



## Silicon Dual Schottky Power Rectifier

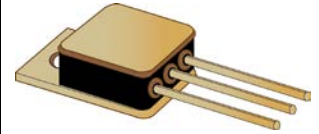
### 35 Amp, 150 Volt

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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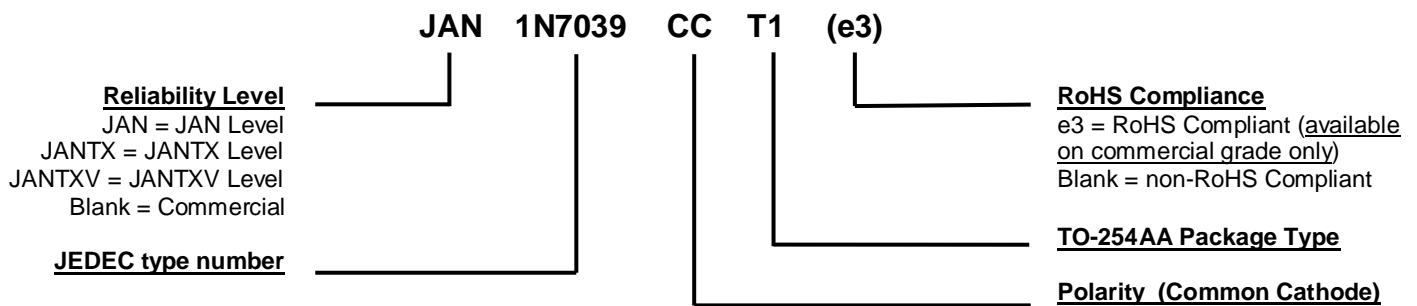
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**MECHANICAL and PACKAGING**

- 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**

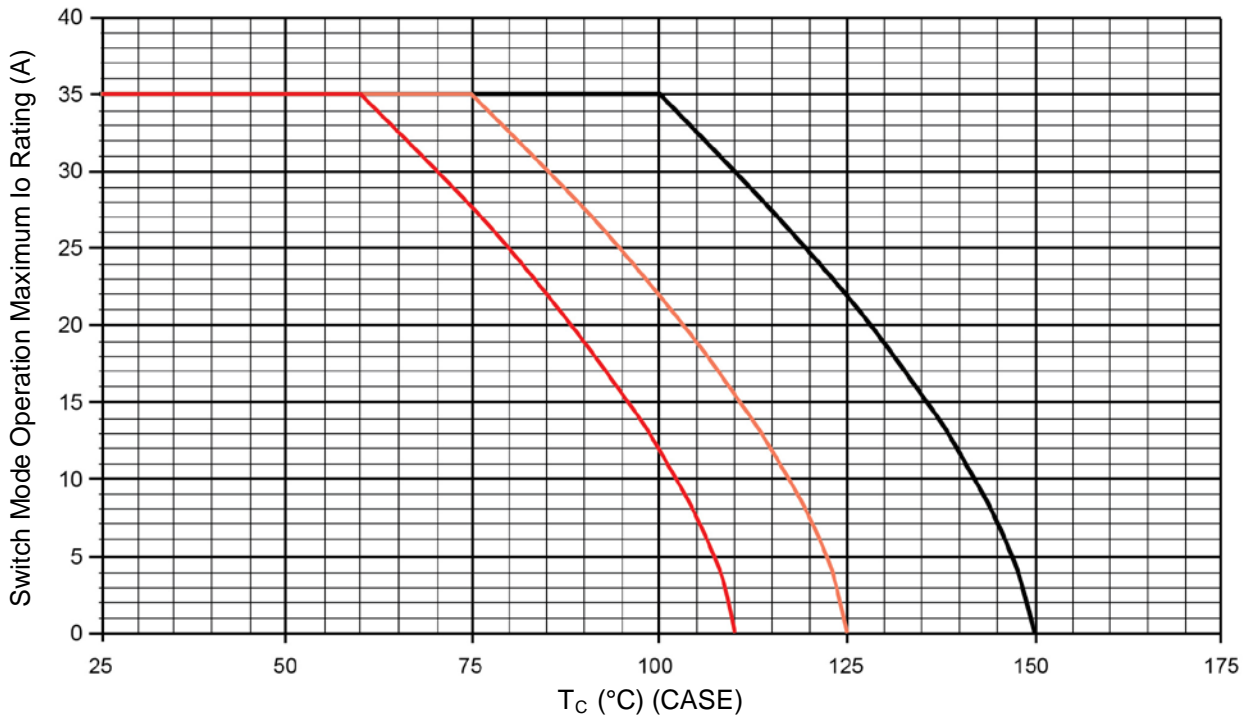
Symbol	Definition
$C_J$	Junction Capacitance: The junction capacitance in pF at a specified frequency (typically 1MHz) and specified voltage.
$I_F$	Forward current: The current flowing from the p-type region to the n-type region.
$I_R$	Reverse Current: The dc current flowing from the external circuit 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 @  $T_A = +25^\circ\text{C}$  unless otherwise noted**

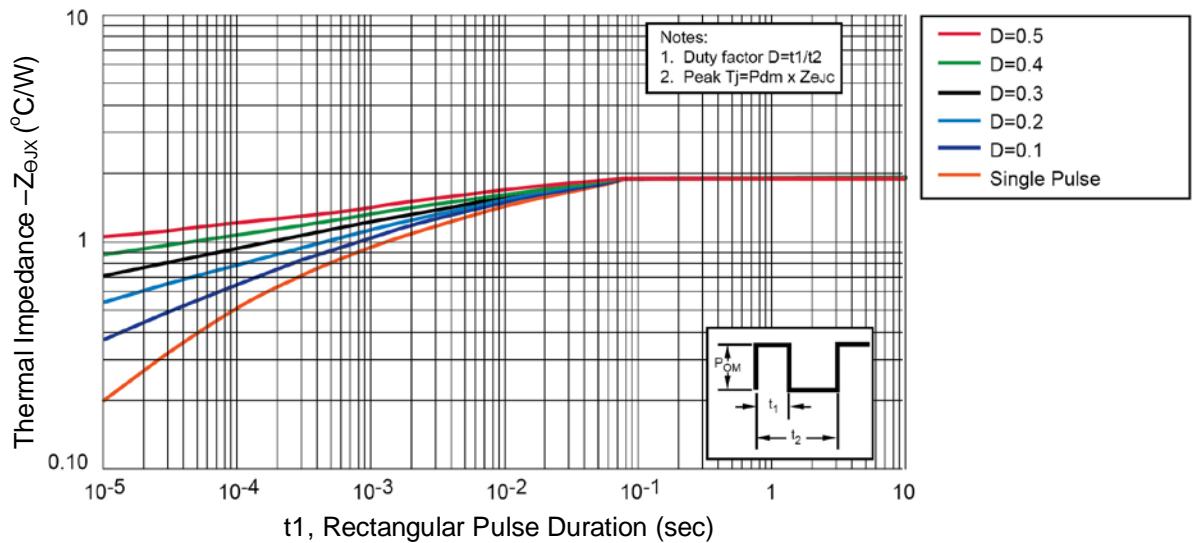
Parameters / Test Conditions	Symbol	Min.	Max.	Unit
<b>OFF CHARACTERISTICS</b>				
Forward Voltage*				
$I_F = 15\text{ A}$	$V_F$		1.13	V
$I_F = 35\text{ A}$			1.60	
$I_F = 15\text{ A}, T_C = -55^\circ\text{C}$			1.35	
$I_F = 35\text{ A}, T_C = +125^\circ\text{C}$			1.20	
Reverse Current				
$V_R = 150\text{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

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

GRAPHS

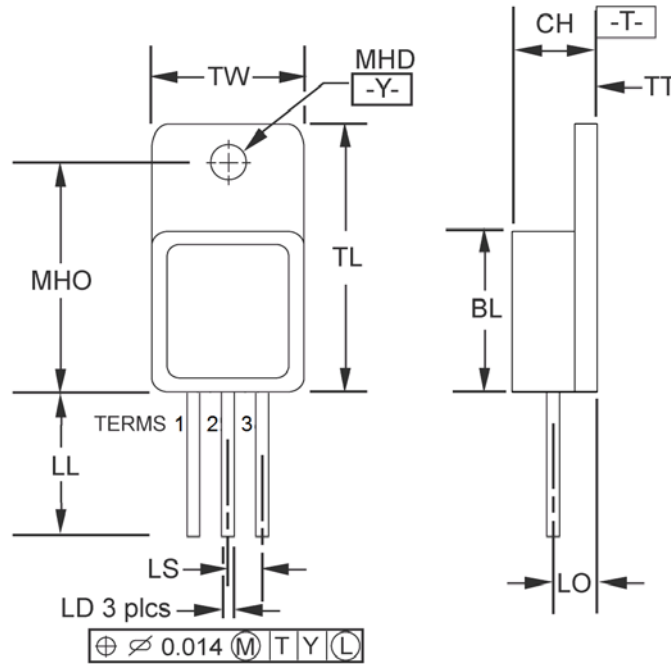


**FIGURE 1**  
Temperature-Current Derating (entire package)



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

PACKAGE DIMENSIONS

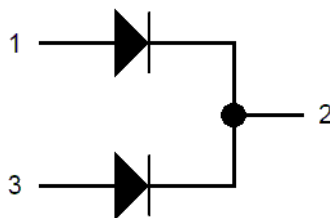


NOTES:

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

SCHEMATIC



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