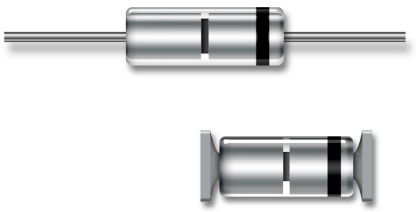
1N3595, 1N3595A
1N3595US, 1N3595AUS

Low Leakage Controlled Forward Voltage Diode

Rev. V1

Features

- Available in JAN, JANTX, JANTXV and JANS per MIL-PRF-19500/241
- Metallurgically Bonded
- Hermetically Sealed
- Double Plug Construction
- Non Cavity Hard Glass Package



DC Electrical Characteristics T_A = +25°C (unless otherwise specified)

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Forward Voltage	I_F = 200 mA dc	V_{F1}	V dc	.83	1.00
Forward Voltage	I_F = 100 mA dc	V_{F2}	V dc	.79	.92
Forward Voltage	I_F = 50 mA dc	V_{F3}	V dc	.74	.88
Forward Voltage	I_F = 10 mA dc	V_{F4}	V dc	.65	.80
Forward Voltage	I_F = 5 mA dc	V_{F5}	V dc	.60	.765
Forward Voltage	I_F = 1 mA dc	V_{F6}	V dc	.52	.70
Reverse Current Leakage (1N3595, 1N3595US)	V_R = 125 V dc	I_{R1}	nA dc	—	1.0
Reverse Current Leakage (1N3595A, 1N3595AUS)	V_R = 125 V dc	I_{R1}	nA dc	—	2.0
Reverse Current Leakage	T_A = +150°C; V_R = 125 V dc	I_{R2}	µA dc	—	3.0
Breakdown Voltage	T_A = -55°C; I_R = 100 µA dc	$V_{(BR)}$	V dc	150	—
Capacitance	V_R = 0 V dc; f = 1 MHz	C	pF	—	8.0
Reverse Recovery Time	I_F = 10 mA dc; V_R = 35 V dc; R = 1,000 Ω; .6 µF	t_{rr}	µs	—	3

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

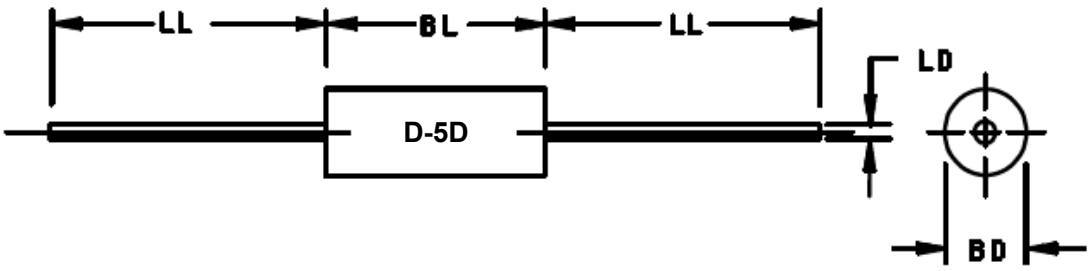
Parameter	Symbol	Absolute Maximum
Working Voltage	V_{RWM}	125 V (pk)
Average Rectified Output Current (1) (2)	I_O	150 mA dc
Forward Surge Current (t_p = 1 s)	I_{FSM}	500 mA (pk)
Forward Surge Current (t_p = 1 µs)	I_{FSM}	4 A (pk)
Junction Temperature	T_J	-65°C to +175°C
Storage Temperature	T_{STG}	-65°C to +175°C

Thermal Characteristics (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Absolute Maximum
Thermal Resistance Junction to Lead (L= .375 inch, 9.53 mm)	$R_{\theta JL}$	250°C/W
Thermal Resistance Junction to End Cap	$R_{\theta JEC}$	40°C/W
Thermal Resistance Junction to Ambient (PCB)	$R_{\theta JA}$	275°C/W

(1) For temperature-current derating curves, see figure 9.
(2) T_A = +75°C for both axial and MELF diodes (US) on printed circuit board (PCB), PCB = FR4 -.0625 inch (1.59mm) 1-layer, 1-Oz Cu, horizontal, in still air; pads for (US) = .061 inch (1.55 mm) x .105 inch (2.67 mm); pads for axial = .092 inch (2.34 mm) diameter, strip = .030 inch) 0.76 mm) x 1 inch (25.4 mm) long, lead length L ≤ .187 inch (≤ 4.75 mm); $R^{\theta}JA$ with a defined PCB thermal resistance condition included, is measured at I_O = 150 mA dc.

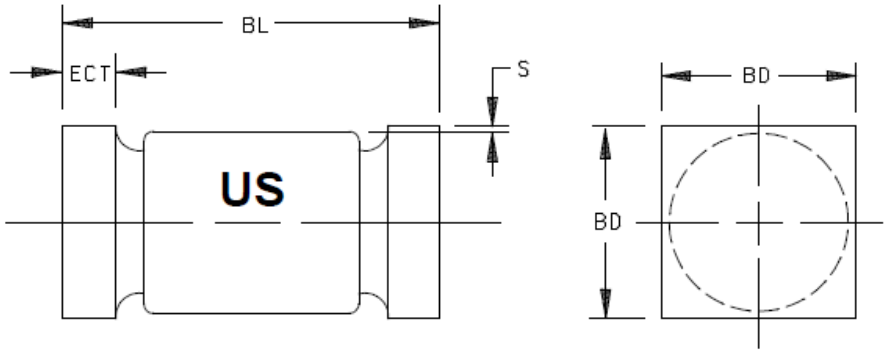
Outline Drawings (D-5D)



Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	.056	.075	1.42	1.91
BL	.140	.180	3.56	4.57
LD	.018	.022	0.46	0.56
LL	1.000	1.500	25.40	38.10

NOTES:
1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. In accordance with ASME Y14.5, diameters are equivalent to Φx symbology.
4. Dimensions are pre-solder dip.

Outline Drawings (D-5D-MELF)

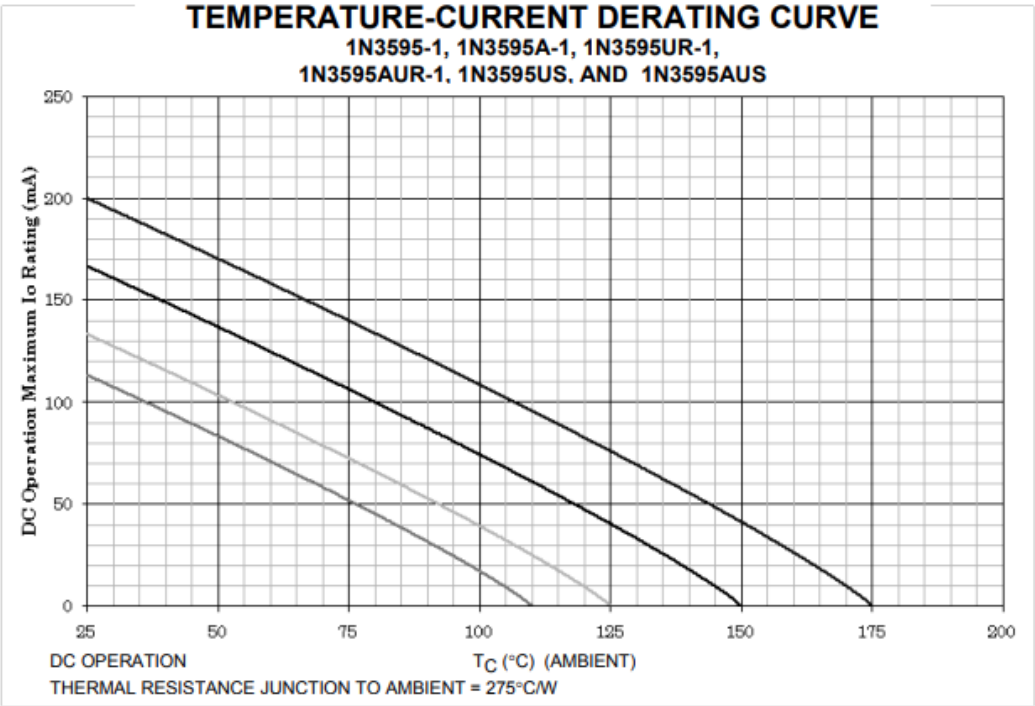


Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	.070	.085	1.78	2.16
BL	.165	.195	4.19	4.95
ECT	.019	.028	0.48	0.71
S	.003		0.08	

NOTES:
1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. Dimensions are presolder dip.
4. Referencing dimension S, minimum clearance of glass body to mounting surface on all orientations.
* 5. In accordance with ASME Y14.5, diameters are equivalent to Φx symbology.

FIGURE 3. Physical dimensions - 1N3595US, 1N3595AUS.

Temperature-Current Derating Curve



NOTES:

1. This is the true inverse of the worst case thermal resistance value. All devices are capable of operating at ≤ T_J specified on this curve. Any parallel line to this curve will intersect the appropriate power for the desired maximum T_J allowed.
2. Derate design curve constrained by the maximum junction temperature (T_J ≤ 175°C) and power/current rating specified. (See 1.3 herein.)
3. Derate design curve chosen at T_J ≤ 150°C, where the maximum temperature of electrical test is performed.
4. Derate design curves chosen at T_J ≤ 125°C, and 110°C to show power/current rating where most users want to limit T_J in their application.

FIGURE 9. Temperature-current derating graph.