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 $T_A = +25^{\circ}C$ (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	С	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

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Absolute Maximum Ratings ($T_A = +25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Absolute Maximum
Working Voltage	V _{RWM}	125 V (pk)
Average Rectified Output Current (1) (2)	Ιo	150 mA dc
Forward Surge Current $(t_p = 1 s)$	I _{FSM}	500 mA (pk)
Forward Surge Current ($t_p = 1 \ \mu s$)	I _{FSM}	4 A (pk)
Junction Temperature	TJ	-65°C to +175°C
Storage Temperature	T _{STG}	-65°C to +175°C

Thermal Characteristics ($T_A = +25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Absolute Maximum
Thermal Resistance Junction to Lead (L= .375 inch, 9.53 mm)	R₀JL	250°C/W
Thermal Resistance Junction to End Cap	R₀ _{JEC}	40°C/W
Thermal Resistance Junction to Ambient (PCB)	R _{⁰JA}	275°C/W

- (1) For temperature-current derating curves, see figure 9. (2) $T_A = +75^{\circ}C$ 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^aJA with a defined PCB thermal resistance condition included, is measured at $I_0 = 150 \text{ mA} \text{ dc}$.

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Outline Drawings (D-5D)



	Dimensions				
Ltr	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.

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Outline Drawings (D-5D-MELF)



	Dimensions					
Ltr	Inches		Inches Millimete			neters
	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.



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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 $\leq T_J$ 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 ($T_J \le 175^{\circ}C$) and power/current rating specified. (See 1.3 herein.)
- 3. Derate design curve chosen at $T_J \le 150^{\circ}$ C, where the maximum temperature of electrical test is performed.
- 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.

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