



## Silicon Dual Schottky Power Rectifier

### 35 Amp, 150 Volt

Qualified per MIL-PRF-19500/737

Qualified Levels:  
JAN, JANTX, and  
JANTXV

#### DESCRIPTION

This Dual Schottky rectifier device is military qualified up to a JANTXV level for high-reliability applications. They are hermetically sealed in a common cathode configuration offering very fast switching characteristics compared to fast or ultrafast rectifiers.

**Important:** For the latest information, visit our website <http://www.microsemi.com>.

#### FEATURES

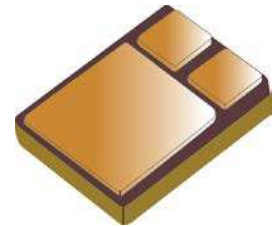
- JEDEC registered equivalent of 1N7039
- Hermetically isolated U1 package
- Internal metallurgical bonds
- Temperature independent switching behavior
- JAN, JANTX, and JANTXV qualifications are available per MIL-PRF-19500/737
- RoHS compliant versions available (commercial grade only)

#### APPLICATIONS / BENEFITS

- Schottky barrier rectifier diodes (dual) for military, space and other high reliability applications
- Switching power supplies or other applications requiring extremely fast switching and essentially no switching losses.
- Low forward voltage drop
- High forward surge capability
- Inherently radiation hard >100 krads as described in [MicroNote 050](#)

#### MAXIMUM RATINGS @ T<sub>A</sub> = +25 °C unless otherwise noted.


Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	T <sub>J</sub> and T <sub>STG</sub>	-65 to +150	°C
Thermal Resistance Junction-to-Case (2.3 °C/W maximum)	R <sub>θJC</sub>	1.67	°C/W
Working Peak Reverse Voltage	V <sub>RWM</sub>	150	V
Junction Capacitance	C <sub>J</sub>	350	pF
Average DC Output Current @ T <sub>C</sub> = +100 °C	I <sub>O</sub>	35	A
Non-Repetitive Sinusoidal Surge Current @ t <sub>p</sub> = 8.3 ms, T <sub>C</sub> = +25 °C	I <sub>FSM</sub>	200	A




**U1 (SMD-1)  
Package**

Also available in:

**TO-257AA package**  
(leaded)

 [1N7047CCT3](#)

**TO-254AA package**  
(leaded)

 [1N7039CCT1](#)

**MSC – Lawrence**

6 Lake Street,  
Lawrence, MA 01841  
Tel: 1-800-446-1158 or  
(978) 620-2600  
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**MSC – Ireland**

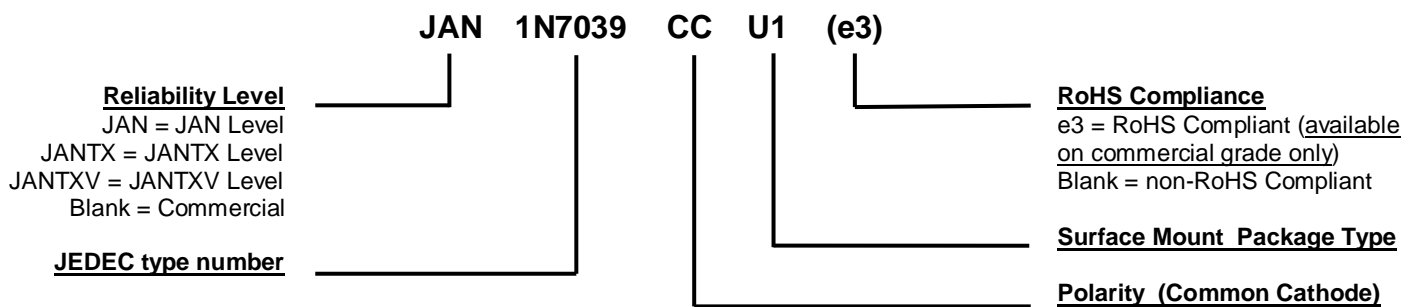
Gort Road Business Park,  
Ennis, Co. Clare, Ireland  
Tel: +353 (0) 65 6840044  
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**Website:**

[www.microsemi.com](http://www.microsemi.com)

**MECHANICAL and PACKAGING**

- CASE: Ceramic and gold over nickel plated steel
- TERMINALS: Gold over nickel plated tungsten/copper.
- MARKING: Part number, date code, and polarity symbol
- POLARITY: See [Schematic](#) on last page
- WEIGHT: Approximately 2.25 grams
- See [Package Dimensions](#) on last page.

**PART NOMENCLATURE**

**SYMBOLS & DEFINITIONS**

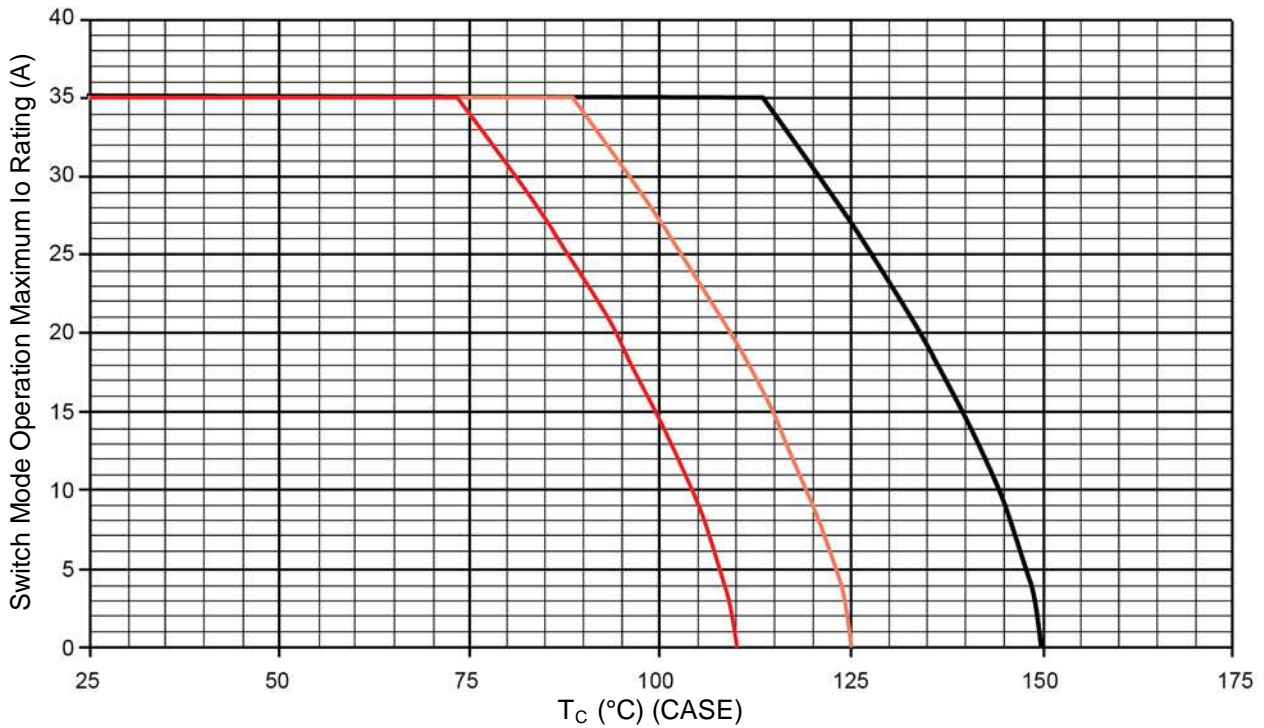
Symbol	Definition
$C_J$	Junction Capacitance: The junction capacitance in pF at a specified frequency (typically 1MHz) and specified voltage.
$I_F$	Forward current: The current flowing from the p-type region to the n-type region.
$I_R$	Reverse Current: The dc current flowing from the external circuit into the cathode terminal at the specified voltage $V_R$ .
$T_J$	Junction temperature: The temperature of a semiconductor junction.
$V_F$	Forward Voltage: A positive dc anode-cathode voltage the device will exhibit at a specified forward current.
$V_R$	Reverse Voltage: A positive dc cathode-anode voltage below the breakdown region.

**ELECTRICAL CHARACTERISTICS @  $T_A = +25\text{ }^\circ\text{C}$  unless otherwise noted**

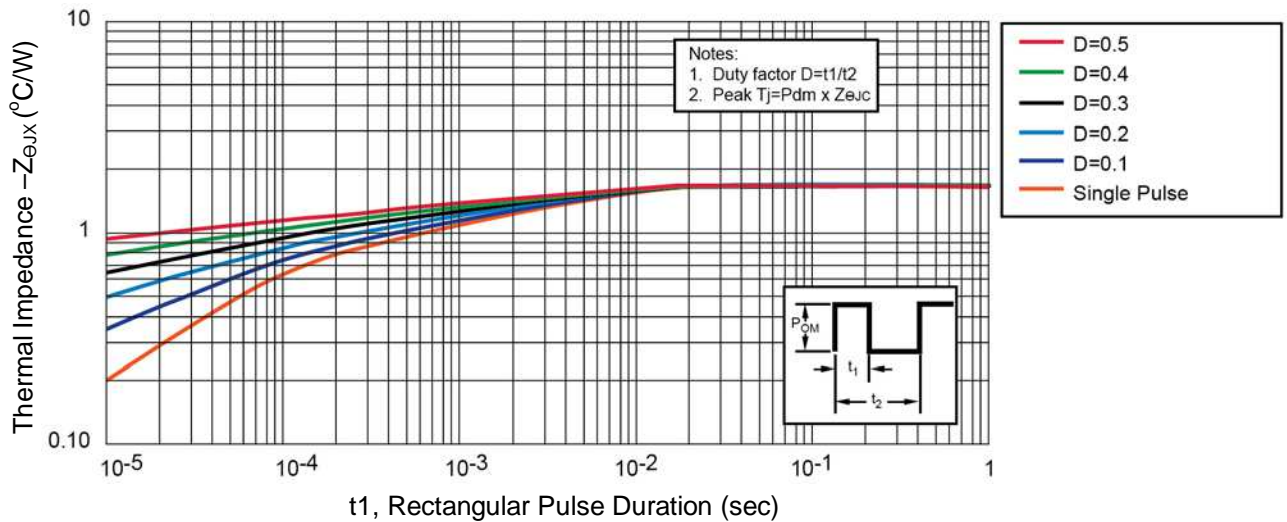
Parameters / Test Conditions	Symbol	Min.	Max.	Unit
<b>OFF CHARACTERISTICS</b>				
Forward Voltage* $I_F = 15\text{ A}$ $I_F = 35\text{ A}$ $I_F = 15\text{ A}, T_C = -55\text{ }^\circ\text{C}$ $I_F = 35\text{ A}, T_C = +125\text{ }^\circ\text{C}$	$V_F$		1.13 1.60 1.35 1.20	V
Reverse Current $V_R = 150\text{ V}$ $V_R = 150\text{ V}, T_C = +125\text{ }^\circ\text{C}$	$I_R$		0.5 15	mA

\* Pulse test: Pulse width 300  $\mu\text{sec}$ , duty cycle 2%.

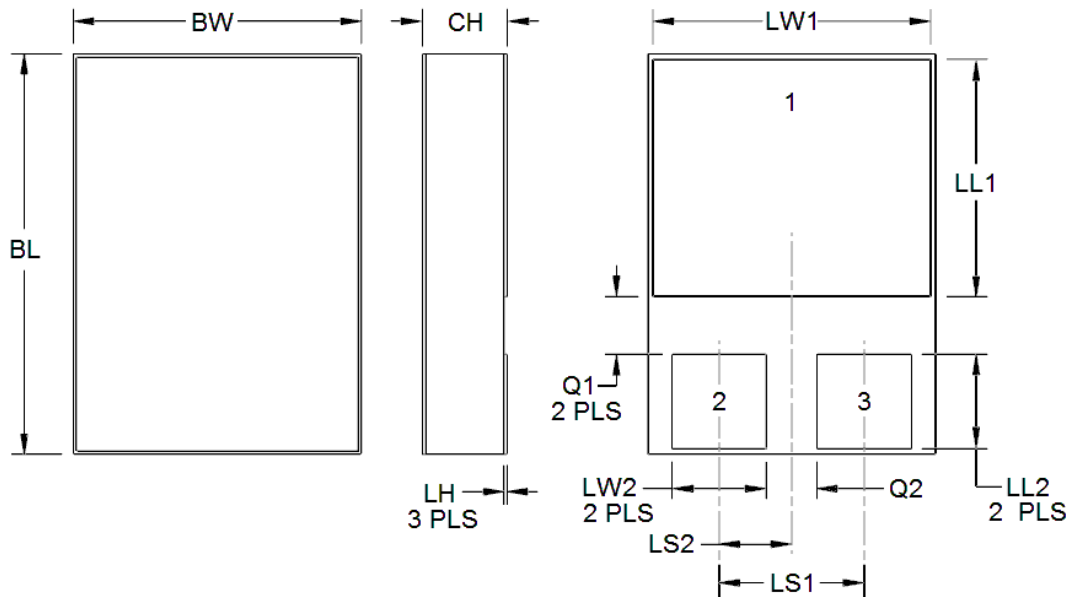
**GRAPHS**



**FIGURE 1**  
Temperature-Current Derating (for each leg)

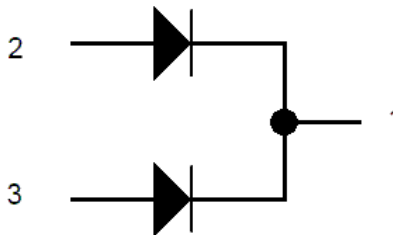


**FIGURE 2**  
Thermal Impedance (for each leg)

**PACKAGE DIMENSIONS**

**NOTES:**

1. Dimensions are in inches.
2. Millimeters are given for information only.
3. In accordance with ASME Y14.5M, diameters are equivalent to  $\Phi$ x symbology.

Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
<b>BL</b>	0.620	0.630	15.75	16.00
<b>BW</b>	0.445	0.455	11.30	11.56
<b>CH</b>	0.129	0.142	3.28	3.61
<b>LH</b>	0.010	0.020	0.26	0.51
<b>LW1</b>	0.370	0.380	9.40	9.65
<b>LW2</b>	0.135	0.145	3.43	3.68
<b>LL1</b>	0.410	0.420	10.41	10.67
<b>LL2</b>	0.152	0.162	3.86	4.12
<b>LS1</b>	0.200	0.220	5.08	5.59
<b>LS2</b>	0.100	0.110	2.54	2.79
<b>Q1</b>	0.030	-	0.76	
<b>Q2</b>	0.035	-	0.89	

**SCHEMATIC**


TERM 1 = CATHODE  
 TERM 2 = ANODE  
 TERM 3 = ANODE