1N6844U3

Silicon Schottky Barrier Diode

Rev. V1

Features

- Available in JAN, JANTX, JANTXV and JANS per MIL-PRF-19500/679
- Low Forward Voltage and Reverse Leakage
- Reverse Breakdown Voltage: 100 V
- Hermetically Sealed, Low Profile Ceramic SMD0.5 package (U3)
- High Surge Capability
- Low Capacitance

Description

The 1N6844U3 silicon Schottky diode offers a large reverse breakdown voltage with low forward voltage. The die, which is passivated with an advanced high-reliability passivation for very fast settling time and low leakage current, is packaged in the industry standard U3 hermetically sealed surface mount package.

This rugged device is capable of reliable operation in all space, military, and industrial applications.

The 1N6844U3 is designed to be used in a wide variety of applications, such as high frequency switching power supplies and resonant power converters.

Electrical Specifications: T_C = +25°C (unless otherwise specified)

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Reverse Leakage Current	V_R = 100 V (pk)	I_{R1}	mA	—	0.100
Reverse Leakage Current	T_C = +125°C V_R = 100 V (pk)	I_{R2}	mA	—	15.0
Forward Voltage	I_F = 5.0 A (pk) I_F = 15 A (pk) I_F = 20 A (pk)	V_{F1} V_{F2} V_{F3}	V	—	0.70 0.90 1.00
Forward Voltage	T_C = +125°C I_F = 5.0 A (pk) I_F = 15 A (pk)	V_{F4} V_{F5}	V	—	0.58 0.72
Forward Voltage	T_C = -55°C I_F = 5.0 A (pk)	V_{F6}	V	—	0.85
Junction Capacitance	V_R = 5 V dc, f =1 MHz, V_{SIG} = 50 mV (p-p)	C_J	pF	—	600
Dielectric Withstanding Voltage	V_R = 500 V dc; all leads shorted; measure from leads to case	I_{RES}	µA	—	10

Absolute Maximum Ratings (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Absolute Maximum
Working Voltage	V_{RWM}	100 V dc
Average Rectified Output Current (1) (T_C = +125°C)	I_O	15 A dc
Forward Surge Current	I_{FSM}	250 A (pk)
Junction Temperature	T_J	-65°C to +150°C
Storage Temperature	T_{STG}	-65°C to +150°C
Junction Capacitance (@ 5V)	C_J	600 pF

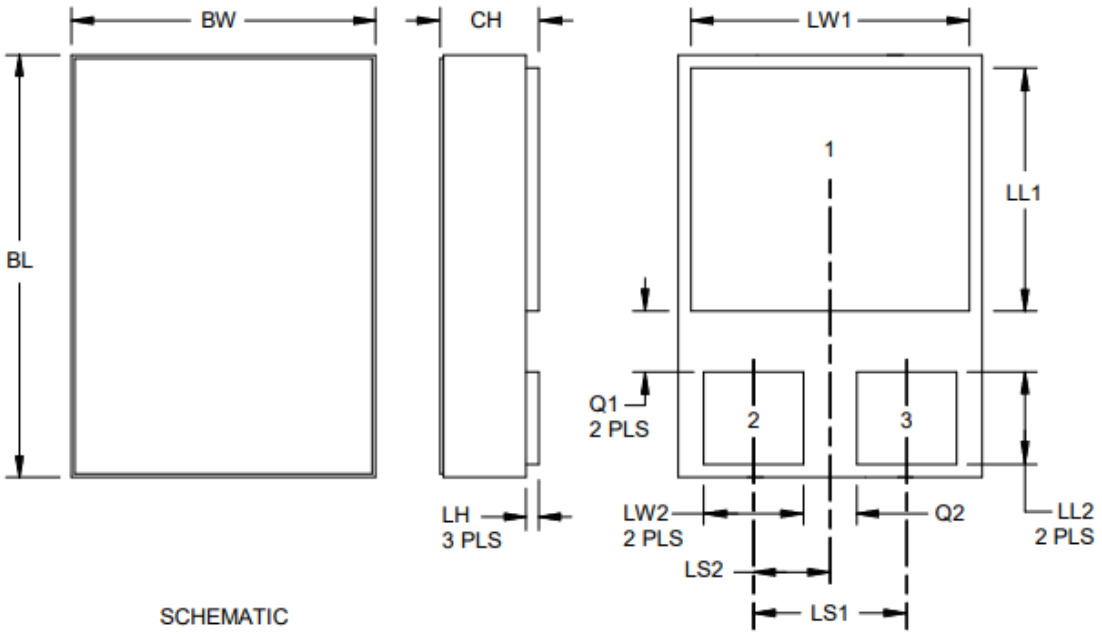
Thermal Characteristics (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Absolute Maximum
Junction to Case	$R_{\theta JC}$	2.0°C/W
Junction to Ambient	$R_{\theta JA}$	40°C/W

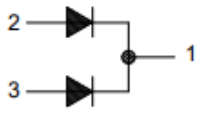
(1) See temperature current derating curve on page 4.

Exceeding any one or combination of these limits may cause permanent damage to this device.
VPT Components does not recommend sustained operation near these survivability limits.

Outline (TO-276AA) (U3)



SCHEMATIC



Symbol	Dimensions				Symbol	Dimensions			
	Inches		Millimeters			Inches		Millimeters	
	Min	Max	Min	Max		Min	Max	Min	Max
BL	.395	.405	10.03	10.29	LS1	.150 BSC		3.81 BSC	
BW	.291	.301	7.39	7.65	LS2	.075 BSC		1.91 BSC	
CH	.108	.124	2.74	3.15	LW1	.281	.291	7.14	7.39
LH	.010	.020	0.25	0.51	LW2	.090	.100	2.29	2.54
LL1	.220	.230	5.59	5.84	Q1	.030		0.76	
LL2	.115	.125	2.92	3.18	Q2	.030		0.76	

NOTES:
1. Dimensions are in inches. Millimeters are given for general information only.
2. Terminal 1 is common cathode. Terminal 2 is anode 1 and terminal 3 is anode 2.
3. In accordance with ASME Y14.5M, diameters are equivalent to ϕx symbology.

FIGURE 1. Physical dimensions and configuration of TO-276 (SMD-0.5) package.

Graphs

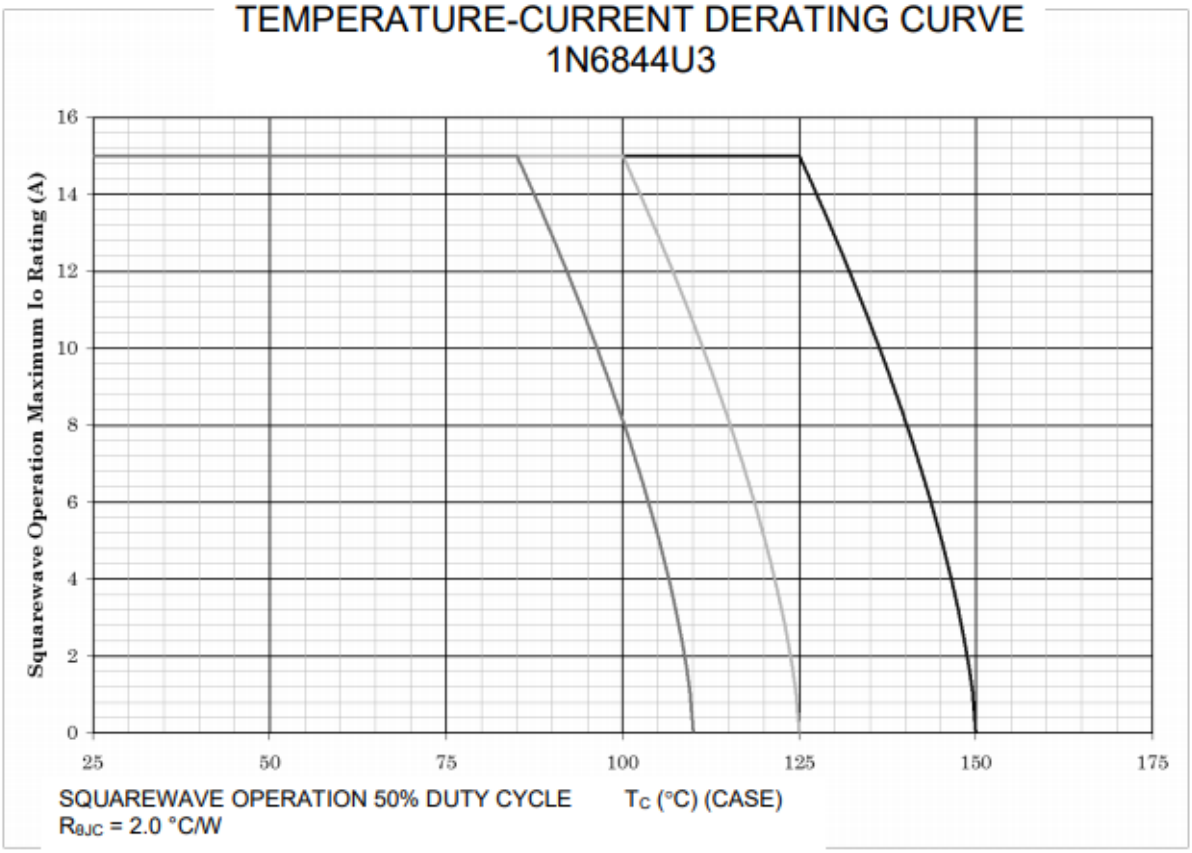


FIGURE 2. Temperature-current derating curve.

Graphs

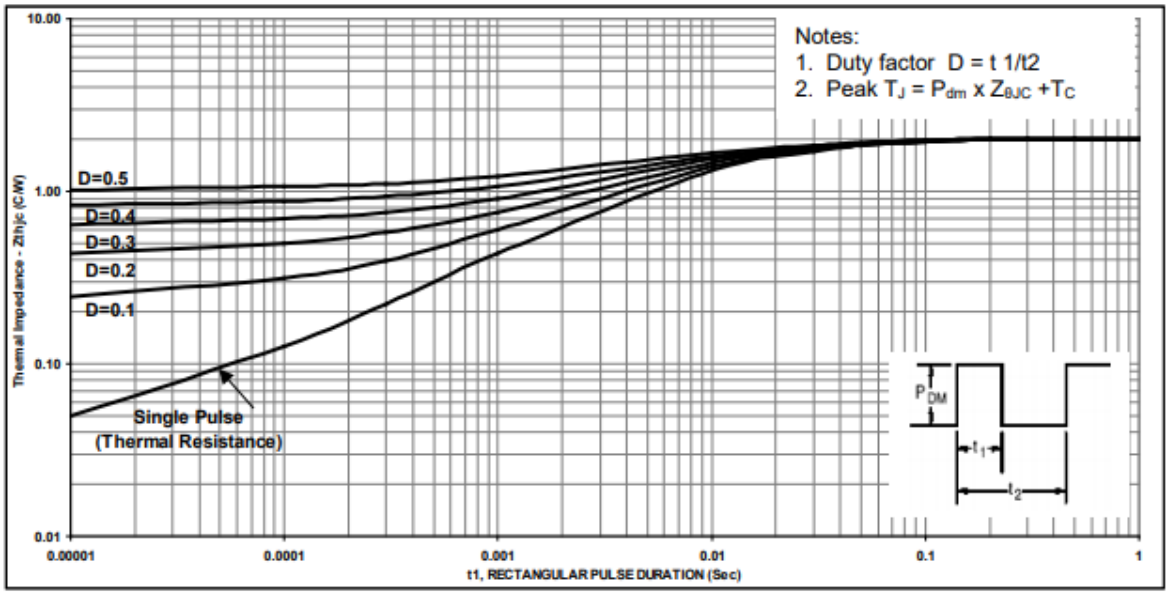


FIGURE 3. Thermal impedance.