



## Silicon Dual Schottky Power Rectifier

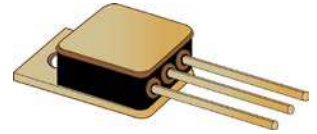
### 35 Amp, 150 Volt

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.



**TO-254AA Package**

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

#### FEATURES

- JEDEC registered equivalent of 1N7039
- Hermetically isolated TO-254AA 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)

Also available in:

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



[1N7047CCT3](#)

**U1 (SMD-1) package**  
(surface mount)



[1N7039CCU1](#)

#### 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>	1.9	°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>	180	A

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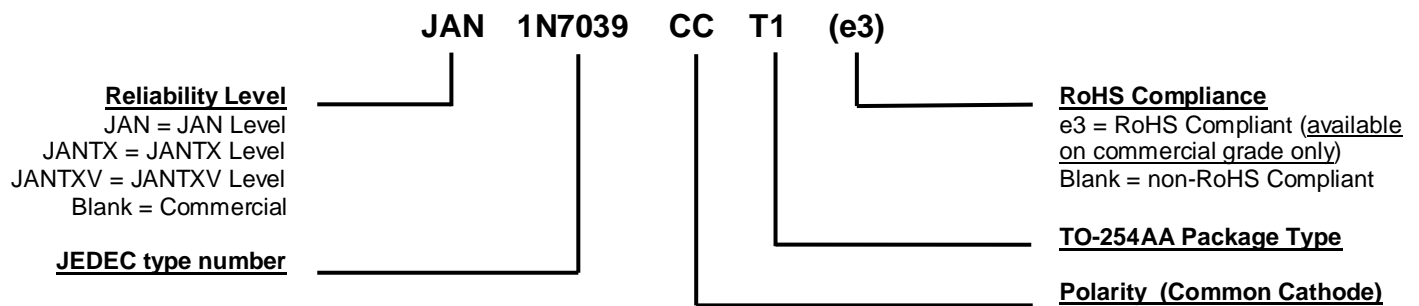
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**Website:**

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

**MECHANICAL and PACKAGING**

- CASE: Nickel plated copper base with steel frame and ceramic feed through
- TERMINALS: Nickel plated Cu cored Alloy 52
- Pins are Hot Solder Dip (Sn63/Pb37)
- MARKING: Part number, date code, and polarity symbol
- POLARITY: See [Schematic](#) on last page
- WEIGHT: Approximately 6.5 grams
- See [Package Dimensions](#) on last page.

**PART NOMENCLATURE**

**SYMBOLS & DEFINITIONS**

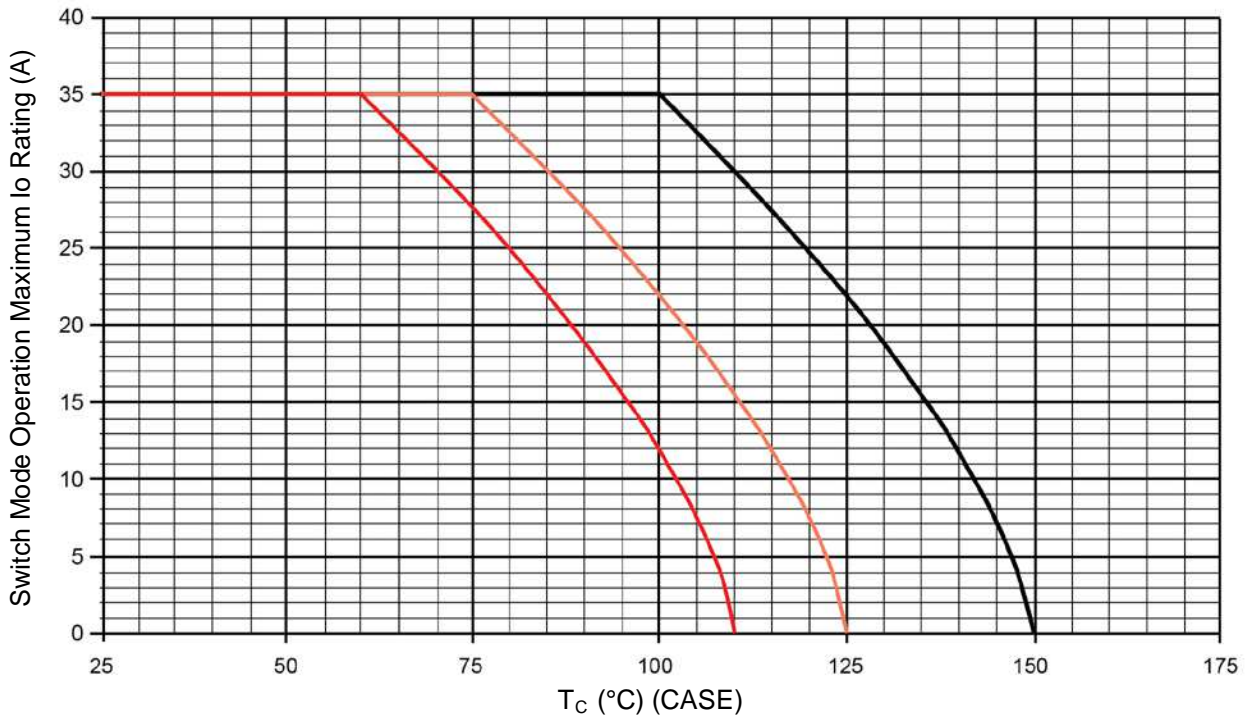
Symbol	Definition
$C_J$	Junction Capacitance: The junction capacitance in pF at a specified frequency (typically 1MHz) and specified voltage.
$I_F$	Forward current: The current flowing from the p-type region to the n-type region.
$I_R$	Reverse Current: The dc current flowing from the external circuit 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**

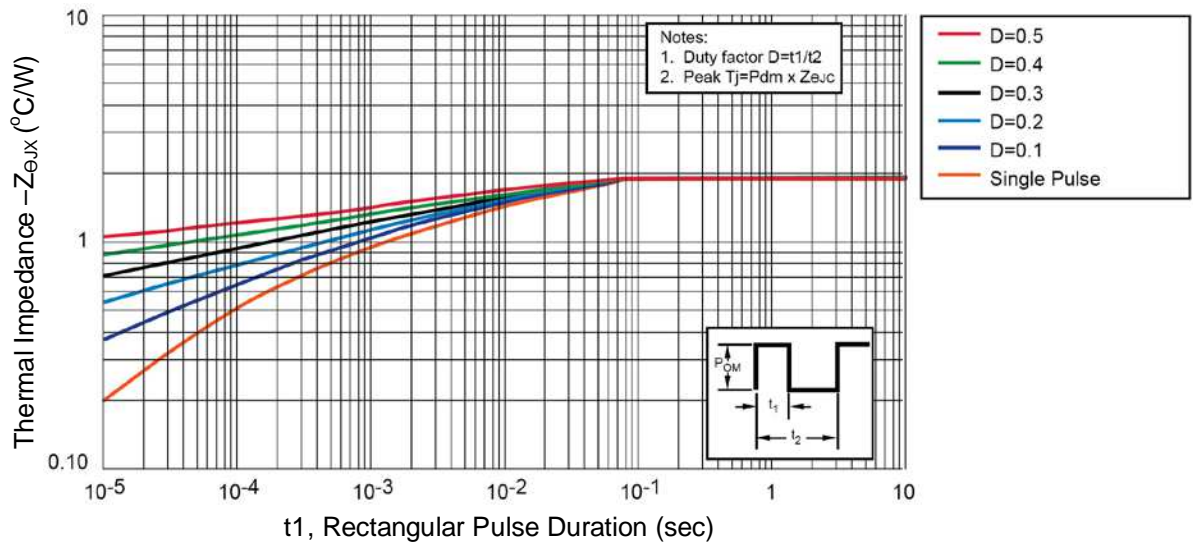
Parameters / Test Conditions	Symbol	Min.	Max.	Unit
<b>OFF CHARACTERISTICS</b>				
Forward Voltage* $I_F = 15\text{ A}$ $I_F = 35\text{ A}$ $I_F = 15\text{ A}, T_C = -55\text{ }^\circ\text{C}$ $I_F = 35\text{ A}, T_C = +125\text{ }^\circ\text{C}$	$V_F$		1.13 1.60 1.35 1.20	V
Reverse Current $V_R = 150\text{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

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

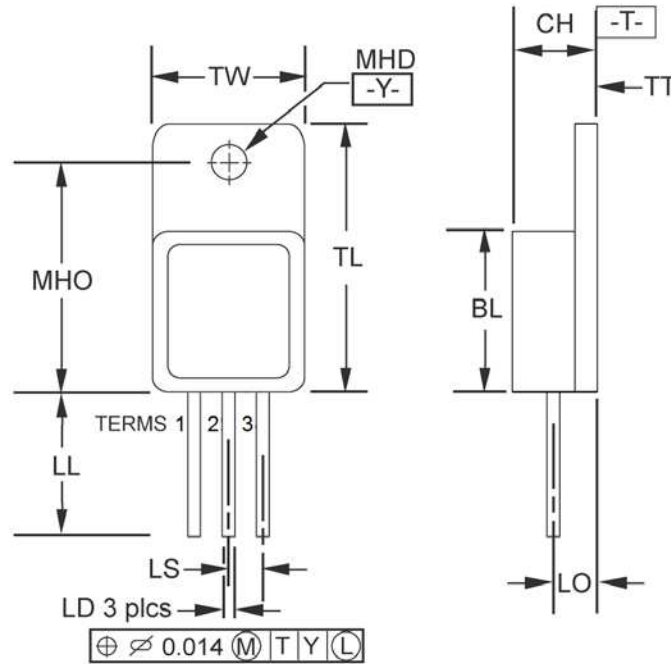
GRAPHS



**FIGURE 1**  
Temperature-Current Derating (entire package)

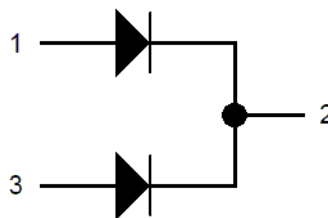


**FIGURE 2**  
Thermal Impedance (for each leg)

**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.

Ltr	Dimensions			
	Inch		Millimeters	
	Min	Max	Min	Max
<b>BL</b>	0.535	0.545	13.59	13.84
<b>CH</b>	0.249	0.260	6.32	6.60
<b>LD</b>	0.035	0.045	0.89	1.14
<b>LL</b>	0.510	0.570	12.95	14.48
<b>LO</b>	0.150 BSC		3.81 BSC	
<b>LS</b>	0.150 BSC		3.81 BSC	
<b>MHD</b>	0.139	0.149	3.53	3.78
<b>MHO</b>	0.665	0.685	16.89	17.40
<b>TL</b>	0.790	0.800	20.07	20.32
<b>TT</b>	0.040	0.050	1.02	1.27
<b>TW</b>	0.535	0.545	13.59	13.84

**SCHEMATIC**


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