



### FEATURES

- ◇ 4500 Watts peak pulse power ( $t_P=8/20\mu s$ )
- ◇ Low leakage current
- ◇ Low clamping voltage
- ◇ Solid-state silicon-avalanche technology
- ◇ RoHS compliant

### MAIN APPLICATIONS

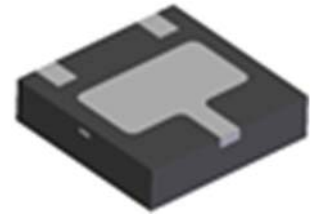
- ◇ Power lines
- ◇ Personal digital assistants (PDA's)
- ◇ Microprocessors based equipment
- ◇ Notebooks, desktops, and servers
- ◇ Cell phone handsets and accessories
- ◇ Portable electronics
- ◇ Peripherals

### PROTECTION SOLUTION TO MEET

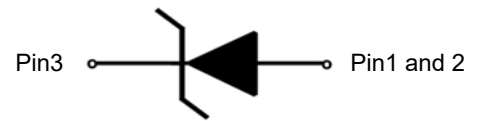
- ◇ IEC61000-4-2 (ESD)  $\pm 30kV$  (air),  $\pm 30kV$  (contact)
- ◇ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◇ IEC61000-4-5 (Lightning) 180A (8/20 $\mu s$ )

### MECHANICAL CHARACTERISTICS

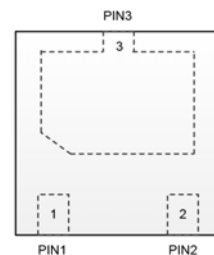
- ◇ DFN2x2-3L package
- ◇ Molding compound flammability rating: UL 94V-0
- ◇ Quantity per reel: 3,000pcs
- ◇ Lead finish: lead free
- ◇ Marking code: T12



DFN2x2-3L



Circuit Diagram



Pin Configuration

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

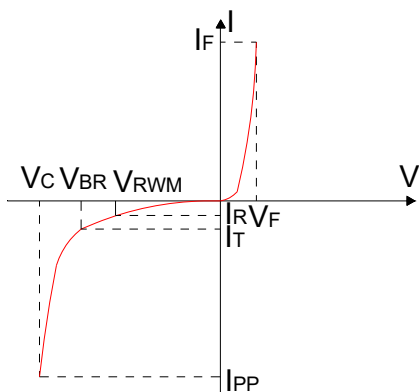
Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 8/20 $\mu\text{s}$ waveform	$P_{PP}$	4500	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	+/- 30 +/- 30	kV
Lead soldering temperature	$T_L$	260 (10 sec.)	$^{\circ}\text{C}$
Operating junction temperature range	$T_J$	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

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

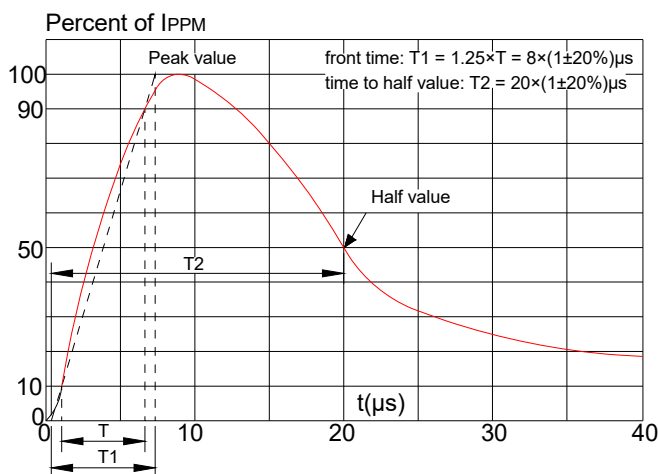
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	$V_{RWM}$				12	V
Reverse breakdown voltage	$V_{BR}$	$I_T=1\text{mA}$	13	14.5	16	V
Reverse leakage current	$I_R$	$V_{RWM}=12\text{V}$			1	$\mu\text{A}$
Clamping voltage	$V_C$	$I_{PP}=50\text{A}$ , $t_P=8/20\mu\text{s}$			22	V
		$I_{PP}=100\text{A}$ , $t_P=8/20\mu\text{s}$			25	V
		$I_{PP}=180\text{A}$ , $t_P=8/20\mu\text{s}$			32	V
Junction capacitance	$C_J$	$V_{RWM}=0\text{V}$ , $f=1\text{MHz}$	900	950	1200	pF

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

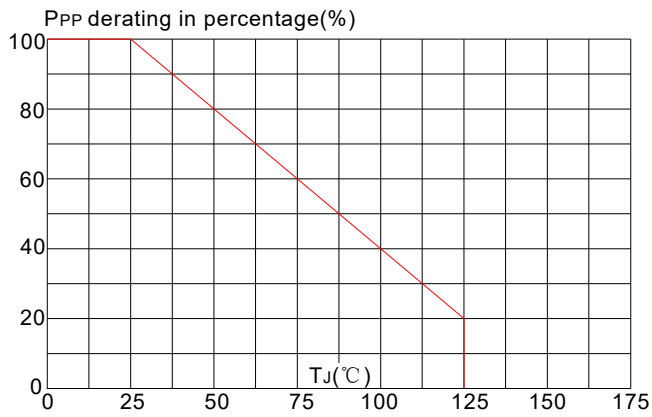
**FIG.1: V- I curve characteristics (Uni-directional)**



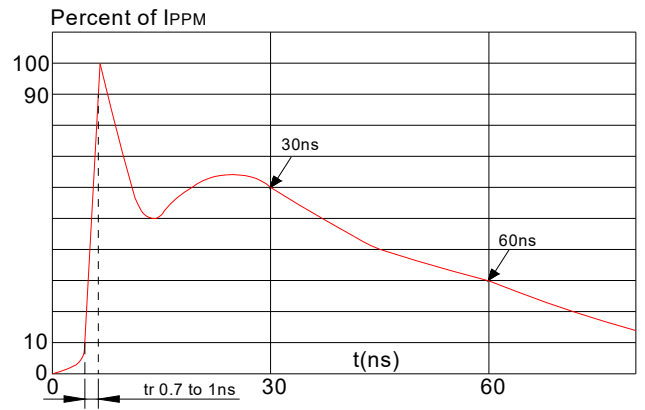
**FIG.2: Pulse waveform (8/20 $\mu\text{s}$ )**



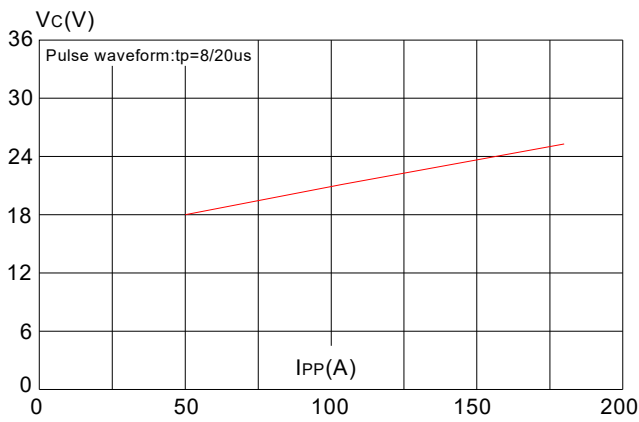
**FIG.3: Pulse derating curve**



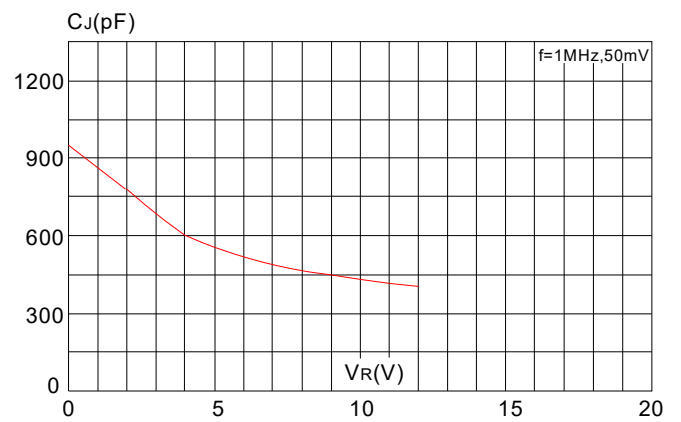
**FIG.4: ESD clamping(30kV contact)**



**FIG.5: Clamping voltage vs. peak pulse current**

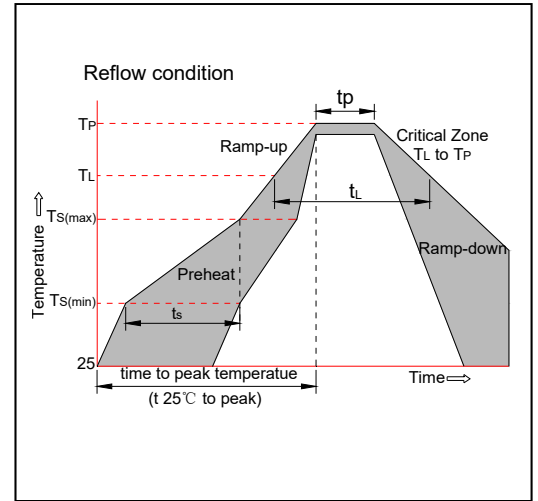


**FIG.6: Capacitance vs. reverse voltage**

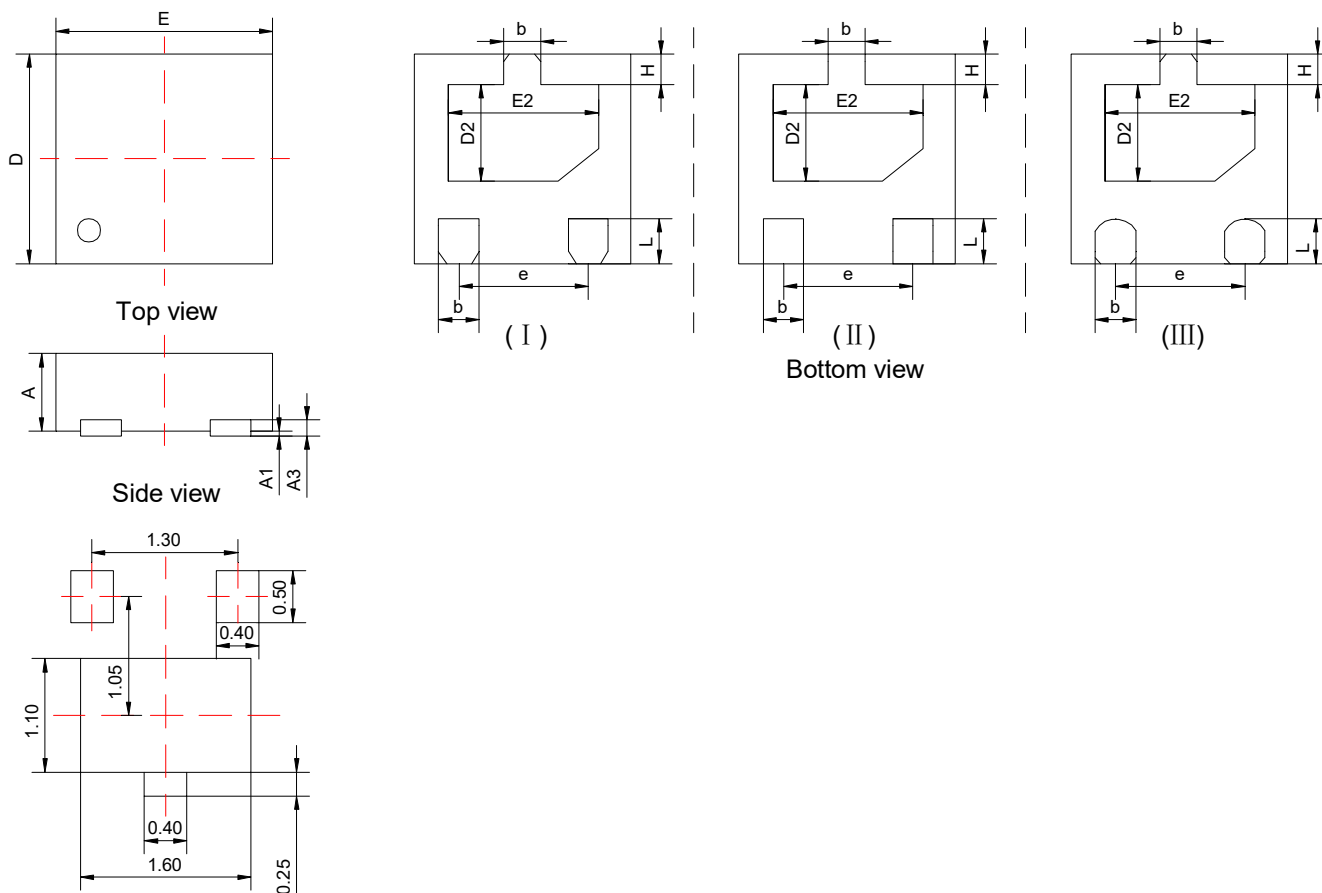


**SOLDERING PARAMETERS**

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) ( $t_s$ )	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



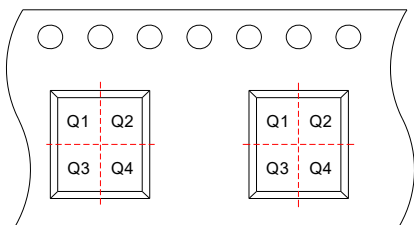
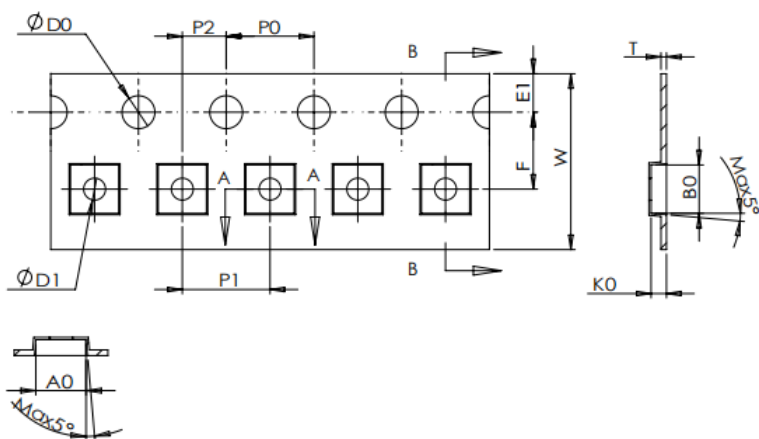
**PACKAGE MECHANICAL DATA**



Recommended soldering footprint(mm)

Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.45	0.50	0.60	0.018	0.020	0.024
A1	0.00	0.02	0.05	0.000	0.001	0.002
A3	0.15REF			0.006REF		
b	0.25	0.30	0.35	0.010	0.012	0.014
D	1.90	2.00	2.10	0.075	0.079	0.083
E	1.90	2.00	2.10	0.075	0.079	0.083
D2	0.85	1.05	1.15	0.033	0.041	0.045
E2	1.40	1.50	1.60	0.055	0.059	0.063
e	1.30BSC			0.051BSC		
H	0.20	0.25	0.30	0.008	0.010	0.012
L	0.35	0.40	0.45	0.014	0.016	0.018

**TAPE AND REEL INFORMATION-DFN2x2-3L**



➔ User direction of feed

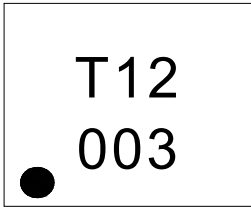
Pin 1 quadrant: Q3

Symbol	Dimensions	
	Millimeters	Inches
	Typ.	Typ.
W	8.00	0.315
P1	4.00	0.157
E1	1.75	0.069
F	3.50	0.138
D0	1.55	0.061
D1	1.00	0.039
P0	4.00	0.157
P1	4.00	0.157
P2	2.00	0.079
A0	2.20	0.087
B0	2.20	0.087
K0	0.70	0.028
T	0.23	0.009

**ORDERING INFORMATION**

PART No.	PACKAGE TYPE	QUANTITY(PCS) REEL	DESCRIPTION
JEU12N3-CO	DFN2x2-3L	3,000	7 Inch

**MARKING CODE**

Part Number	Marking Code
JEU12N3-CO	<div style="border: 1px solid black; padding: 10px; display: inline-block;">  </div>


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