



35 and 45 VOLT, 10 AMP DUAL SCHOTTKY COMMON CATHODE CENTER TAP RECTIFIER

Qualified per MIL-PRF-19500/678

Qualified Levels:
JAN, JANTX, and
JANTXV

DESCRIPTION

These low-profile 1N6840U3 and 1N6841U3 dual schottky rectifier devices are military qualified up to a JANTXV level for high-reliability applications. Microsemi also offers numerous other products to meet higher and lower power voltage regulation applications.

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

FEATURES

- Surface mount equivalent of JEDEC registered 1N6840 and 1N6841.
- Low profile ceramic SMD.
- JAN, JANTX, JANTXV qualifications available per MIL-PRF-19500/678.
- RoHS compliant by design.

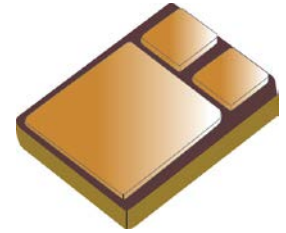
APPLICATIONS / BENEFITS

- High surge rating.
- Low reverse leakage current.
- Low forward voltage.
- Seam welded package.
- Low power loss.
- Ultrasonic aluminum wire bonds.

MAXIMUM RATINGS PER LEG @ $T_C = +25^\circ\text{C}$ 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 ⁽¹⁾ (each individual diode)	$R_{\theta JC}$	2.8	$^\circ\text{C/W}$
Peak Working Reverse Voltage	V_{RWM}	35 45	V
		1N6840U3 1N6841U3	
Junction Capacitance	C_J	400	pF
Average Rectified Output Current @ $T_C = +100^\circ\text{C}$ ⁽²⁾	I_O	10	A
Surge Peak Forward Current @ $t_p = 8.3$ ms	I_{FSM}	200	A

- NOTES:** 1. 1.7°C/W both legs tied together.
2. Derate linearly at $200\text{ mA}/^\circ\text{C}$ from $T_J = T_C = +100^\circ\text{C}$ 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
Fax: (978) 689-0803

MSC – Ireland

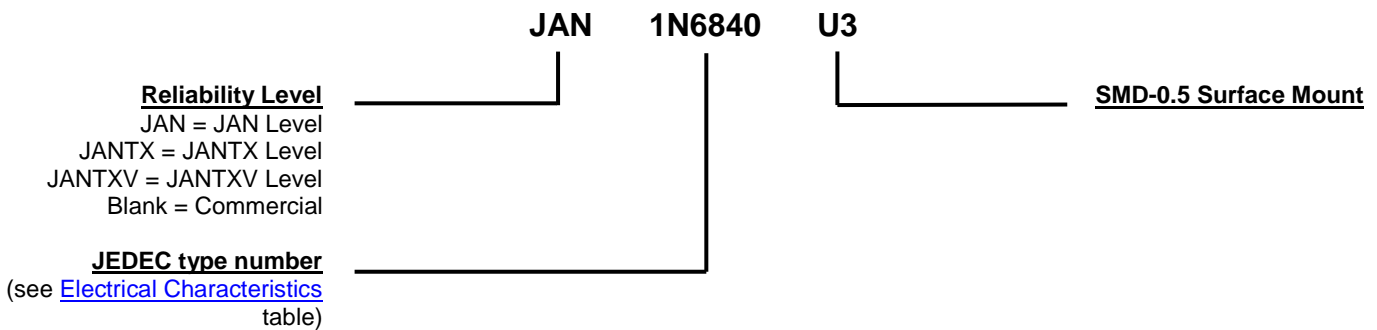
Gort Road Business Park,
Ennis, Co. Clare, Ireland
Tel: +353 (0) 65 6840044
Fax: +353 (0) 65 6822298

Website:

www.microsemi.com

MECHANICAL and PACKAGING

- CASE: Ceramic and gold over nickel plated steel.
- TERMINALS: Gold over nickel plated tungsten/copper.
- MARKING: Manufacturer ID, part number, date code, common cathode symbol.
- POLARITY: See [schematic](#) on last page.
- WEIGHT: 0.9 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_{FM}	Maximum Forward Current: The maximum 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 PER LEG @ $T_A = +25\text{ }^\circ\text{C}$ unless otherwise noted

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Instantaneous Forward Voltage Drop $I_{FM} = 3\text{ A}$, $T_A = 25\text{ }^\circ\text{C}$, 300 μs Pulse $I_{FM} = 10\text{ A}$, $T_A = 25\text{ }^\circ\text{C}$, 300 μs Pulse $I_{FM} = 20\text{ A}$, $T_A = 25\text{ }^\circ\text{C}$, 300 μs Pulse	V_F		0.62 0.75 0.88	V
Instantaneous Forward Voltage Drop $I_F = 10\text{ A}$, $T_A = 100\text{ }^\circ\text{C}$, 300 μs Pulse $I_F = 20\text{ A}$, $T_A = 100\text{ }^\circ\text{C}$, 300 μs Pulse $I_F = 10\text{ A}$, $T_A = -55\text{ }^\circ\text{C}$, 300 μs Pulse	V_F		0.63 0.70 0.85	V
Reverse Leakage Current Rated V_R , $T_A = 25\text{ }^\circ\text{C}$, 300 μs pulse minimum	I_R	1N6840U3, $V_R = 35\text{ V}$ 1N6841U3, $V_R = 45\text{ V}$	100	μA
Reverse Leakage Current Rated V_R , $T_A = 100\text{ }^\circ\text{C}$, 300 μs pulse minimum	I_R	1N6840U3, $V_R = 35\text{ V}$ 1N6841U3, $V_R = 45\text{ V}$	15	mA
Junction Capacitance $V_R = 5\text{ V}$, $T_A = 25\text{ }^\circ\text{C}$, $f = 1\text{ MHz}$ $V_{SG} = 50\text{ mV}$ (p-p) (max)	C_J		400	pF

GRAPHS

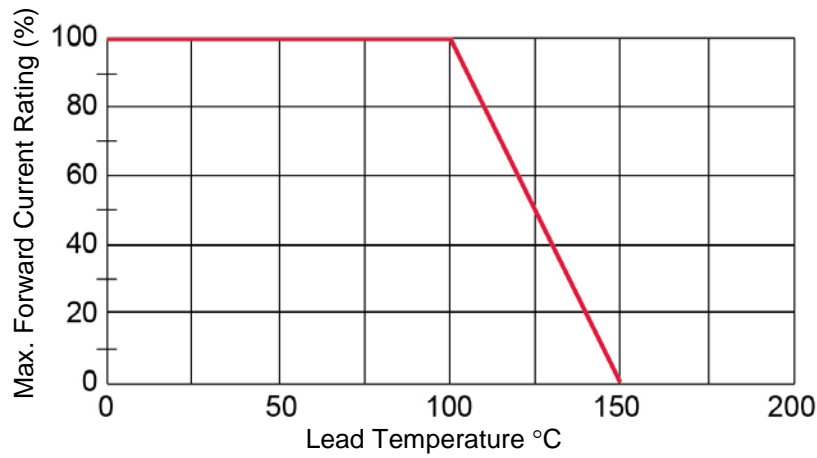


FIGURE 1
 Typical Operating Curves
 ($T_A = 25\text{ }^\circ\text{C}$ Unless otherwise specified)

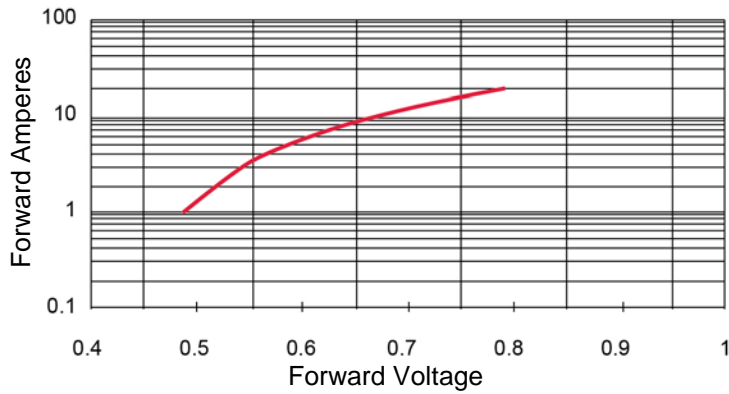
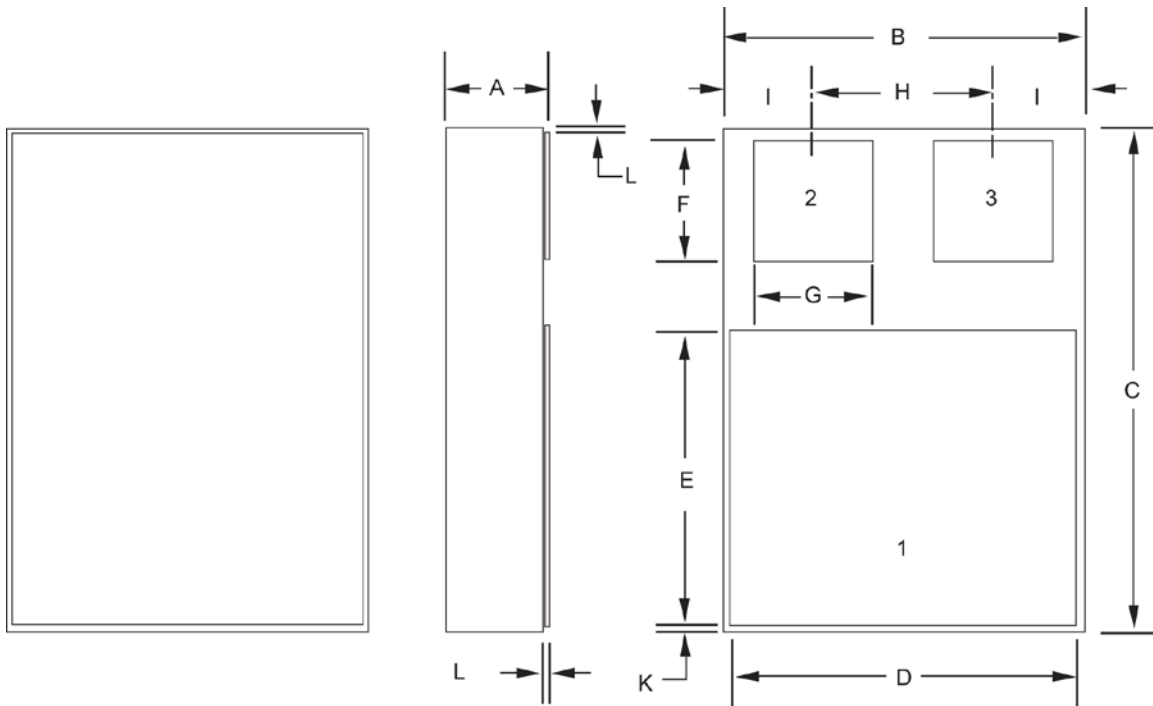
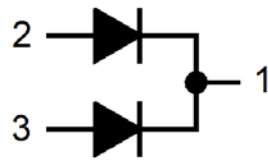


FIGURE 2
 1N6841 V_F vs. I_F

PACKAGE DIMENSIONS

NOTES:

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. In accordance with ASME Y14.5M, diameters are equivalent to Φ x symbology.



Schematic

Symbol	DIMENSIONS			
	INCH		MILLIMETERS	
	Min	Max	Min	Max
A	0.111	0.122	2.82	3.10
B	0.291	0.301	7.39	7.65
C	0.395	0.405	10.03	10.29
D	0.281	0.291	7.14	7.39
E	0.220	0.230	5.59	5.84
F	0.115	0.125	2.92	3.18
G	0.090	0.100	2.29	2.54
H	0.125	0.135	3.18	3.43
I	0.073 TYP.		1.85 TYP.	
J	0.083 TYP.		2.11 TYP.	
K	0.005 TYP.		0.13 TYP.	
L	0.015 TYP.		0.38 TYP.	
Term 1	Common Cathode			
Term 2	Anode 1 (See Schematic)			
Term 3	Anode 2 (See Schematic)			