



### FEATURES

- ✧ Solid-state silicon-avalanche technology
- ✧ Up to four I/O lines of protection
- ✧ Low operating voltage
- ✧ Ultra low capacitance
- ✧ Low clamping voltage
- ✧ Low leakage current
- ✧ RoHS compliant

### MAIN APPLICATIONS

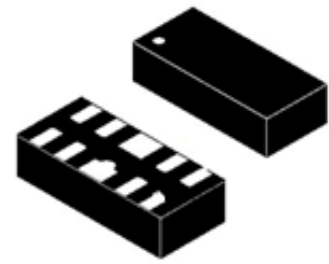
- ✧ Digital visual interface(DVI)
- ✧ Display port TM interface
- ✧ MDDI ports
- ✧ PCI express
- ✧ SATA interfaces
- ✧ High definition multi-media interface(HDMI)

### PROTECTION SOLUTION TO MEET

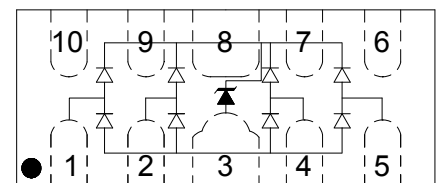
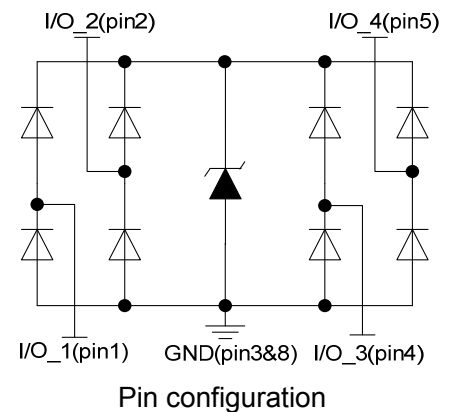
- ✧ IEC61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 3.5A (8/20 $\mu\text{s}$ )

### MECHANICAL CHARACTERISTICS

- ✧ DFN2510-10L package
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Quantity per reel: 3,000pcs
- ✧ Lead finish: lead free
- ✧ Marking code: 5R2P



DFN2510-10L



Top view

**ABSOLUTE MAXIMUM RATINGS** (T<sub>A</sub>=25°C, RH=45%-75%, unless otherwise noted)

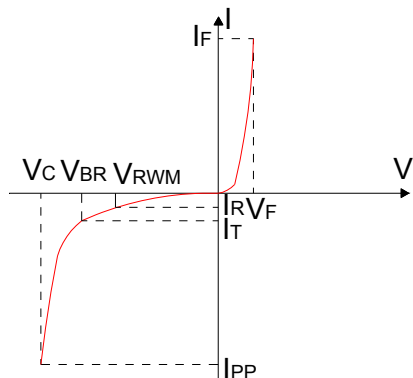
Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20μs waveform	P <sub>PP</sub>	100	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V <sub>ESD</sub>	+/- 15 +/- 8	kV
Lead soldering temperature	T <sub>L</sub>	260 (10 sec.)	°C
Operating junction temperature range	T <sub>J</sub>	-55 to +125	°C
Storage temperature range	T <sub>STG</sub>	-55 to +150	°C

**ELECTRICAL CHARACTERISTICS** (T<sub>A</sub>=25°C)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V <sub>RWM</sub>	I/O to GND			5.0	V
Reverse breakdown voltage	V <sub>BR</sub>	I/O to GND@ I <sub>T</sub> =1mA	6.0	7.5	9.0	V
Reverse leakage current	I <sub>R</sub>	I/O to GND @V <sub>RWM</sub> =5V		0.1	1.0	μA
Clamping voltage	V <sub>C</sub>	I <sub>PP</sub> =1A, t <sub>p</sub> =8/20μs		9	10	V
		I <sub>PP</sub> =3.5A, t <sub>p</sub> =8/20μs		11	12	V
Junction capacitance	C <sub>J</sub>	V <sub>RWM</sub> =0V, f=1MHz I/O pin to GND		0.5	0.65	pF
		V <sub>RWM</sub> =0V, f=1MHz Between I/O pins		0.25	0.4	pF

**RATINGS AND V-I CHARACTERISTICS CURVES** (T<sub>A</sub>=25°C, unless otherwise noted)

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



**FIG.2: Pulse waveform (8/20μs)**

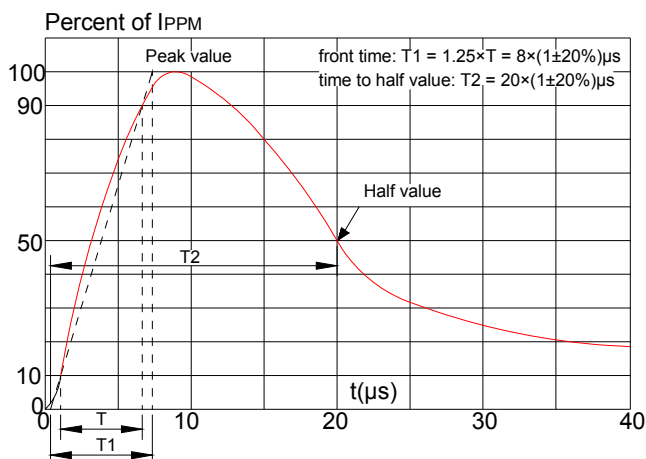


FIG.3: Pulse derating curve

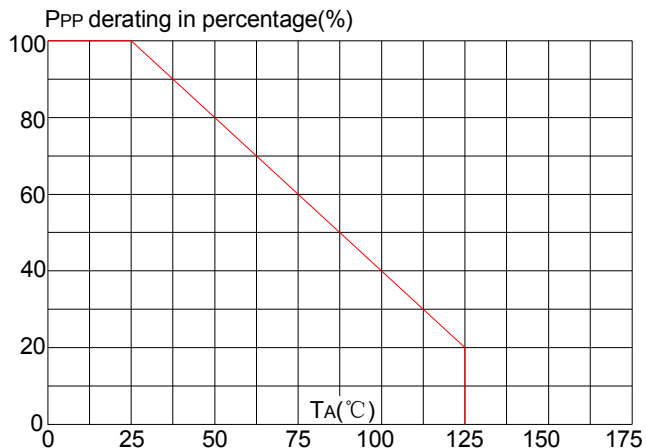
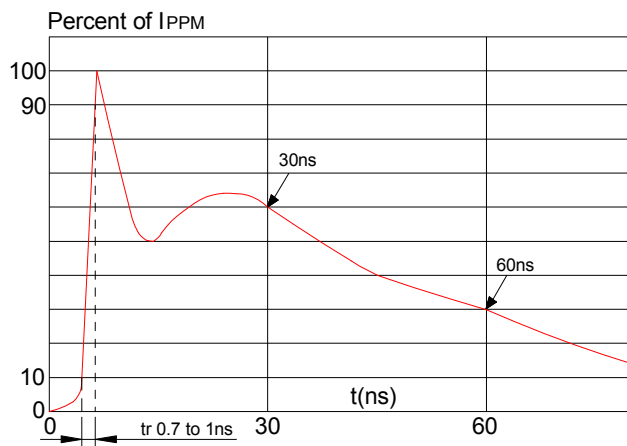
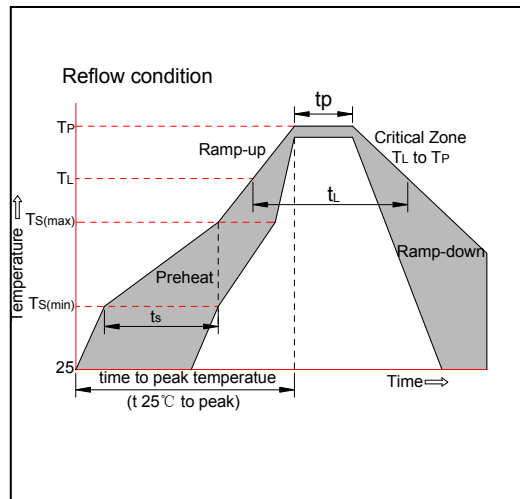


FIG.4: ESD clamping (8KV contact)

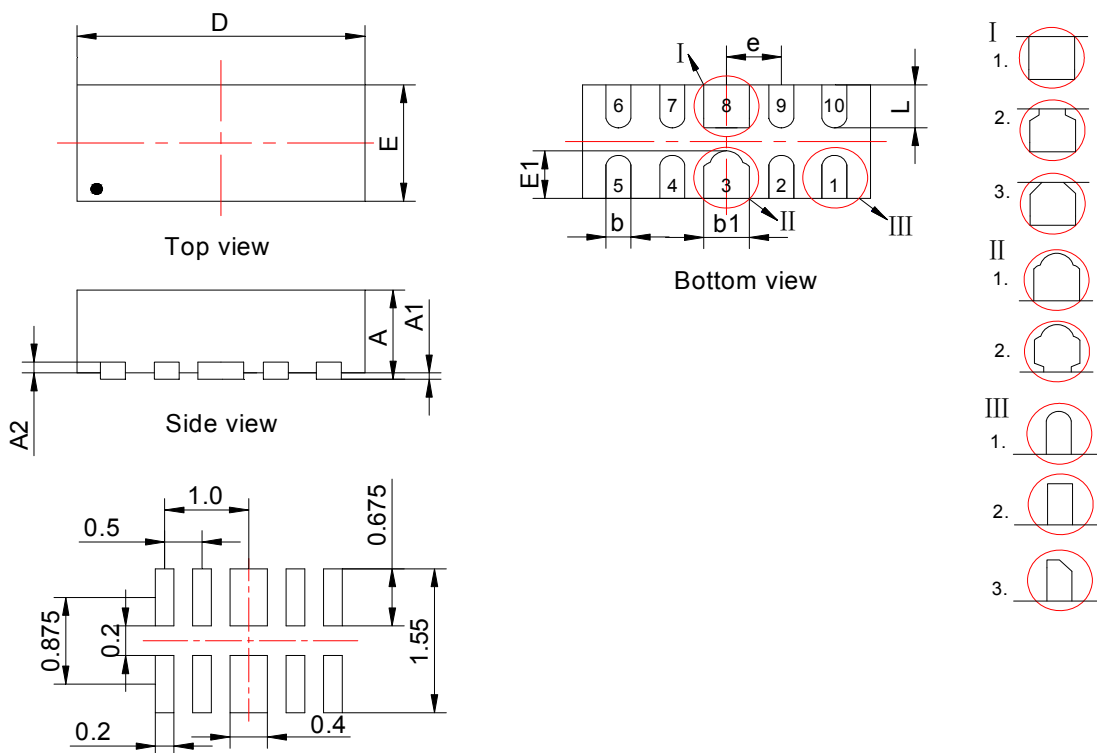


SOLDERING PARAMETERS

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



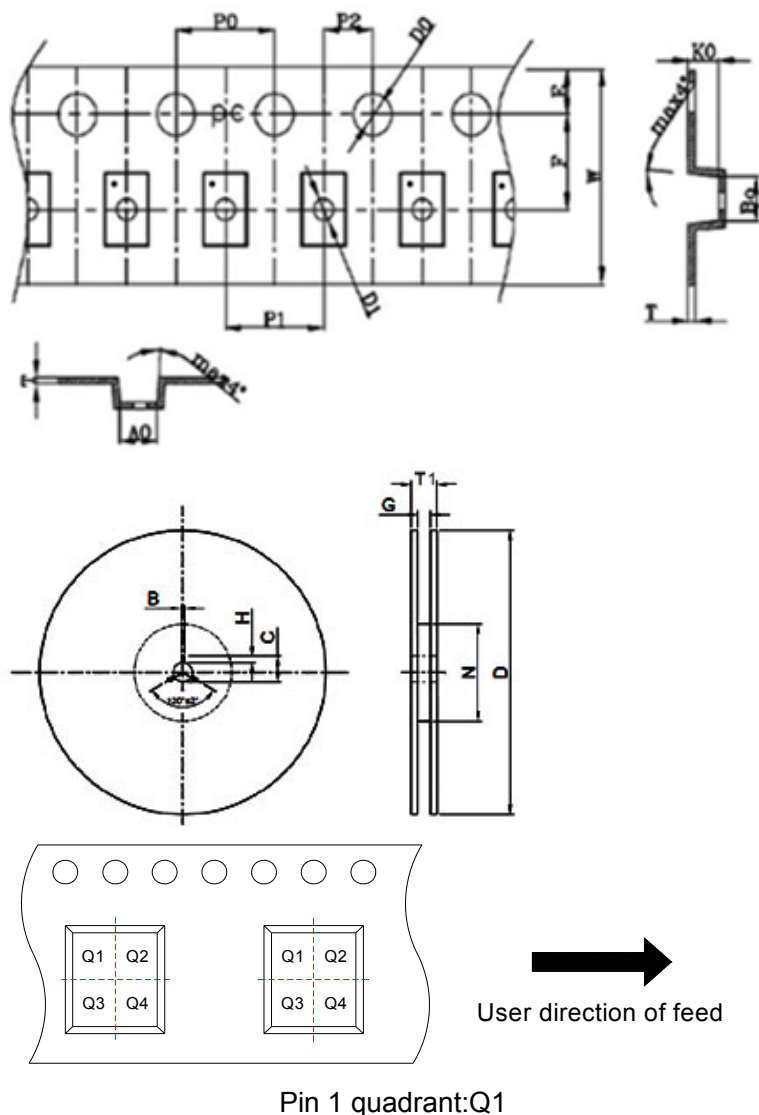
**PACKAGE MECHANICAL DATA**



Recommended soldering footprint

Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.46	0.53	0.60	0.018	0.021	0.024
A1	0.00	0.02	0.05	0.000	0.001	0.002
A2	0.15Ref.			0.006Ref.		
b	0.15	0.20	0.25	0.006	0.008	0.010
b1	0.35	0.40	0.45	0.014	0.016	0.018
D	2.40	2.50	2.60	0.094	0.098	0.102
E	0.90	1.00	1.10	0.035	0.039	0.043
E1	0.30	0.40	0.56	0.012	0.016	0.022
e	0.50BSC			0.020BSC		
L	0.30	0.40	0.45	0.012	0.016	0.018

**TAPE AND REEL INFORMATION-DFN2510-10L**

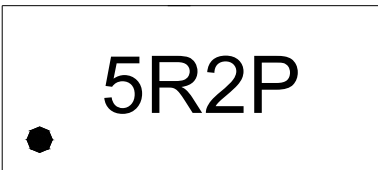


Symbol	Dimensions	
	Millimeters	Inches
	Typ.	Typ.
A0	1.20	0.047
B0	2.75	0.108
K0	0.70	0.028
P0	4.00	0.157
P1	4.00	0.157
P2	2.00	0.079
T	0.20	0.008
E	1.75	0.069
F	3.50	0.138
D0	1.55	0.061
D1	0.60	0.024
W	8.0	0.315
B	2.0	0.079
H	4.0	0.157
C	13.0	0.512
G	8.4	0.331
T1	14.9(max)	0.587(max)
N	60.0	2.362
D	178.0	7.000

**ORDERING INFORMATION**

PART No.	PACKAGE TYPE	QUANTITY(PCS) REEL	DESCRIPTION
JEU0524P	DFN2510-10L	3,000	7 Inch

**MARKING CODE**

Part Number	Marking Code
JEU0524P	

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