

LDB15J

General Bridge Rectifiers



Voltage: 600 Volts

Current: 15 A

Package: LDB-S

Features

- NH'S Standard Rectifier Chip Technology
- Low Forward Voltage Drop For High Efficiency
- Low Leakage Current For High Reliability
- High Surge Capability For High Reliability

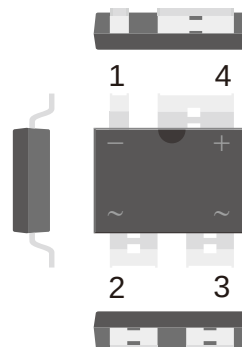
Mechanical Data

- **Case:** Molded With UL-94 ClassV-0 Recognized, RoHS-Compliant
- **Polarity:** Look At The Diagram And Polarity On The Right
- **Terminals:** Tin Plated Leads,Solderable Per J-STD-002 And JESD22-B102

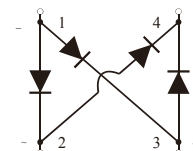
Typical Applications

- Switch Mode Power Supplies (SMPS)
- Fast Chargers
- LED Driver And Monitor Lighting
- Automotive Electronics And Charging Posts

Diagram:



Polarity:



Single Phase,Half Wave,60Hz,Resistive Or Inductive Load.For Capacitive Load,Derate Current By 20%

Maximum Ratings (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	Ratings	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	600	V
Maximum RMS Voltag		V_{RMS}	420	V
Maximum DC Blocking Voltage		V_{DC}	600	V
Maximum Average Forward Rectified Current(Note2)		$I_{F(AV)}$	15	A
Peak Forward Surge Current Per Diode	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	250	A
Current Squared Time Per Diode	$t < 8.3ms$	I^2t	259.4	A ² sec

Electrical Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	Ratings			Unit
			Min.	Typ.	Max.	
Instaneous Forward Voltage Per Diode	$I_F = 7.5 A$	V_F	--	0.95	1.0	V
Maximum DC Reverse Current at Rated DC Blocking Voltage	Ta=25°C , $V_R = V_{RRM}$	I_{RRM}	--	1	5	uA
	Ta=125°C , $V_R = V_{RRM} * 80\%$		--	25	200	uA
Typical Junction Capacitance Per Diode	4 V,1MHz	C_J	--	70	--	pF

Thermal Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	Ratings			Unit
Operating Junction Temperature Range		T _J	-55	to	150	°C
Storage Temperature Range		T _{STD}	-55	to	150	
Thermal Resistance Junction To Ambient With Steady-State	Still Air Environment With Ta=25°C	R _{θJA}	20.0			°C/W
Thermal Resistance Junction-Case With Steady-State	Device Mounted On 1 in2 FR-4 Board With 2oz. Copper	R _{θJC}	4.5			

Notes: 1.Pulse Test: 300 Us Pulse Width,1% Duty Cycle

2.Device mounted on 250mm x 250mm x 2.0mm Aluminum Plate Heatsink.

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Typical Characteristics Curves

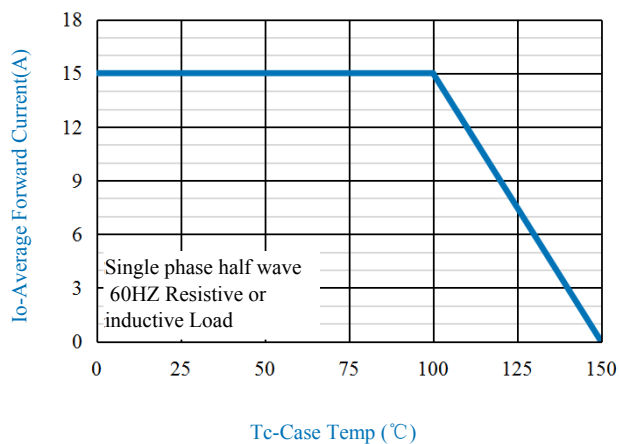


Fig.1-Forward Current Derating Curve

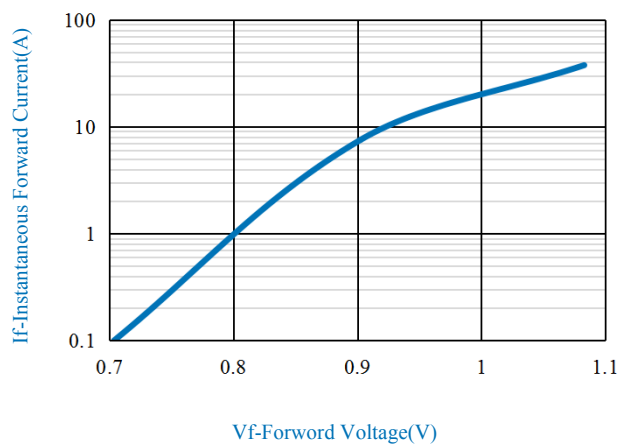


Fig.2-Typical Instantaneous Forward

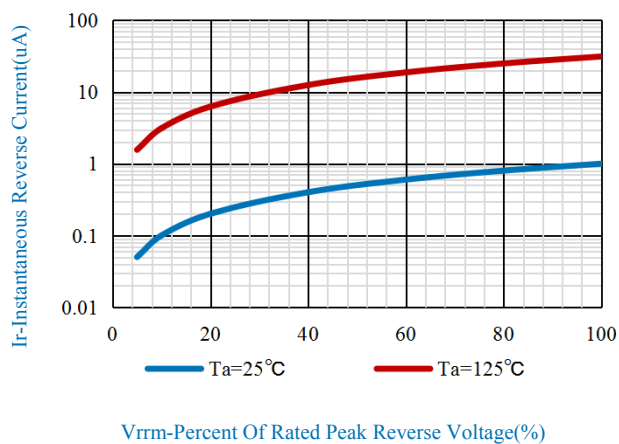


Fig.3-Typical Reverse Characteristics

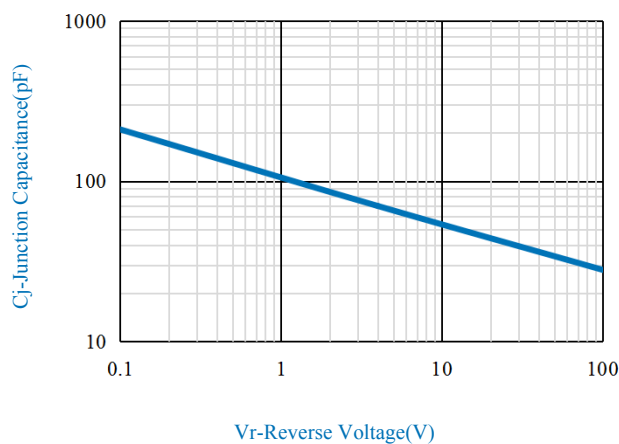


Fig.4-Typical Junction Capacitance

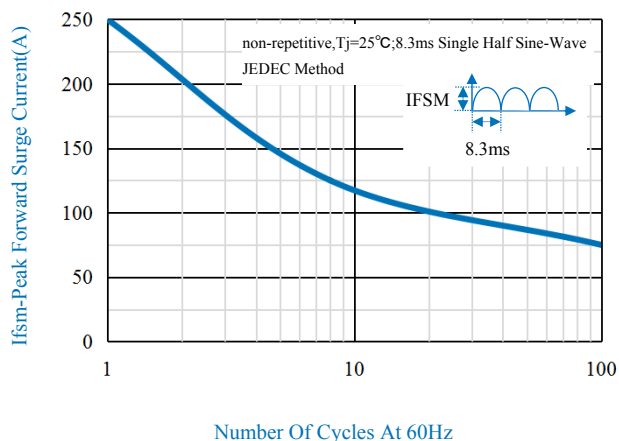


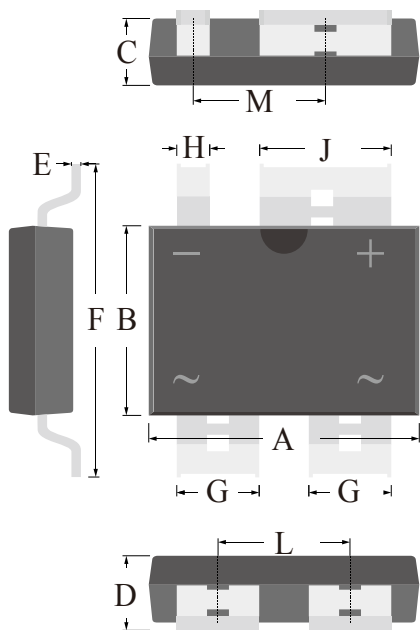
Fig.5-Max. Non-Repetitive Surge Current

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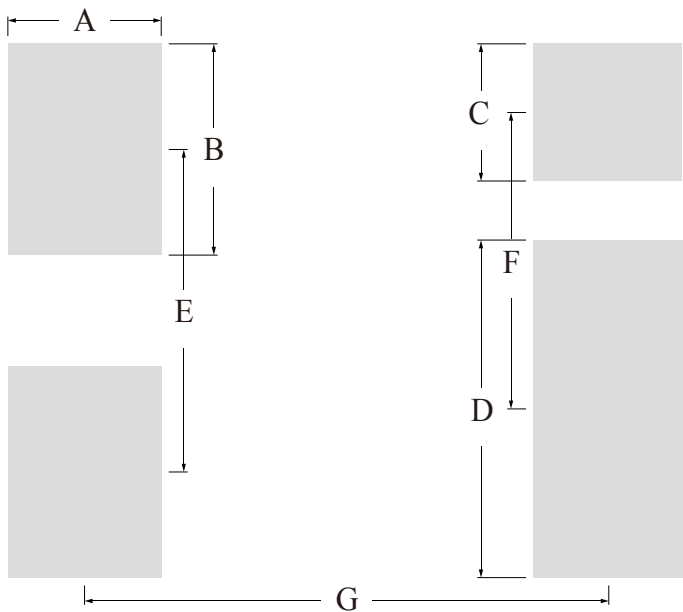
OUTLINE DRAWINGS



LDB-S

OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	19.50	20.40	21.50	0.7677	-	0.8465
B	12.25	13.10	13.75	0.4823	-	0.5413
C	3.30	3.60	3.90	0.1299	-	0.1535
D	3.50	3.80	4.10	0.1378	-	0.1614
E	0.25	0.40	0.55	0.0098	-	0.0217
F	19.00	20.00	21.00	0.7480	-	0.8268
G	5.50	6.05	6.50	0.2165	-	0.2559
H	2.35	2.65	2.95	0.0925	-	0.1161
J	9.00	9.50	10.00	0.3543	-	0.3937
L	9.00	9.55	10.00	0.3543	-	0.3937
M	9.00	9.55	10.00	0.3543	-	0.3937

RECOMMEDND LAYOUT DRAWINGS



LDB-S

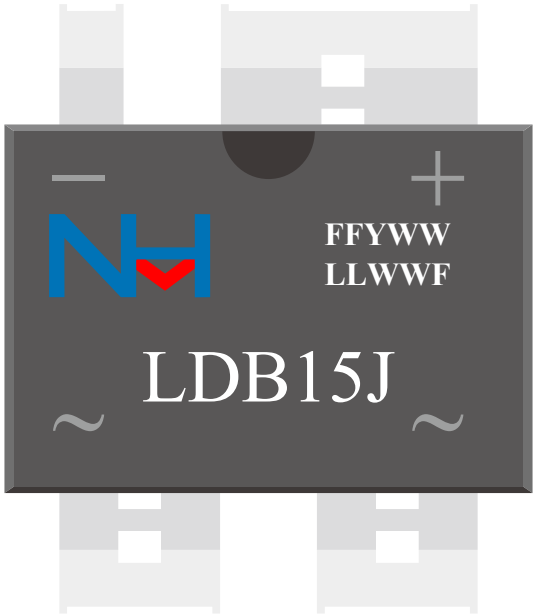
OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	3.80	-	-	0.1496	-
B	-	6.40	-	-	0.2520	-
C	-	3.00	-	-	0.1181	-
D	-	9.80	-	-	0.3858	-
E	-	9.90	-	-	0.3898	-
F	-	9.90	-	-	0.3898	-
G	-	16.90	-	-	0.6654	-

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MARKING



MARKING INSTRUCTION

NH=Niuhan Trademark
FF=Product Line Code,According To Actual Changes
YWW=Date Code,According To Actual Changes
LLWWF=Inernal Code,According To Actual Changes
LDB15J=Model
- ~ ~ +=Polarity Mark

PACKING INFORMATION

Package Type	Package Code	Product Weight Approx(g/Pcs)	Package Method	Quantity (Pcs/Min. Pack.)	Quantity (Pcs/Inner Box)	Quantity (Pcs/Carton)
LDB-S	P1	2.745	13" Reel	600	1200	6000

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Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow

	Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
	Average ramp-up rate (T _{smax} to T _p)	3°C/second max.	3°C/second max.
	Preheat-Temperature Min (T _S min) -Temperature Max (T _S max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
	Time maintained above: -Temperature (T _L) - Time (t _L)	183°C 60-150 seconds	217°C 60-150 seconds
	Peak Temperature(T _P)	240 +0/-5 °C	260 +0/-5 °C
	Time within 5°C of actual peak temperature (tp)	10-30 seconds	20-40 seconds
	Ramp down rate	6°C/second max.	6°C/second max.
	Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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Specification Revision History

Rev.	Date	Changed Items	Pre-Changed Content	Changed Content
A/1	2014-10-20	First Issue		
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