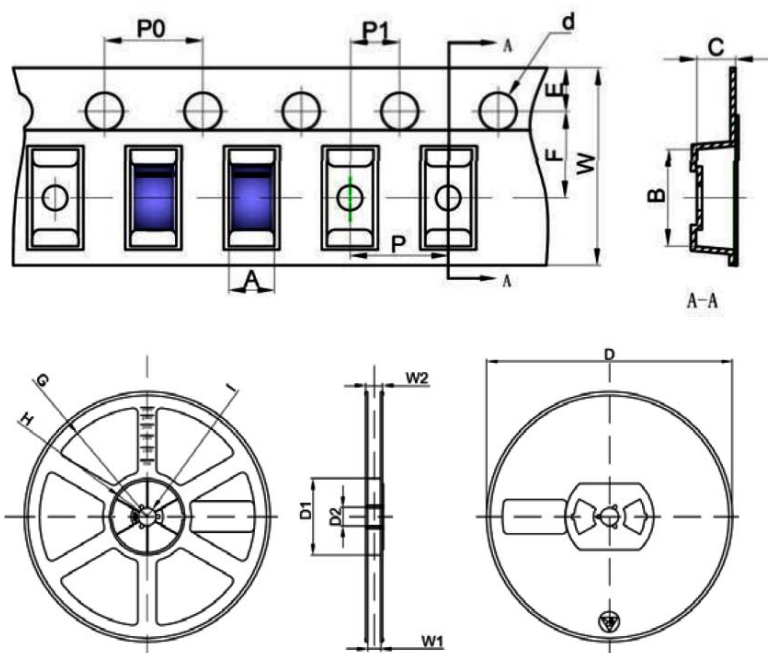
PACKAGE MECHANICAL DATA



Recommended soldering footprint(mm)

Symbol	Millimeter			Inches		
	Min	Typ	Max	Min	Typ	Max
A	0.46	0.48	0.51	0.018	0.019	0.020
A1	0.00	0.002	0.05	0.000	0.000	0.002
A3	0.127typ.			0.005 typ.		
b	0.20	0.20	0.30	0.008	0.008	0.012
D	1.90	2.00	2.10	0.075	0.079	0.083
E	0.90	1.00	1.10	0.035	0.039	0.043
e	0.50typ.			0.020typ.		
L	0.32	0.36	0.43	0.013	0.014	0.017

TAPE AND REEL INFORMATION-DFN2010-8L



Symbol	Millimeters	Inches
	Typ	Typ
A	1.12	0.044
B	2.20	0.087
C	0.63	0.025
d	Φ1.50	Φ0.059
D	Φ178	7.008
D1	54.40	2.142
D2	13.00	0.512
E	1.75	0.069
F	3.50	0.138
G	R78.00	3.071
H	R25.60	1.008
I	R6.50	0.256
P0	4.00	0.157
P	4.00	0.157
P1	2.00	0.079
W	8.00	0.315
W1	9.50	0.374
W2	12.30	0.484

ORDERING INFORMATION

PART No.	Package	Quantity Per Reel (PCS)	Reel Size
JEB3312T	DFN2010-8L	3,000	7 Inch

MARKING CODE

Part Number	Marking Code
JEB3312T	

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