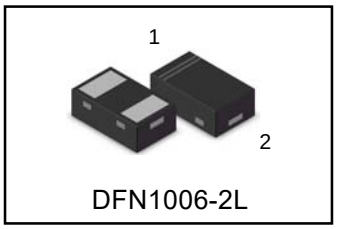
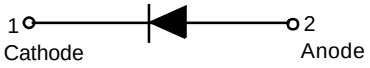
Zener Voltage Regulators

200 mW DFN1006-2L Surface Mount

NZ8Fxx Series

This series of Zener diodes is packaged in a DFN1006-2L surface mount package. They are designed to provide voltage regulation protection and are especially attractive in situations where space is at a premium. They are well suited for applications such as cellular phones, hand held portables, and high density PC boards.





Specification Features:

- Standard Zener Breakdown Voltage Range – 2.4 V to 24 V
- Steady State Power Rating of 200 mW
- ESD Rating of Class 3 (>16 kV) per Human Body Model
- We declare that the material of product compliance with RoHS requirements and Halogen free.

Mechanical Characteristics:

CASE: Void-free, transfer-molded, thermosetting plastic
Epoxy Meets UL 94 V−0
LEAD FINISH: 100% Matte Sn (Tin)
MOUNTING POSITION: Any
QUALIFIED MAX REFLOW TEMPERATURE: 260°C
Device Meets MSL 1 Requirements

MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Total Device Dissipation FR−5 Board, @ T_A = 25°C	P_D	200	mW
Junction and Storage Temperature Range	T_J, T_{stg}	−65 to +150	°C

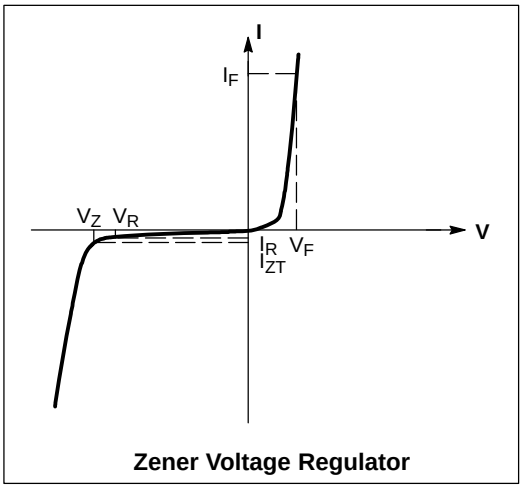
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

ORDERING INFORMATION

Device	Package	Shipping
NZ8Fxx	DFN1006	10000/Tape&Reel

ELECTRICAL CHARACTERISTICS
(T_A = 25°C unless otherwise noted,
V_F = 0.9 V Max. @ I_F = 10 mA for all types)

Symbol	Parameter
V_Z	Reverse Zener Voltage @ I_{ZT}
I_{ZT}	Reverse Current
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}
I_R	Reverse Leakage Current @ V_R
V_R	Reverse Voltage
I_F	Forward Current
V_F	Forward Voltage @ I_F
ΘV_Z	Maximum Temperature Coefficient of V_Z
C	Max. Capacitance @V_R = 0 and f = 1 MHz



Zener Voltage Regulator

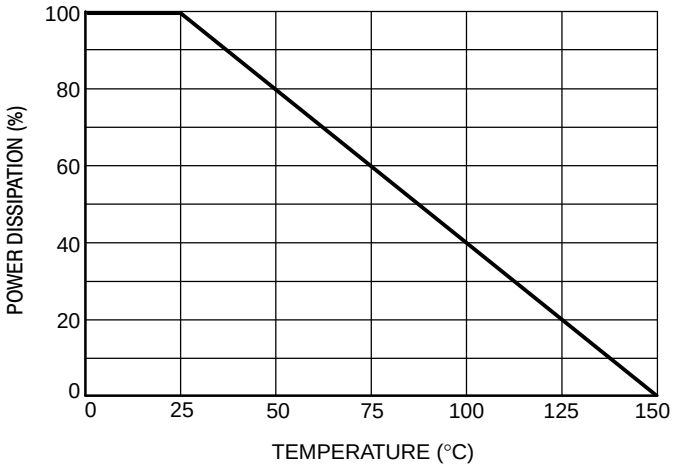


Figure 1. Steady State Power Derating

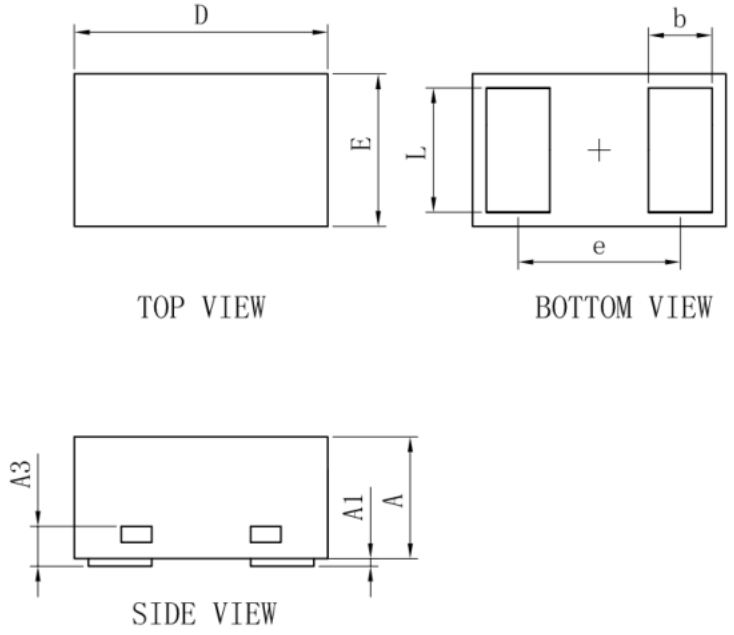
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted, V_F = 0.9 V Max. @ I_F = 10 mA for all types)

Device	Device Marking	Zener Voltage (Note 1)			Zener Impedance			Leakage Current		ΘV_Z (mV/k) @ I_{ZT}		C @ V_R = 0 f = 1 MHz
		V_Z (Volts)		@ I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R				
		Min	Max	mA	Ω	Ω	mA	μA	Volts	Min	Max	pF
NZ8F2V4	J	2.28	2.52	5	100	1000	1	50	1	−3.5	0	210
NZ8F2V7	E**	2.57	2.84	5	100	1000	1	20	1	−3.5	0	210
NZ8F3V0	T**	2.85	3.15	5	100	1000	1	10	1	−3.5	0	210
NZ8F3V3	Q	3.14	3.47	5	100	1000	1	10	1	−3.5	0	210
NZ8F3V6	3**	3.42	3.78	5	100	1000	1	10	1	−3.5	0	210
NZ8F3V9	V**	3.71	4.10	5	100	1000	1	5	1	−3.5	−2.5	210
NZ8F4V3	Y**	4.09	4.52	5	100	1000	1	5	1	−3.5	0	210
NZ8F4V7	7	4.47	4.94	5	100	800	0.5	2	1	−3.5	0.2	150
NZ8F5V1	4	4.85	5.36	5	80	500	0.5	2	1.5	−2.7	1.2	130
NZ8F5V6	5*	5.32	5.88	5	60	200	0.5	1	2.5	−2.0	2.5	115
NZ8F6V2	6	5.89	6.51	5	60	100	0.5	1	3	0.4	3.7	110
NZ8F6V8	A*	6.46	7.14	5	40	60	0.5	0.5	3.5	1.2	4.5	105
NZ8F7V5	D*	7.13	7.88	5	30	60	0.5	0.5	4	2.5	5.3	100
NZ8F8V2	E*	7.79	8.61	5	30	60	0.5	0.5	5	3.2	6.2	90
NZ8F9V1	F*	8.65	9.56	5	30	60	0.5	0.5	6	3.8	7	80
NZ8F10V	J*	9.50	10.50	5	30	60	0.5	0.1	7	4.5	8	80
NZ8F11V	K*	10.45	11.55	5	30	60	0.5	0.1	8	5.4	9	80
NZ8F12V	L*	11.40	12.60	5	30	80	0.5	0.1	9	6	10	80
NZ8F13V	P*	12.35	13.65	5	37	80	0.5	0.1	10	7	11	75
NZ8F15V	Q*	14.25	15.75	5	42	80	0.5	0.1	11	9.2	13	70
NZ8F16V	R*	15.20	16.80	5	50	80	0.5	0.1	12	10.4	14	65
NZ8F18V	T*	17.10	18.90	5	50	80	0.5	0.1	14	12.4	16	60
NZ8F20V	V*	19.00	21.00	5	55	100	0.5	0.1	15.4	14.4	18	55
NZ8F22V	Y*	20.90	23.10	5	55	100	0.5	0.1	16.8	15.4	20	55
NZ8F24V	S	22.80	25.20	5	70	120	0.5	0.1	18.9	16.8	22	50

*Rotated 90°.
**Rotated 270°.
1. Zener voltage is measured with a pulse test current I_Z at an ambient temperature of 25°C.

OUTLINE AND DIMENSIONS

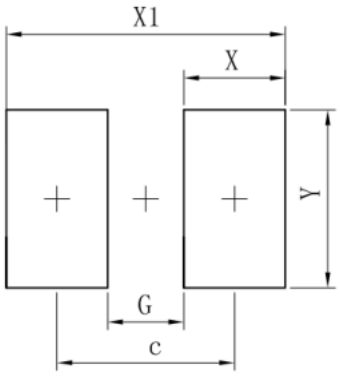
DFN1006-2L



DFN1006-2L			
Dim	Min	Typ	Max
D	0.95	1.00	1.05
E	0.55	0.60	0.65
e	–	0.64	–
L	0.44	0.49	0.54
b	0.20	0.25	0.30
A	0.43	0.48	0.53
A1	0	–	0.05
A3	0.127REF.		
All Dimensions in mm			

SOLDERING FOOTPRINT

DFN1006-2L



Dimensions	(mm)
c	0.70
G	0.30
X	0.40
X1	1.10
Y	0.70