



## 60 Volts, 10 Amp Dual Schottky Common Cathode Center Tap Rectifier

*Qualified per MIL-PRF-19500/680*

Qualified Levels:  
JAN, JANTX, and  
JANTXV

### DESCRIPTION

This low-profile 1N6842U3 Schottky rectifier device is military qualified up to a JANTXV level for high-reliability applications.

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

### FEATURES

- Surface mount equivalent of JEDEC registered 1N6842
- Low profile ceramic SMD
- Hermetically sealed package
- Ultrasonic aluminum wire bonds
- Low capacitance
- JAN, JANTX, JANTXV qualifications available per MIL-PRF-19500/680
- RoHS compliant by design

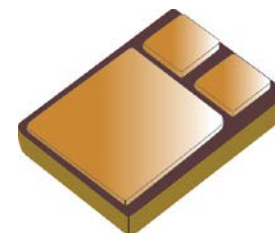
### APPLICATIONS / BENEFITS

- High surge rating
- Low reverse leakage current
- Low forward voltage
- Seam welded package

### MAXIMUM RATINGS @ $T_C = +25^\circ\text{C}$ unless otherwise noted

Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	$T_J$ and $T_{STG}$	-65 to +150	$^\circ\text{C}$
Thermal Resistance Junction-to-Case (on each leg)	$R_{\theta JC}$	2.8	$^\circ\text{C/W}$
Working Peak Reverse Voltage	$V_{RWM}$	60	V
Average Rectified Output Current @ $T_C = +100^\circ\text{C}$ per leg <sup>(1)</sup>	$I_O$	10	A
Surge Peak Forward Current @ $t_p = 8.3$ ms half-sine wave	$I_{FSM}$	200	A

**Note:** 1. Derate linearly at 200 mA/ $^\circ\text{C}$  from  $T_C = +100^\circ\text{C}$  to +150  $^\circ\text{C}$ .



**U3 (SMD-0.5)  
Package**

#### **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,  
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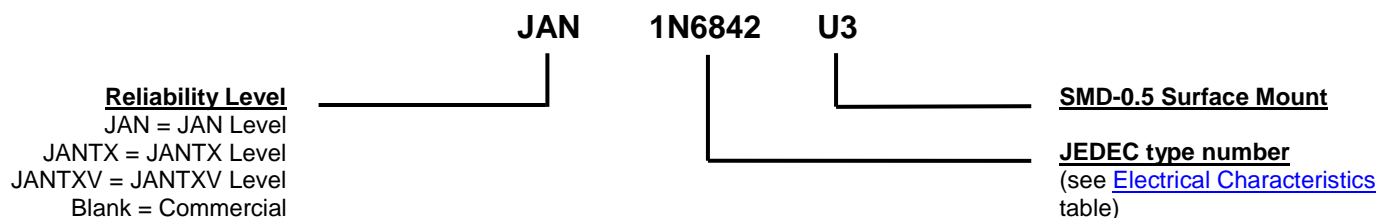
#### **Website:**

[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, A = anode
- POLARITY: See [schematic](#) on last page
- WEIGHT: Approximately 0.9 grams
- See [Package Dimensions](#) on last page.

### PART NOMENCLATURE



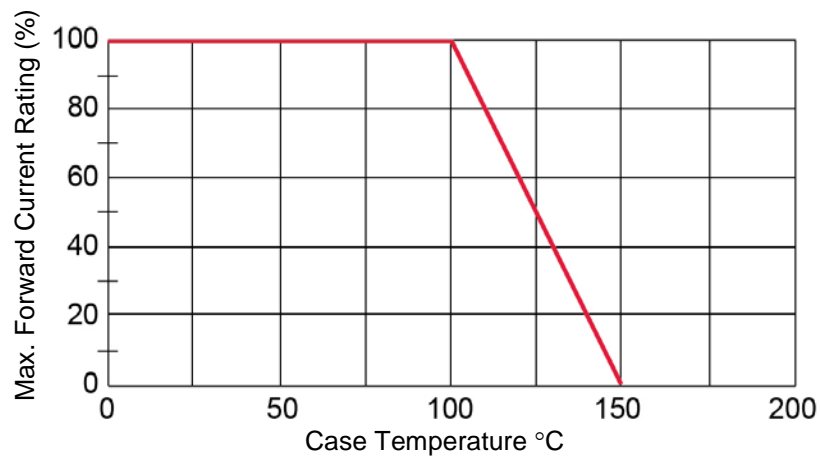
### SYMBOLS & DEFINITIONS

Symbol	Definition
C	Capacitance: The capacitance in pF at a frequency of 1 MHz and specified voltage.
f	frequency
I <sub>F</sub>	Forward Current: The dc current flowing from the external circuit into the anode terminal.
I <sub>FSM</sub>	Surge Peak Forward Current: The forward current including all nonrepetitive transient currents but excluding all repetitive transients (ref JESD282-B)
I <sub>R</sub>	Reverse Current: The dc current flowing from the external circuit into the cathode terminal at the specified voltage V <sub>R</sub> .
V <sub>F</sub>	Forward Voltage: A positive dc anode-cathode voltage the device will exhibit at a specified forward current.
V <sub>R</sub>	Reverse Voltage: A positive dc cathode-anode voltage below the breakdown region.
V <sub>RWM</sub>	Working Peak Reverse Voltage: The peak voltage excluding all transient voltages (ref JESD282-B). Also sometimes known historically as PIV.

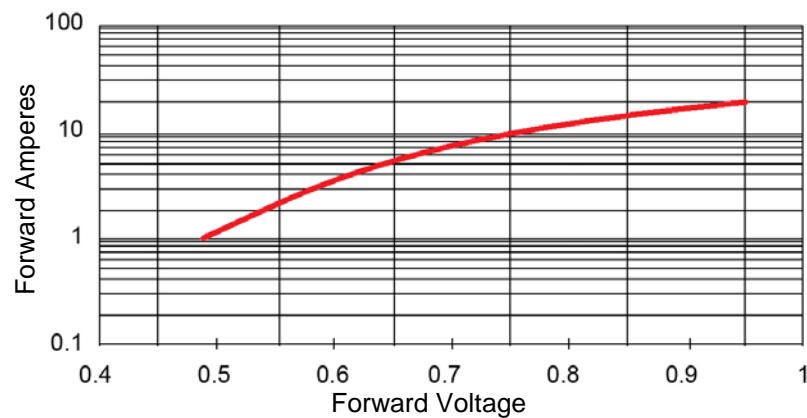
### ELECTRICAL CHARACTERISTICS @ T<sub>A</sub> = +25 °C unless otherwise noted

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
<b>CHARACTERISTICS per Leg</b>				
Forward Voltage*				
I <sub>F</sub> = 3 A, 300 μs Pulse	V <sub>F</sub>		0.62	V
I <sub>F</sub> = 10 A, 300 μs Pulse			0.78	
I <sub>F</sub> = 15 A, 300 μs Pulse			0.90	
I <sub>F</sub> = 10 A, T <sub>A</sub> = +100 °C, 300 μs Pulse			0.70	
I <sub>F</sub> = 15 A, T <sub>A</sub> = +100 °C, 300 μs Pulse			0.80	
Reverse Current				
V <sub>R</sub> = 60 V	I <sub>R</sub>		50	μA
V <sub>R</sub> = 60 V, T <sub>A</sub> = +100 °C			10	mA
Junction Capacitance				
V <sub>R</sub> = 5 V	C		400	pF
f = 1 MHz, V <sub>SIG</sub> = 50 mV (p-p) (max)				

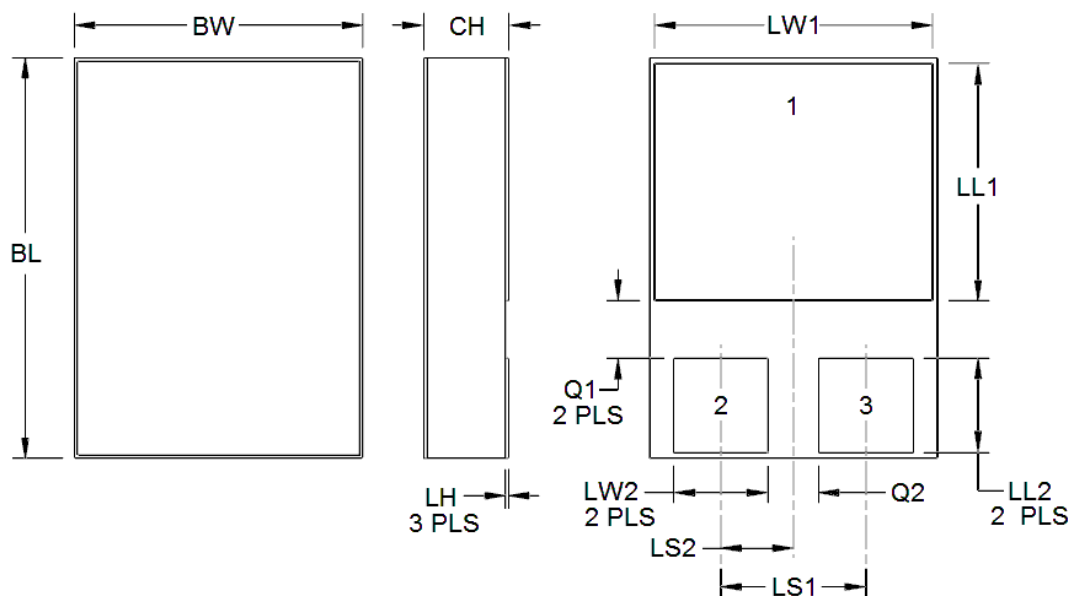
\* Pulse test: Pulse width 300 μsec, duty cycle 2%

**GRAPHS**


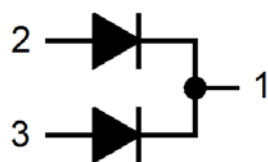
**FIGURE 1**  
Derating Curve



**FIGURE 2**  
Typical Forward Voltage versus Forward Current

**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  $\Phi$  symbology.



Schematic

Symbol	DIMENSIONS			
	INCH		MILLIMETERS	
	Min	Max	Min	Max
<b>BL</b>	0.395	0.405	10.03	10.29
<b>BW</b>	0.291	0.301	7.39	7.65
<b>CH</b>	0.108	0.124	2.74	3.15
<b>LH</b>	0.010	0.020	0.25	0.51
<b>LL1</b>	0.220	0.230	5.59	5.84
<b>LL2</b>	0.115	0.125	2.92	3.18
<b>LS1</b>	0.150 BSC		3.81 BSC	
<b>LS2</b>	0.075 BSC		1.91 BSC	
<b>LW1</b>	0.281	0.291	7.14	7.39
<b>LW2</b>	0.090	0.100	2.29	2.54
<b>Q1</b>	0.030		0.76	
<b>Q2</b>	0.030		0.76	
<b>Term 1</b>	Common Cathode			
<b>Term 2</b>	Anode (See Schematic)			
<b>Term 3</b>	Anode (See Schematic)			