RoHS Compliant

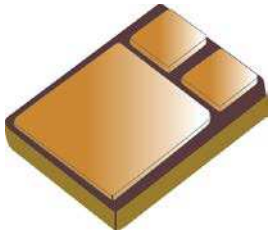
45 Volts, 30 Amp Schottky Rectifier Ceramic Surface Mount

Qualified per MIL-PRF-19500/682

Qualified Levels:
JAN, JANTX, and JANTXV

DESCRIPTION

This low-profile 1N6845U3 Schottky rectifier device is military qualified up to a JANTXV level for high-reliability applications.



U3 (SMD-0.5) Package

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

FEATURES

- Surface mount equivalent of JEDEC registered 1N6845.
- Low profile ceramic SMD.
- JAN, JANTX, JANTXV qualifications available per MIL-PRF-19500/682.
- RoHS compliant by design.

APPLICATIONS / BENEFITS

- High surge rating.
- Low reverse leakage current.
- Low forward voltage.
- Low power losses.

MAXIMUM RATINGS @ T_C = +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	$R_{\Theta JC}$	2.0	°C/W
Working Peak Reverse Voltage	V_{RWM}	45	V
Average Rectified Output Current @ T_C = +55 °C (1)	I_O	30	A
Non-Repetitive Sinusoidal Surge Current @ t_p = 8.3 ms	I_{FSM}	300	A

Note: 1. Derate I_O as shown in Figure 2 where derating starts at T_C = +55 °C for rated V_{RWM}. Higher temperature derating curves also apply to progressively lower voltages as shown.

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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

JAN **1N6845** **U3**

Reliability Level
JAN = JAN Level
JANTX = JANTX Level
JANTXV = JANTXV Level
Blank = Commercial

JEDEC type number
(see Electrical Characteristics table)

SMD-0.5 Surface Mount

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 forward current dc value, no alternating component.
I_R	Reverse Current: The maximum reverse (leakage) current that will flow at the specified voltage and temperature.
T_J	Junction Temperature: The temperature of a semiconductor junction.
V_F	Forward Voltage: The forward voltage the device will exhibit at a specified current (typically shown as maximum value).
V_R	Reverse Voltage: The reverse voltage dc value, no alternating component.

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

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Forward Voltage*				
I_F = 10 A (pk)			0.65	
I_F = 20 A (pk)			0.72	
I_F = 40 A (pk)	V_F		0.86	V
I_F = 10 A (pk), T_C = +100 °C			0.55	
I_F = 20 A (pk), T_C = +100 °C			0.67	
I_F = 10 A (pk), T_C = -55 °C			0.78	
Reverse Current				
V_R = 45 V	I_R		0.1	mA
V_R = 45 V, T_C = +100 °C			10.0	
Junction Capacitance V_R = 5 V f = 1 MHz V_{SIG} = 50 mV (p-p)	C_J		800	pF

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

GRAPHS

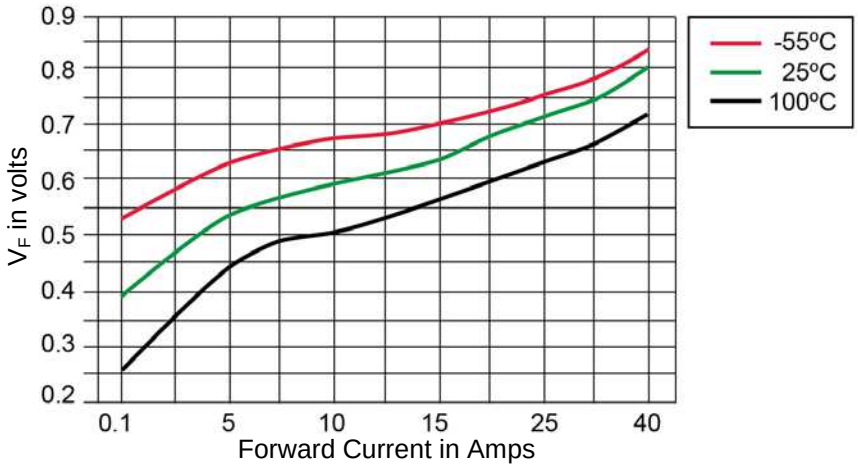


FIGURE 1
1N6845U3 Typical V_F at I_O

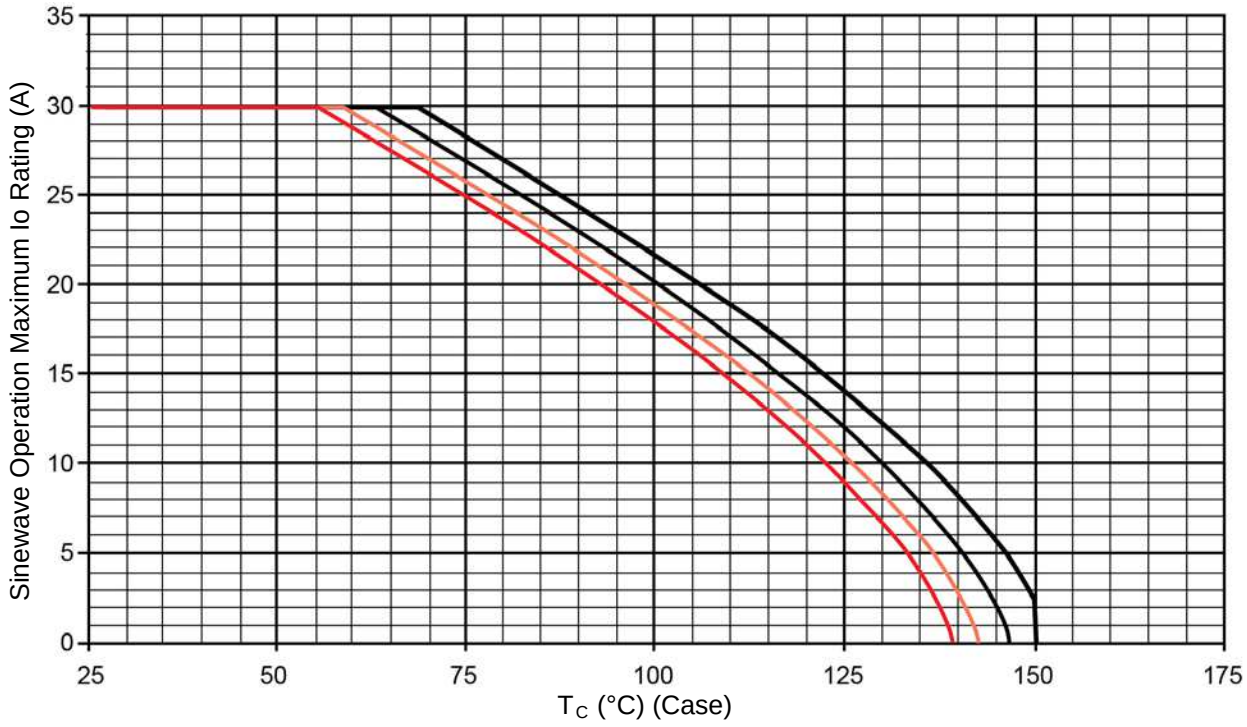
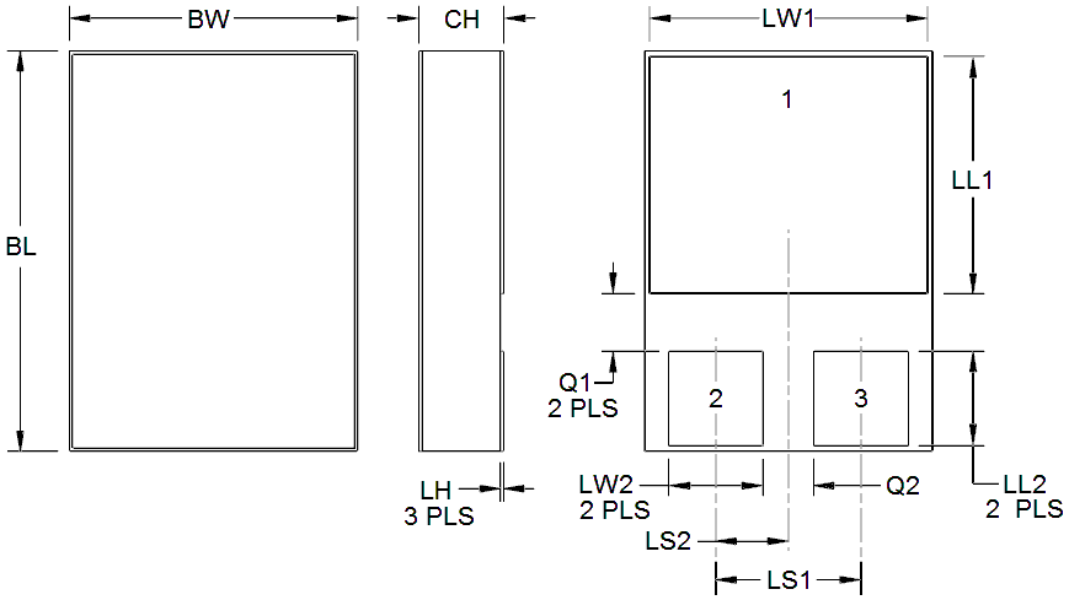


FIGURE 2
Temperature – Current Derating Curve

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 Φx symbology.

Symbol	DIMENSIONS			
	INCH		MILLIMETERS	
	Min	Max	Min	Max
BL	0.395	0.405	10.03	10.29
BW	0.291	0.301	7.39	7.65
CH	0.112	0.124	2.84	3.15
LH	0.010	0.020	0.25	0.51
LL1	0.220	0.230	5.59	5.84
LL2	0.115	0.125	2.92	3.18
LS1	0.150 BSC		3.81 BSC	
LS2	0.075 BSC		1.91 BSC	
LW1	0.281	0.291	7.14	7.39
LW2	0.090	0.100	2.29	2.54
Q1	0.030	-	0.76	-
Q2	0.030	-	0.76	-
Term 1	Common Cathode			
Term 2	Anode (See Schematic)			
Term 3	Anode (See Schematic)			

Schematic