



FEATURES

- ◇ 450 Watts peak pulse power per line ($t_P=8/20\mu s$)
- ◇ Protects four I/O lines and one V_{CC} line
- ◇ Low clamping voltage
- ◇ Ultra low capacitance: $<3pF$ for high-speed interfaces
- ◇ Working voltage: 3.3V
- ◇ Low leakage current
- ◇ RoHS compliant

MAIN APPLICATIONS

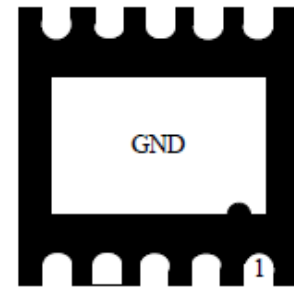
- ◇ USB 2.0
- ◇ 10/100/1000 ethernet
- ◇ DVI interfaces
- ◇ Wireless data (WAN/LAN) systems
- ◇ Analog video
- ◇ T1/E1 secondary protection
- ◇ T3/E3 secondary protection

PROTECTION SOLUTION TO MEET

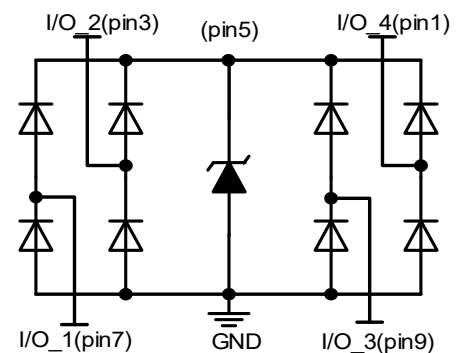
- ◇ IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
- ◇ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◇ IEC61000-4-5 (Lightning) 25A (8/20 μs)

MECHANICAL CHARACTERISTICS

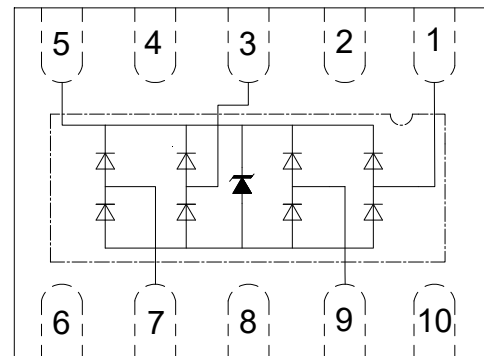
- ◇ JEDEC DFN2.6 \times 2.6-10L package
- ◇ Molding compound flammability rating: UL 94V-0
- ◇ Quantity per reel: 3,000pcs
- ◇ Lead finish: lead free
- ◇ Marking code: 2201+data code



DFN2.6 \times 2.6-10L



Pin configuration



Top view

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 μs waveform	P_{PP}	450	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}	Any pin to ground			3.3	V
Reverse breakdown voltage	V_{BR}	$I_T=1\text{mA}$ pin to ground	3.7			V
Reverse holding voltage	V_H	$I_H=50\text{mA}$	3.5			V
Reverse leakage current	I_R	$V_{RWM}=3.3\text{V}$, $T=25^{\circ}\text{C}$			0.1	μA
Clamping voltage	V_C	$I_{PP}=5\text{A}$, $t_P=8/20\mu\text{s}$ I/O pin to GND			10	V
	V_C	$I_{PP}=25\text{A}$, $t_P=8/20\mu\text{s}$ I/O pin to GND			16	V
Junction capacitance	C_J	$V_{RWM}=0\text{V}$, $f=1\text{MHz}$ Between I/O pins		2		pF
		$V_{RWM}=0\text{V}$, $f=1\text{MHz}$ I/O pin to GND		3.8	5	

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

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

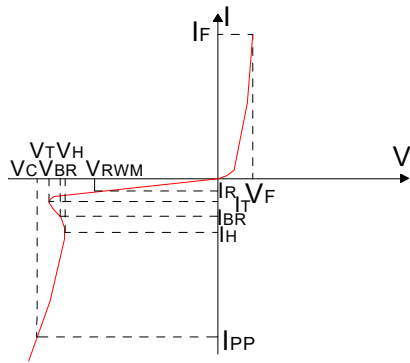


FIG.2: Pulse waveform (8/20 μs)

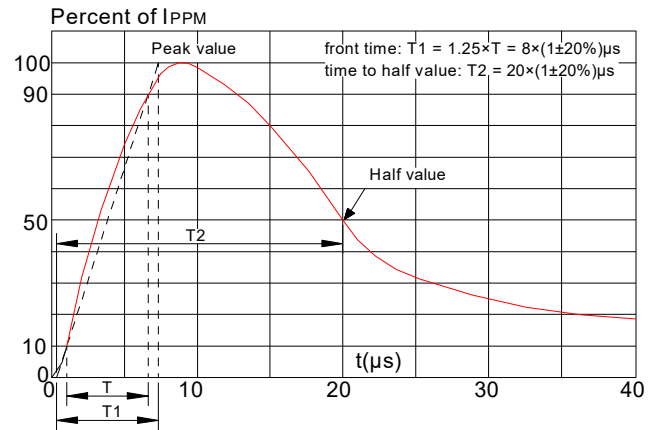


FIG.3: Pulse derating curve

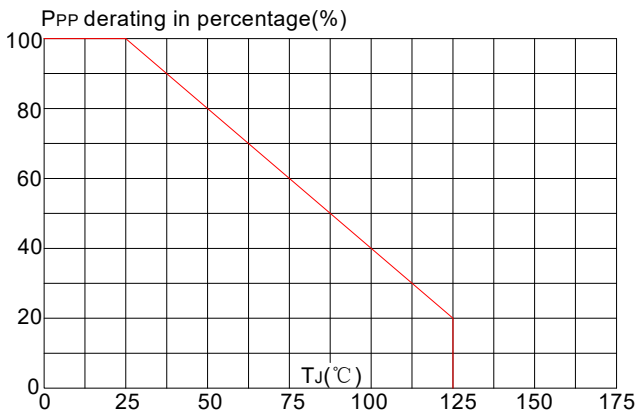
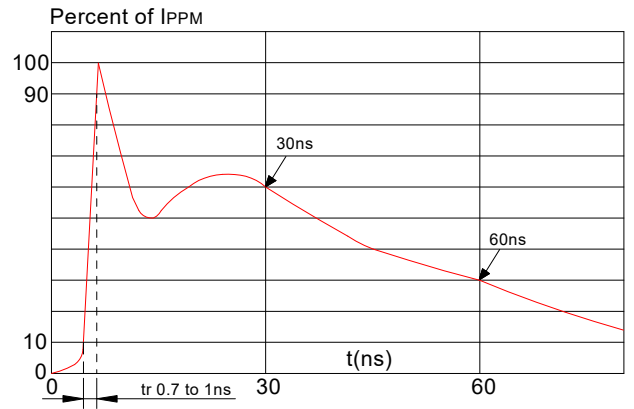
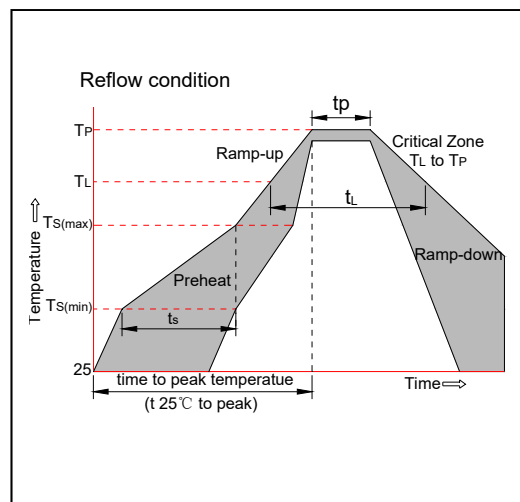


FIG.4: ESD clamping (30kV contact)

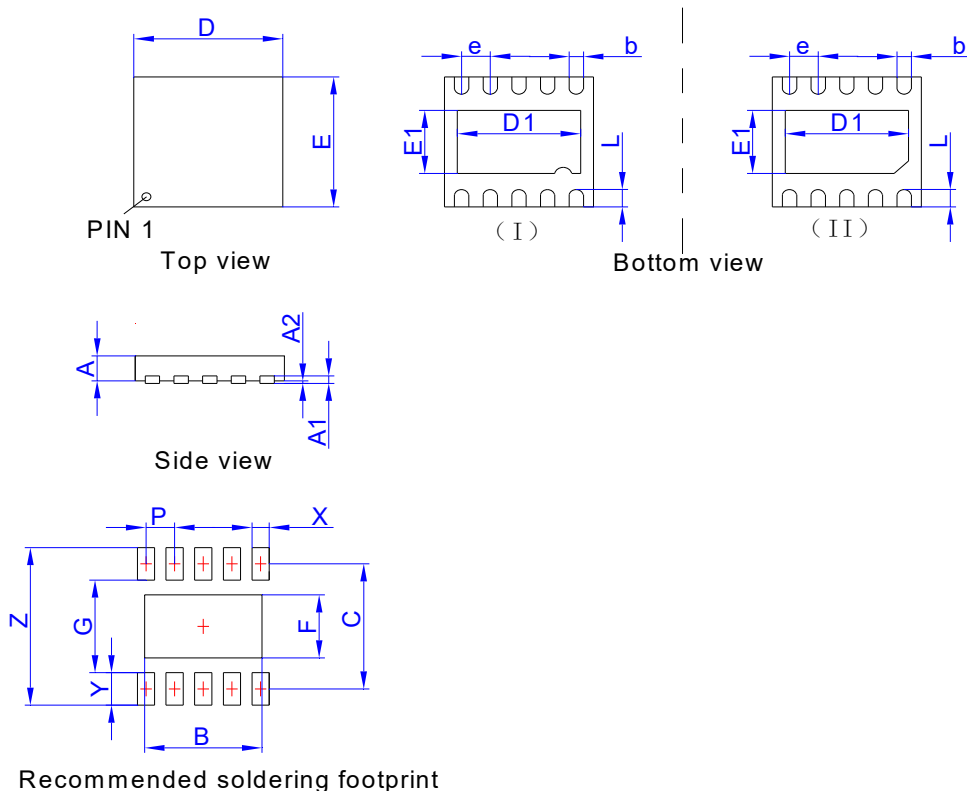


SOLDERING PARAMETERS

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

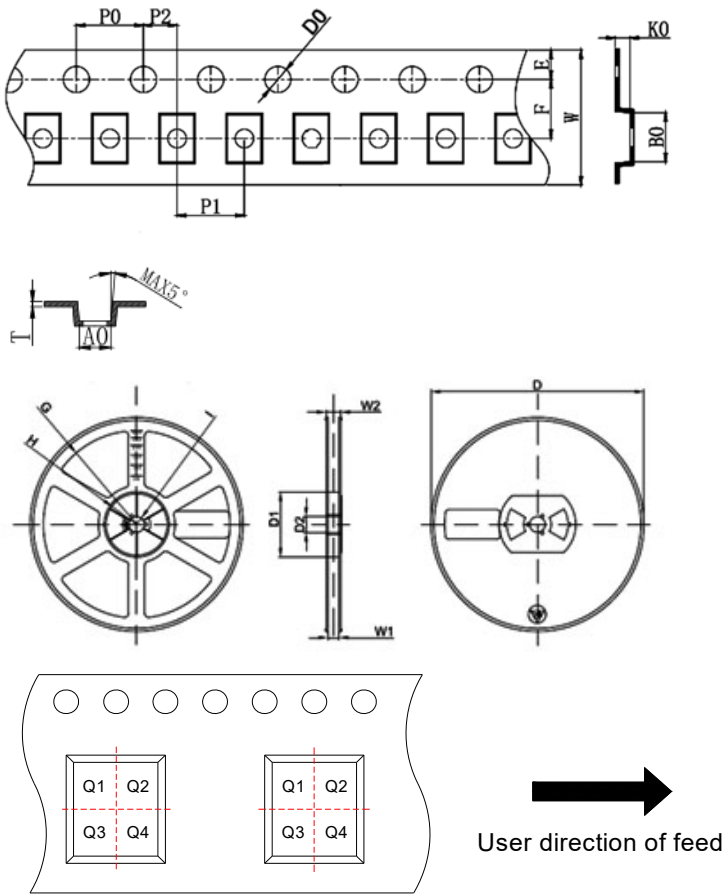


PACKAGE MECHANICAL DATA



Symbol	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D	2.55	2.60	2.65	0.100	0.102	0.104
E	2.55	2.60	2.65	0.100	0.102	0.104
D1	2.10	2.15	2.20	0.083	0.085	0.087
E1	1.21	1.26	1.31	0.048	0.050	0.052
L	0.30	0.35	0.40	0.012	0.014	0.016
b	0.20	0.25	0.30	0.008	0.010	0.012
e	0.50BSC			0.020BSC		
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.15REF			0.006REF		
A2	0.00	0.02	0.05	0.000	0.001	0.002
B	2.05			0.081		
C	2.50			0.098		
F	1.26			0.050		
G	1.85			0.073		
P	0.50			0.020		
X	0.30			0.012		
Y	0.65			0.026		
Z	3.15			0.124		

TAPE AND REEL INFORMATION-DFN2.6×2.6-10L



Pin 1 quadrant:Q1

Packaging Description:


DFN2.6×2.6-10L parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000units per 7" or 17.8cm diameter reel. The reels are clear in color and made of polystyrene plastic(anti-static coated).

Symbol	Millimeters	Inches
	Typ.	Typ.
A0	2.73	0.107
B0	2.78	0.109
K0	0.97	0.038
D0	Φ1.50	Φ0.059
P0	4.00	0.157
P1	4.00	0.157
P2	2.00	0.079
E	1.75	0.069
F	3.50	0.138
W	8.00	0.315
D	Φ178	Φ7.008
D1	54.40	2.142
D2	13.00	0.512
G	R78.00	R3.071
H	R25.60	R1.008
I	R6.50	R0.256
W1	9.50	0.374
W2	12.30	0.484

ORDERING INFORMATION

OUTLINE	Package	Reel Size	Quantity Per Reel
TAPING	DFN2.6×2.6-10L	7 Inch	3,000 pcs

MARKING CODE

Part Number	Marking Code
JEU3K4DF	<div style="border: 1px solid black; padding: 10px; display: inline-block;"> <p style="text-align: center;">2201 YYWW</p>  </div>


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