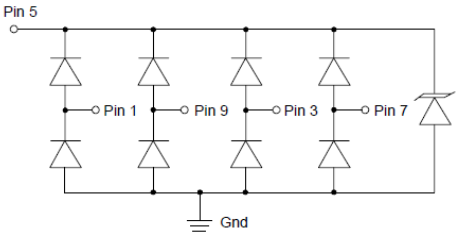
4-Line ESD Protection Diode Array

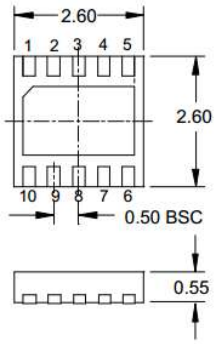
Features

- ◇ 600W (8/20μs) Peak Pulse Power
- ◇ Low Capacitance ESD Protection
- ◇ DFN2.6x2.6-10L Package
- ◇ RoHS Compliant
- ◇ Matte Tin Lead finish (Pb-Free)
- ◇ Protect Four High Speed Data Lines and VDD
- ◇ Meet IEC61000-4-2 Level 4:
  - Contact Discharge > 30kV
  - Air Discharge > 30kV

Applications

- ◇ USB 2.0
- ◇ Analog Video
- ◇ 10/100/1000 Ethernet
- ◇ Digital Video Interface (DVI)
- ◇ T1/E1 Secondary Protection
- ◇ T3/E3 Secondary Protection





DFN2626-10

MARKING: 3304N

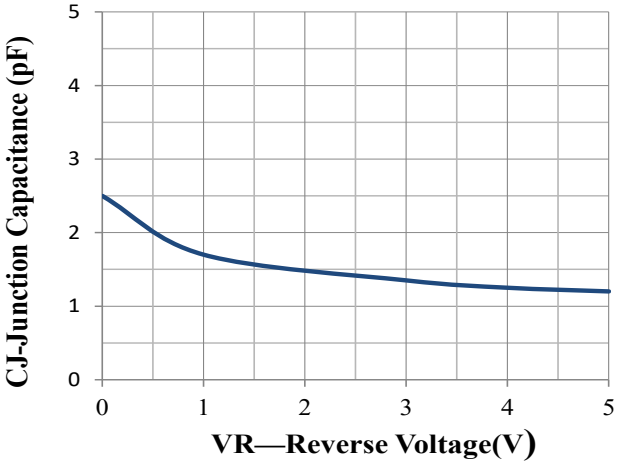
Absolute Maximum Ratings (TA=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs,I/O-GND)	Ppk	400	W
Peak Pulse Power (8/20μs,VDD-GND)	Ppk	600	W
Peak Pulse Current (8/20μs,I/O-GND)	IPP	26	A
Peak Pulse Current (8/20μs,Vcc-GND)	IPP	40	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD,VDD}$ $V_{ESD,I/O}$	±30 ±30	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

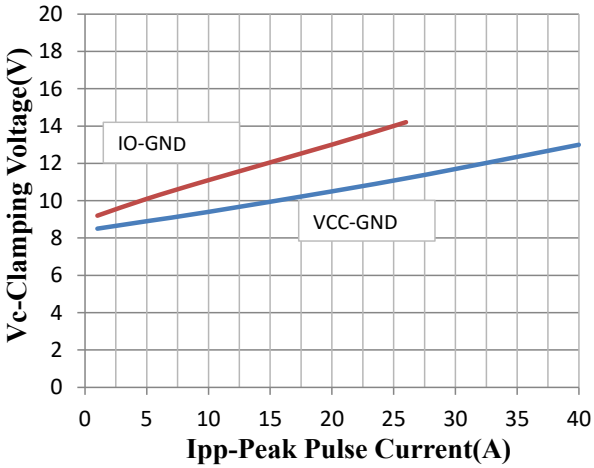
Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Pin 5 to GND,I/O-GND			3.3	V
Breakdown Voltage	V_{BR}	I_T = 1mA($_{Pin\ 5\ to\ GND,I/O-GND}$)	5.0		9.5	V
Reverse Leakage Current	I_R	V_{RWM} = 3.3V (IO-GND,IO-IO,VDD-GND)			1	μA
Forward Breakdown Voltage	V_F	I_F = 15mA,GND to Pin 5/IO		0.8	1.2	V
Clamping Voltage	V_C	IPP = 26A (8 x 20μs pulse, I/O to GND)		14.0	17.0	V
Clamping Voltage	V_C	IPP = 40A (8 x 20μs pulse,Pin VDD to GND)		13.0	16. 0	V
Junction Capacitance	C_J	V_{pin5} = 5V, I/O=0V, f = 1MHz,I/O-GND		3.0	4.0	pF
Junction Capacitance	C_J	V_{pin5} = 5V, I/O=0V, f = 1MHz,I/O-I/O pins		1.8	2.0	pF

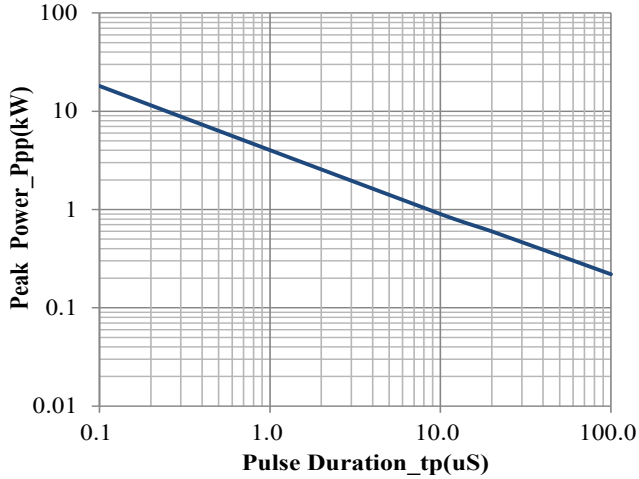
Typical Characteristics



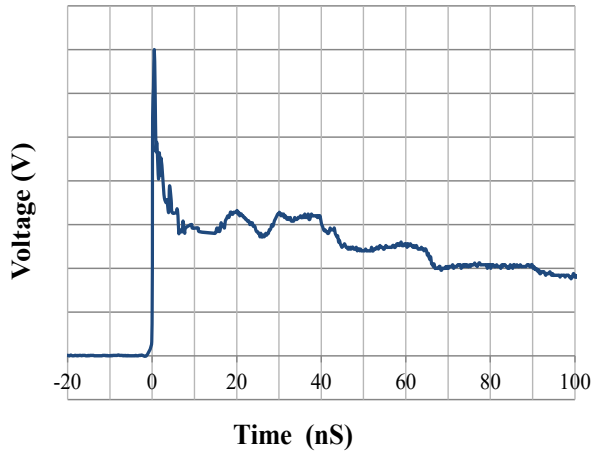
Junction Capacitance vs. Reverse Voltage



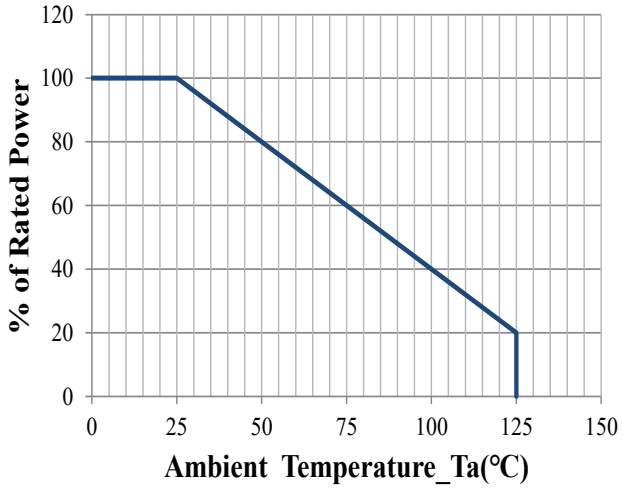
Clamping Voltage vs. Peak Pulse Current



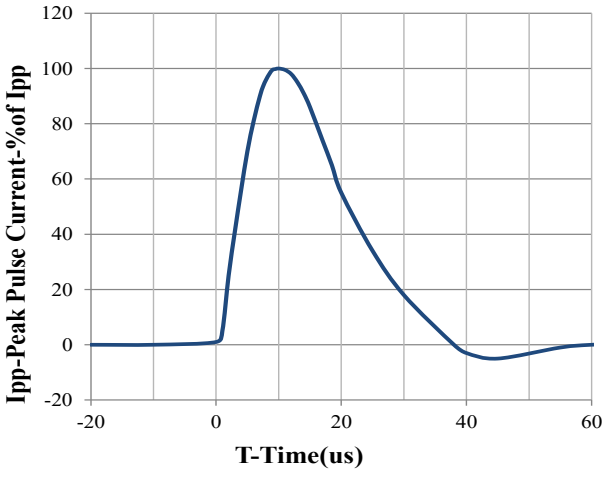
Peak Pulse Power vs. Pulse Time



IEC61000−4−2 Pulse Waveform

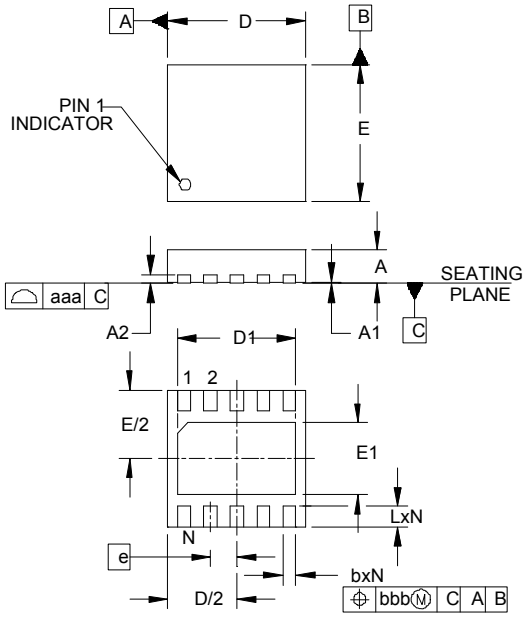


Power Derating Curve



8 X 20us Pulse Waveform

DFN2626-10 Package Outline Drawing

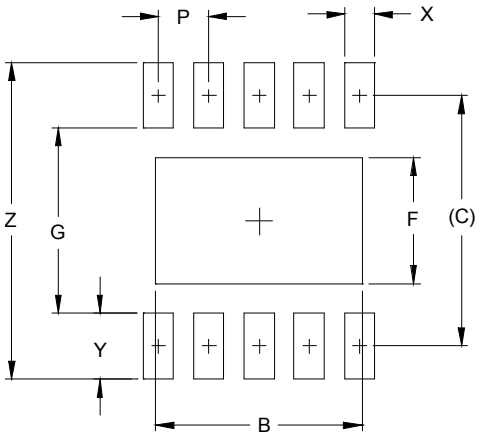


DIM	DIMENSIONS					
	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.020	.022	.024	0.50	0.55	0.60
A1	.000	.001	.002	0.00	0.03	0.05
A2		(.007)			(0.17)	
b	.007	.010	.012	0.20	0.25	0.30
D	.098	.102	.106	2.50	2.60	2.70
D1	.079	.085	.089	2.00	2.15	2.25
E	.098	.102	.106	2.50	2.60	2.70
E1	.044	.050	.054	1.11	1.26	1.36
e		.020 BSC			0.50 BSC	
L	.011	.014	.016	0.30	0.35	0.40
N		10			10	
aaa		.003			0.08	
bbb		.004			0.10	

NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

Suggested Land Pattern



DIM	DIMENSIONS	
	INCHES	MILLIMETERS
B	.081	2.05
C	.100	2.50
F	.050	1.26
G	.073	1.85
P	.020	0.50
X	.012	0.30
Y	.025	0.65
Z	.124	3.15

NOTES:

1. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.