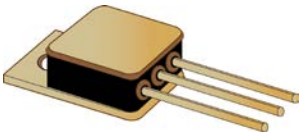
RoHS
Available on commercial versions

Silicon Dual Schottky Power Rectifier
16 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-257AA Package

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

FEATURES

- JEDEC registered equivalent of 1N7047
- Hermetically isolated TO-257AA 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-254AA package
(leaded)
1N7039CCT1

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_A = +25 °C unless otherwise noted.

Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	T_J and T_{STG}	-65 to +150	°C
Thermal Resistance Junction-to-Case (2.3 °C/W maximum)	$R_{\Theta JC}$	1.85	°C/W
Working Peak Reverse Voltage	V_{RWM}	150	V
Junction Capacitance	C_J	350	pF
Average DC Output Current @ T_C = +100 °C	I_O	16	A
Non-Repetitive Sinusoidal Surge Current @ t_p = 8.3 ms, T_C = +25 °C	I_{FSM}	120	A

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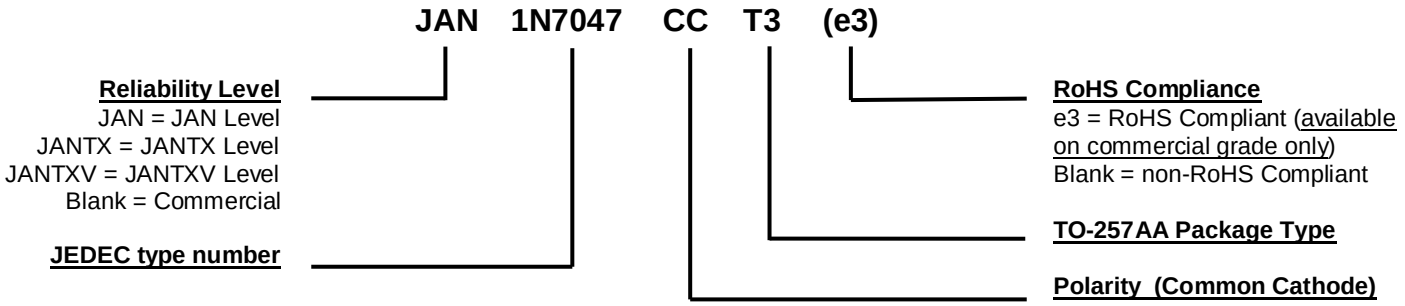
MECHANICAL and PACKAGING

- CASE: Nickel plated copper base & 1020 steel frame
- TERMINALS: Solder dipped copper cored 52 alloy plating
- MARKING: Alpha numeric
- POLARITY: See Schematic on last page
- WEIGHT: Approximately 3.43 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.

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ELECTRICAL CHARACTERISTICS @ T_A = +25 °C unless otherwise noted

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
OFF CHARACTERTICS				
Forward Voltage* I_F = 8 A I_F = 16 A I_F = 8 A, T_C = -55 °C I_F = 16 A, T_C = +125 °C	V_F		0.91 1.13 1.02 0.94	V
Reverse Current V_R = 150 V V_R = 150 V, T_C = +125 °C	I_R		0.5 15	mA

* Pulse test: Pulse width 300 µsec, duty cycle 2%.

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GRAPHS

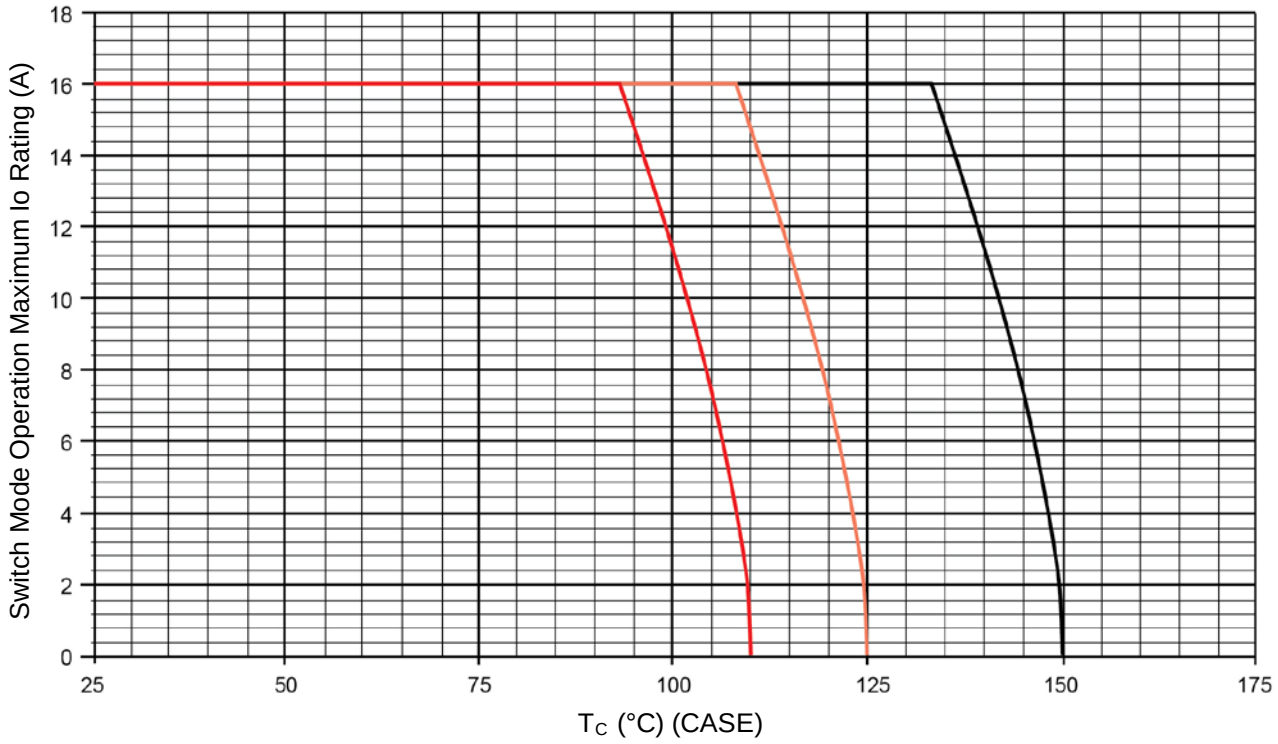

FIGURE 1
Temperature-Current Derating

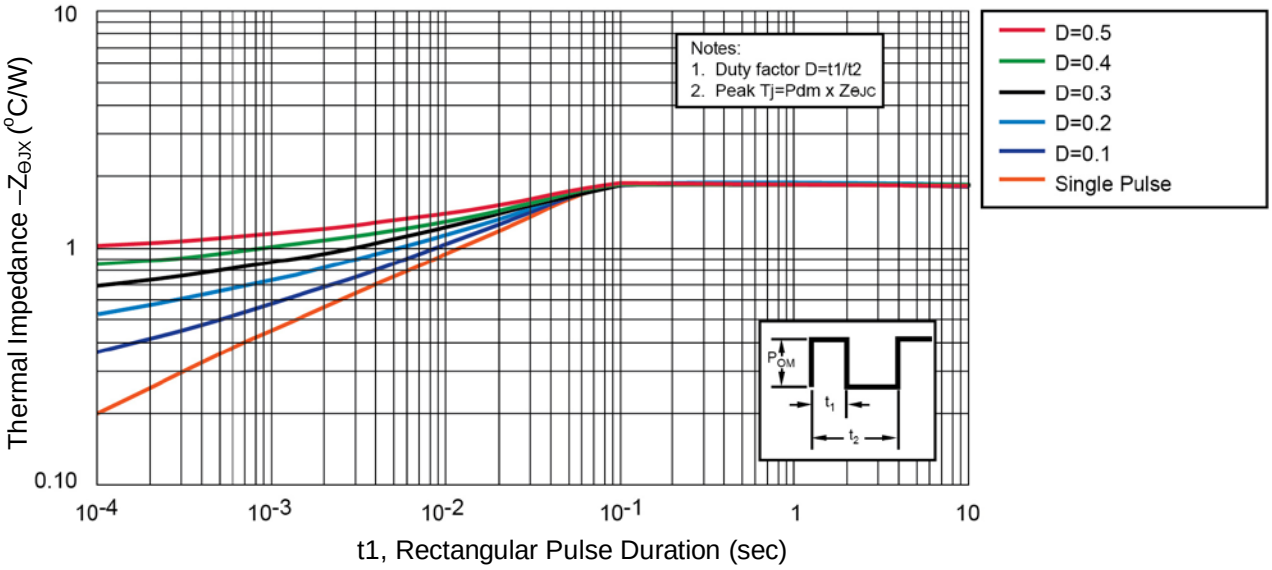

FIGURE 2
Thermal Impedance (for each leg)

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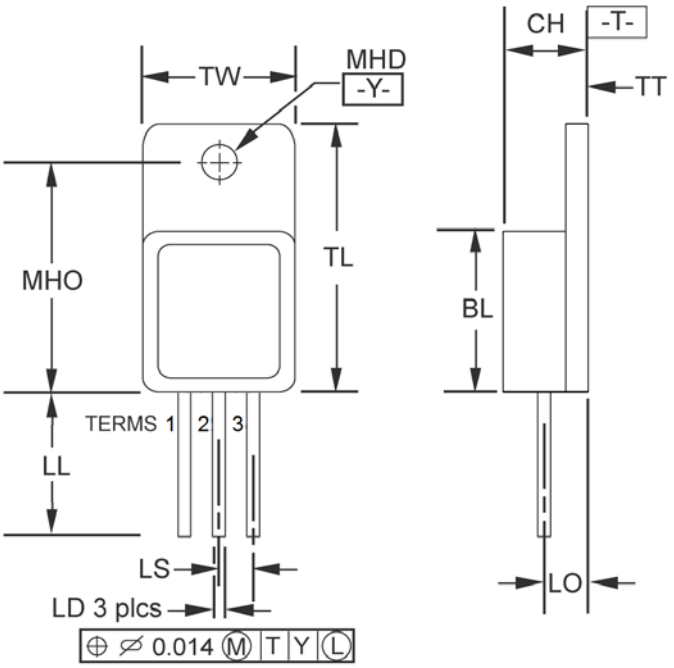
PACKAGE DIMENSIONS

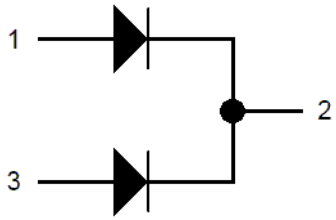


Ltr	Dimensions			
	Inch		Millimeters	
	Min	Max	Min	Max
BL	0.410	0.430	10.41	10.92
CH	0.190	0.200	4.83	5.08
LD	0.025	0.040	0.64	1.02
LL	0.500	0.750	12.70	19.05
LO	0.120 BSC		3.05 BSC	
LS	0.100 BSC		2.54 BSC	
MHD	0.140	0.150	3.56	3.81
MHO	0.527	0.537	13.39	13.64
TL	0.645	0.665	16.38	16.89
TT	0.035	0.045	0.89	1.14
TW	0.410	0.420	10.41	10.67

NOTES:

1. Dimensions are in inches.
2. Millimeter equivalents are given for information only.
3. Glass meniscus included in dimension TL and BL.

SCHEMATIC



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

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