1N5615 thru 1N5623
S2F thru S0F

Rectifier Diode, up to 1KV, 2A, Fast Recovery

HIGH-RELIABILITY PRODUCTS

Features

- Low Reverse Leakage Current
- Hermetically Sealed Non-cavity Parts
- Good Thermal Shock Resistance
- Low Forward Voltage Drop
- Qualified to MIL-PRF-19500/429, Levels JAN Thru JANS

Quick Reference Data

- V_{RWM} = 200 to 1,000 Volts
- I_f = 2.0 A
- t_{rr} = 150 - 500 nsec

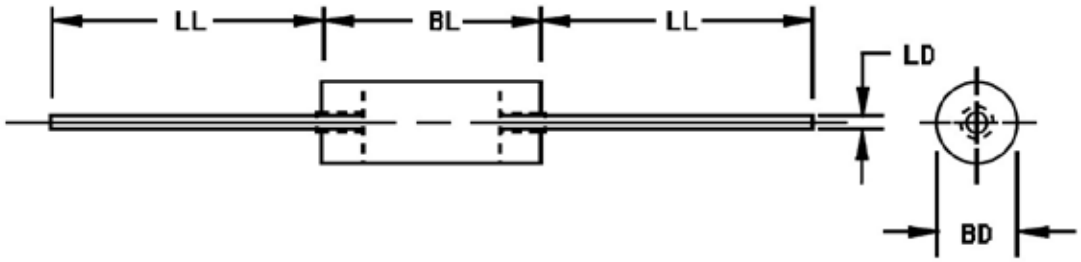
Electrical specifications (Electrical specifications at T=25°C unless otherwise specified)

Part Number	Symbol	1N5615 S2F	1N5617 S4F	1N5619 S6F	1N5621 S8F	1N5623 S0F	Units
Working Reverse Voltage	V_{RWM}	200	400	600	800	1,000	Volts
Repetitive Reverse Voltage	V_{RRM}	200	400	600	800	1,000	Volts
Minimum Breakdown Voltage	V_{BR}	220	440	660	880	1,100	Volts
Maximum Forward Current[1]	$I_{F(AV)}$	2.0					Amps
Maximum Repetitive Surge Current[1]	I_{FRM}	6.0					Amps
Max Surge Current. t_p=8.3msec	I_{FSM}	25					Amps
I^2t for fusing (t=8.3msec)	I^2t	5.0					A^2S
Maximum Reverse Leakage Current at V_{RWM} 25°C 125°C	I_{R1} I_{R2}	0.5 55					µAmps
Maximum Forward Voltage Drop at I_F[2] 1.0A 3.0A	V_F	1.2 1.6					Volts
Storage and Operating Junction Temperatures	T_{STG} , T_J	-65 to +175					°C
Max. Thermal Resistance. L=0.375”	$R_{\theta JL}$	38					°C/W
Maximum Recovery Time[3]	t_{rr}	150	150	250	300	500	nsec
Typical Junction Capacitance[4]	C_j	27	27	27	18	18	pF

1) @ 55°C, Lead length 0.375”
2) t_p=300µs 2% max. duty cycle
3) Recovery conditions I_F=0.5A , I_R=1.0A, I_{RR}=0.25A
4) V_r=15.0V, f=1MHz

Outline Drawing

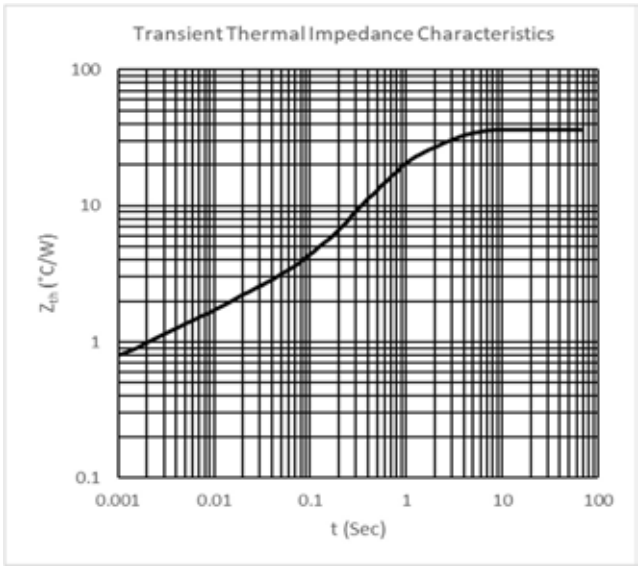
Axial types 1N5615 through 1N5623, S2F through S0F.

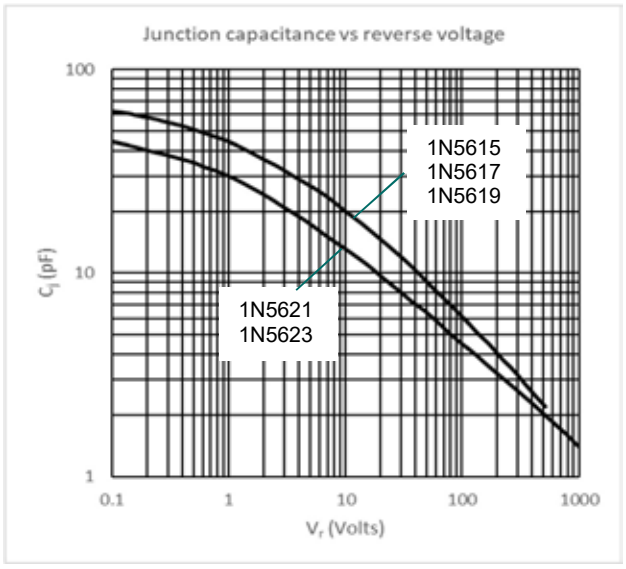


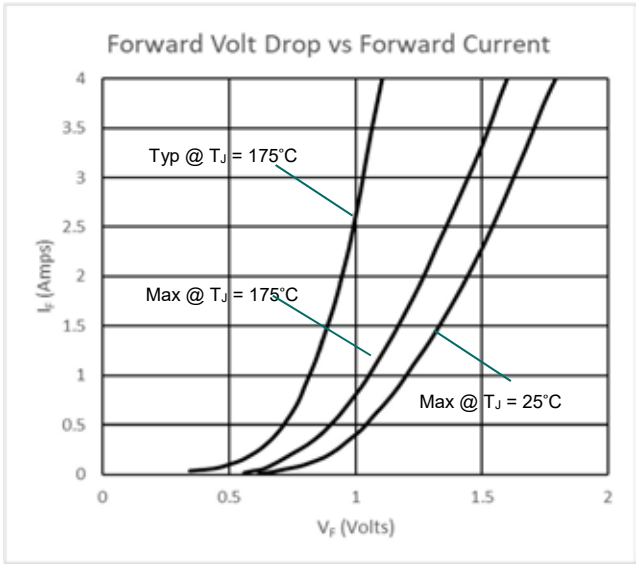
Letter	DIMENSIONS				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
BD	0.065	0.110	1.65	2.79	2
BL	0.130	0.205	3.30	5.21	3
LD	0.026	0.033	0.66	0.84	
LL	1.00	1.50	25.4	38.1	

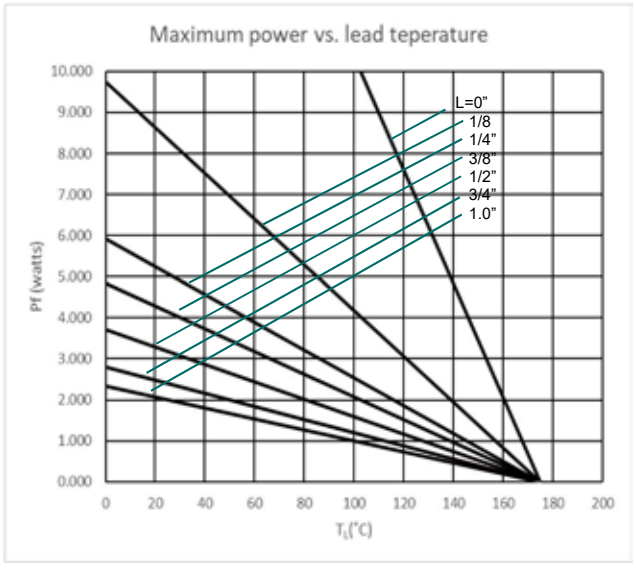
Notes:

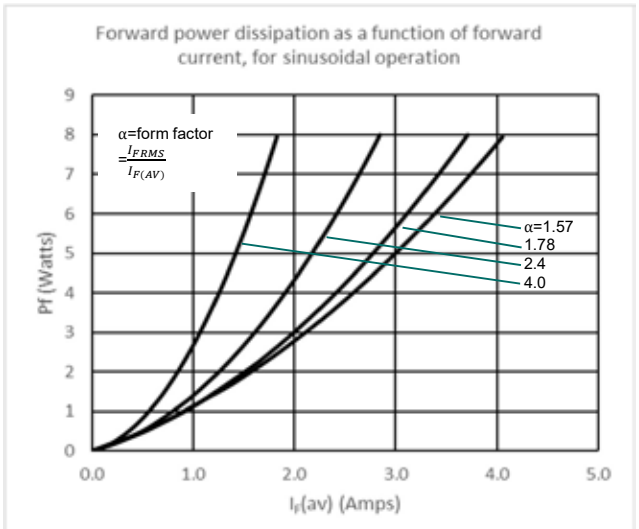
1. Dimensions are in inches. Millimeters are given for general information only
2. Dimension BD shall be measured at the largest diameter
3. The BL dimension shall include the entire body including slugs and sections of the leads over which the diameter is uncontrolled. The uncontrolled area is the zone between the edge of the diode body and extending .050 inch (1.27 mm) onto the leads.
4. In accordance with ASME Y14.5M, diameters are equivalent to Φx symbology

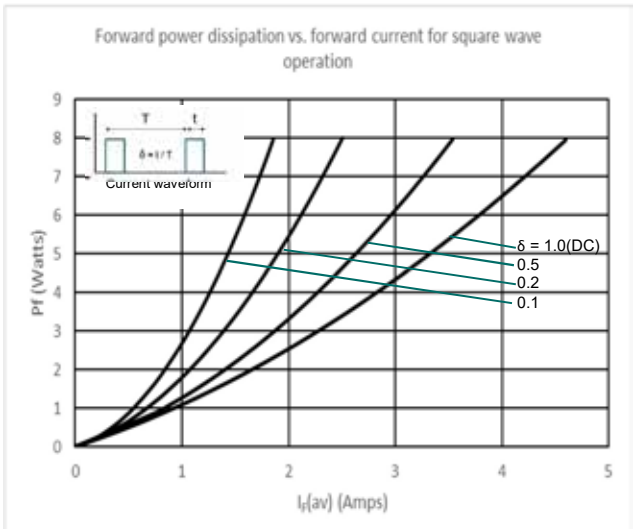

Transient Thermal Impedance Characteristics
100
10
1
0.1
Z_{th} (°C/W)
0.001
0.01
0.1
1
10
100
t (Sec)

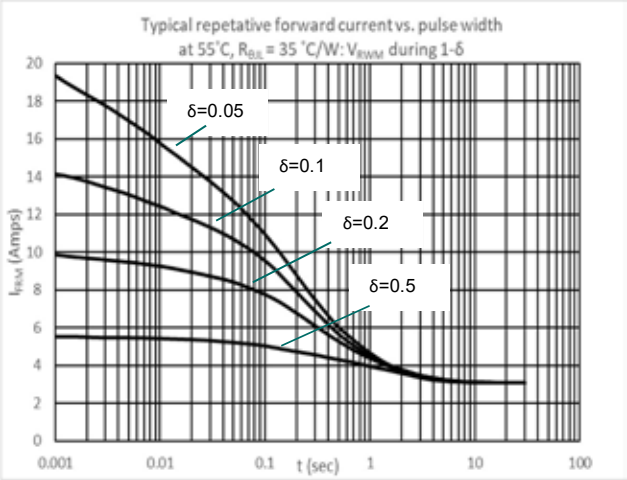

Junction capacitance vs reverse voltage
100
10
1
C_j (pF)
1N5615
1N5617
1N5619
1N5621
1N5623
0.1
1
10
100
1000
V_r (Volts)

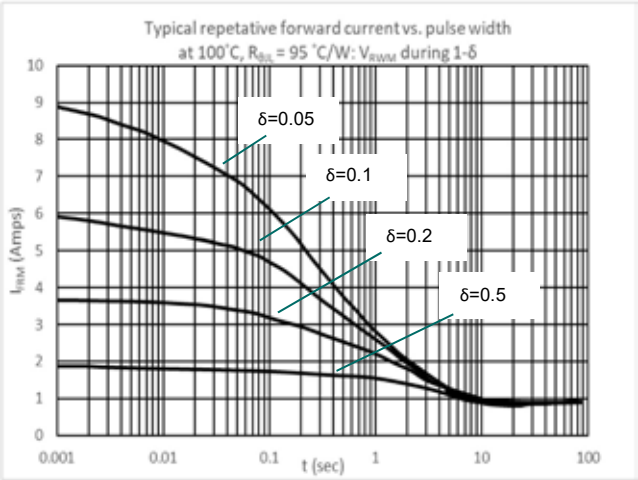

Forward Volt Drop vs Forward Current
4
3.5
3
2.5
2
1.5
1
0.5
0
I_F (Amps)
Typ @ T_J = 175°C
Max @ T_J = 175°C
Max @ T_J = 25°C
0
0.5
1
1.5
2
V_F (Volts)


Maximum power vs. lead teperature
10.000
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
Pf (watts)
L=0"
1/8
1/4"
3/8"
1/2"
3/4"
1.0"
0
20
40
60
80
100
120
140
160
180
200
T_L(°C)


Forward power dissipation as a function of forward current, for sinusoidal operation
9
8
7
6
5
4
3
2
1
0
Pf (Watts)
α=form factor
$=\frac{I_{FRMS}}{I_{F(AV)}}$
α=1.57
1.78
2.4
4.0
0.0
1.0
2.0
3.0
4.0
5.0
I_F(av) (Amps)


Forward power dissipation vs. forward current for square wave operation
T
t
δ=t/T
Current waveform
9
8
7
6
5
4
3
2
1
0
Pf (Watts)
δ = 1.0(DC)
0.5
0.2
0.1
0
1
2
3
4
5
I_F(av) (Amps)





Ordering Information

Part Number	Description[1]
1N5615 thru 1N5623 **S2F thru S0F**	**Axial leaded part**
1N5615.TR thru 1N5623.TR **S2F.TR thru S0F.TR**	**Tape and Reel Axial Parts**

Notes:
1. Please consult factory for quantities