



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

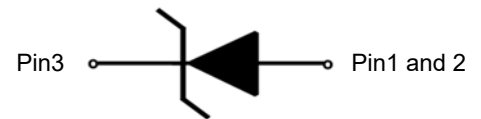
- ✧ IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 180A (8/20 μs)

MECHANICAL CHARACTERISTICS

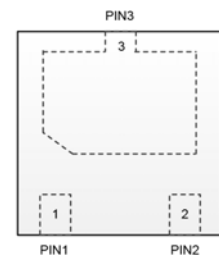
- ✧ DFN2x2-3L package
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Quantity per reel: 5,000pcs
- ✧ Lead finish: lead free
- ✧ Marking code: T12



DFN2x2-3L



Circuit Diagram



Pin Configuration

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

Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 8/20 μs 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	μA
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

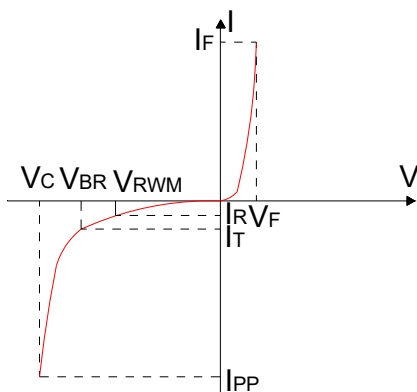
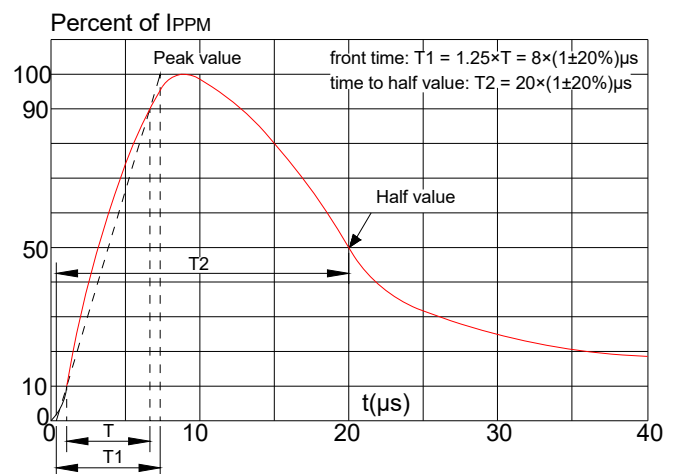
RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^{\circ}\text{C}$, unless otherwise noted)**FIG.1: V- I curve characteristics (Uni-directional)****FIG.2: Pulse waveform (8/20 μs)**

FIG.3: Pulse derating curve

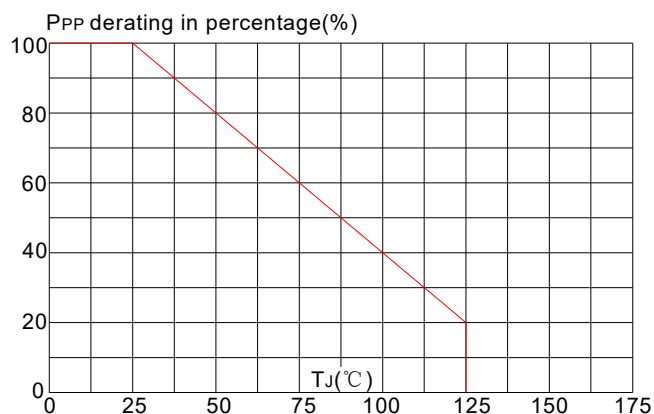


FIG.4: ESD clamping(30kV contact)

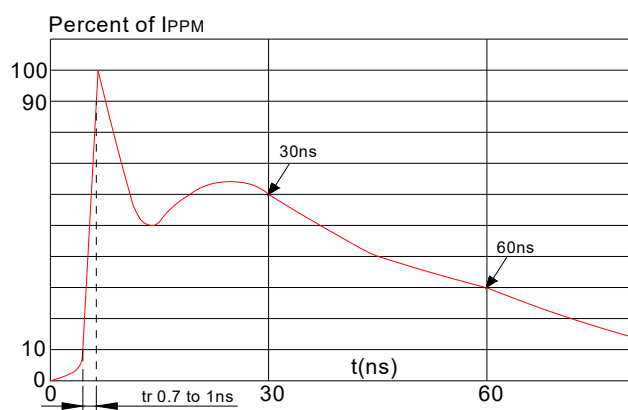


FIG.5:Clamping voltage vs.peak pulse current

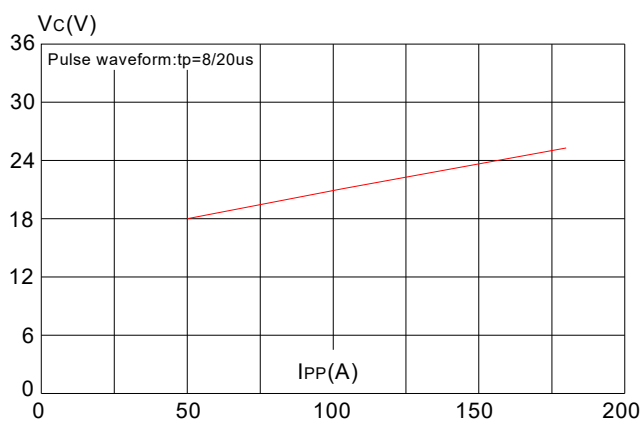
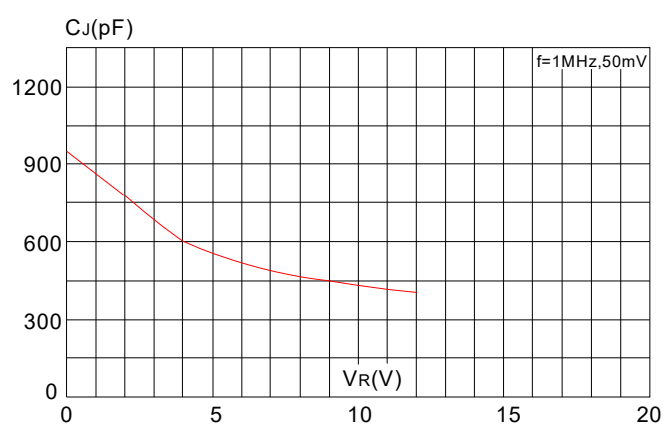
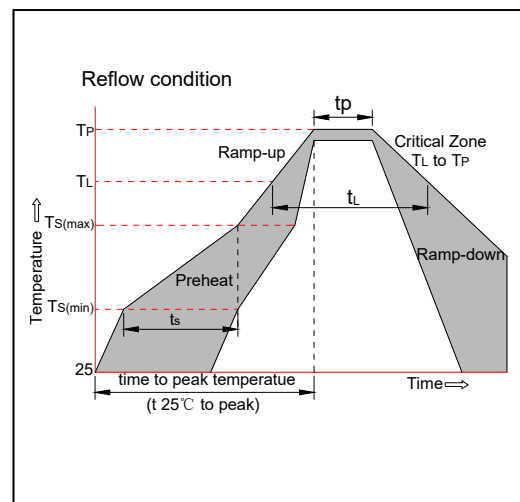


FIG.6:Capacitance vs.reverse voltage

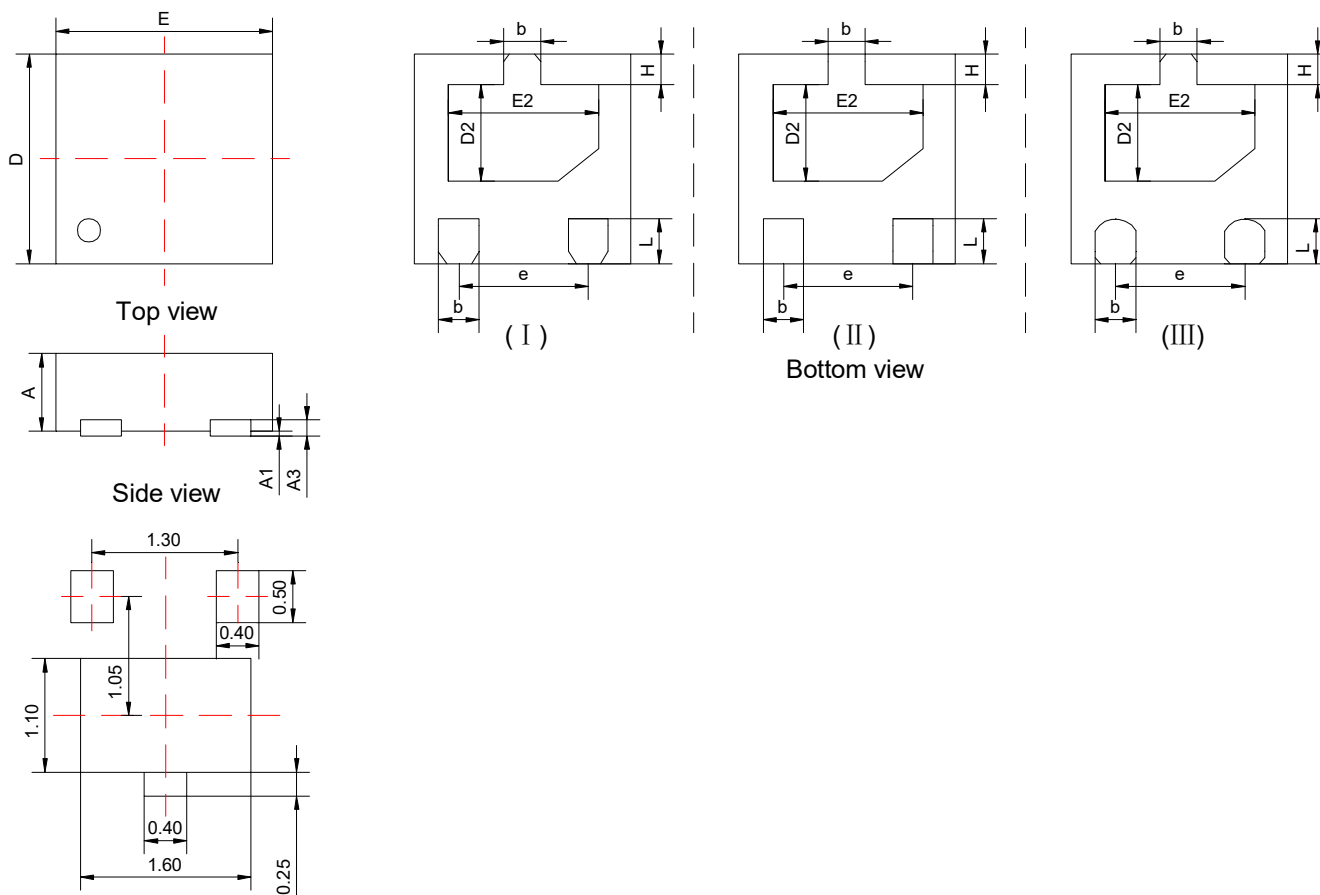


SOLDERING PARAMETERS

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
	-Time(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



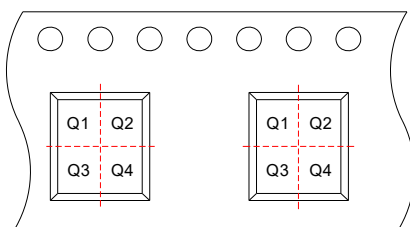
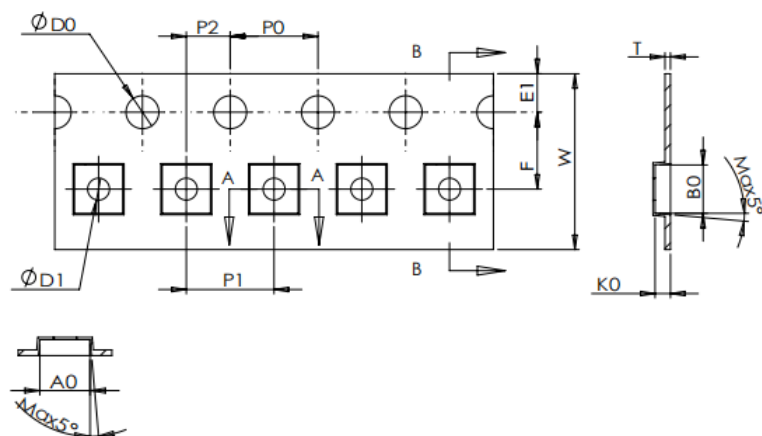
PACKAGE MECHANICAL DATA



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



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	DFN2x2-3L	5,000	7 Inch

MARKING CODE

Part Number	Marking Code
JEU12N3	T12 ● 003

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