

**SURFACE MOUNT  
SCHOTTKY BARRIER RECTIFIER**

**REVERSE VOLTAGE – 40 Volts  
FORWARD CURRENT – 1 Amperes**

**FEATURES**

- Very low profile package
- High efficiency
- Negligible switching losses
- Low forward voltage drop, low power loss
- Qualification is according to AEC-Q101 Rev\_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

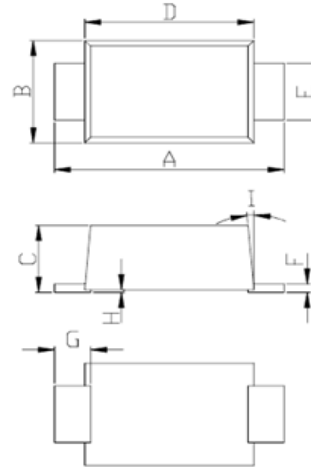
**APPLICATION**

- Low voltage high frequency inverters
- DC to DC converters
- Polarity protection applications

**MECHANICAL DATA**

- Package: JEDEC DO-219AA
- Package Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free".
- Moisture Sensitivity: Level 1 per J-STD-020
- Lead free finish, RoHS compliant
- Weight: 16.3 mg (Approximate)
- Marking code: 140

**F1A**



F1A			
DIM	MIN	TYP	MAX
A	3.50	3.80	3.90
B	1.70	1.90	2.00
C	0.81	1.18	1.20
D	2.70	2.80	2.90
E	0.80	1.00	1.35
F	0.05	0.15	0.30
G	0.35	0.60	0.85
H	0.03	0.07	0.10
I	0°	5°	8°

All dimension in millimeter

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.

**ABSOLUTE RATINGS**

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	40	V
Maximum DC blocking voltage	$V_{DC}$	40	V
Maximum Average rectified output current	$I_{(AV)}$	1	A
Peak forward surge current 8.3ms single half sine-wave Superimposed on rated load.	$I_{FSM}$	30	A
Operating junction and Storage Temperature range	$T_J, T_{STG}$	-55 to +150	°C

**STATIC ELECTRICAL CHARACTERISTICS**

PARAMETER	TEST CONDITIONS		SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	$I_F=1A$	$T_J=25^{\circ}C$ $T_J=125^{\circ}C$	$V_F$	-- 0.55	0.675 0.595	V
Leakage current	$V_R=40V$	$T_J=25^{\circ}C$ $T_J=125^{\circ}C$	$I_R$	-- 0.47	25 5	$\mu A$ mA
Typical junction capacitance (Note 5)			$C_J$	45		pF

**THERMAL CHARACTERISTICS**

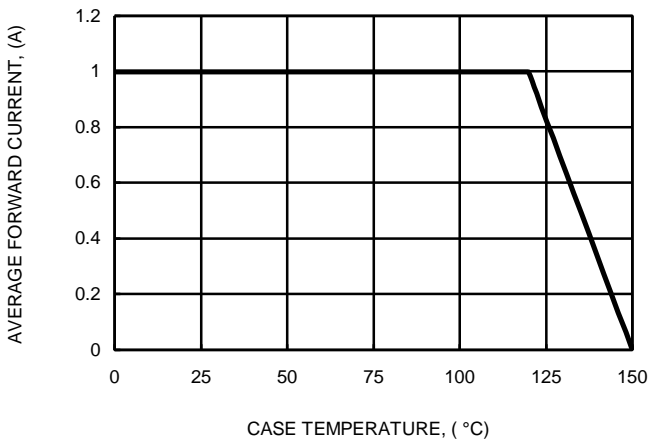
PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Note 6)	$R_{thJA}$	125	°C/W
	$R_{thJC}$	50	
	$R_{thJL}$	30	

**Notes:**

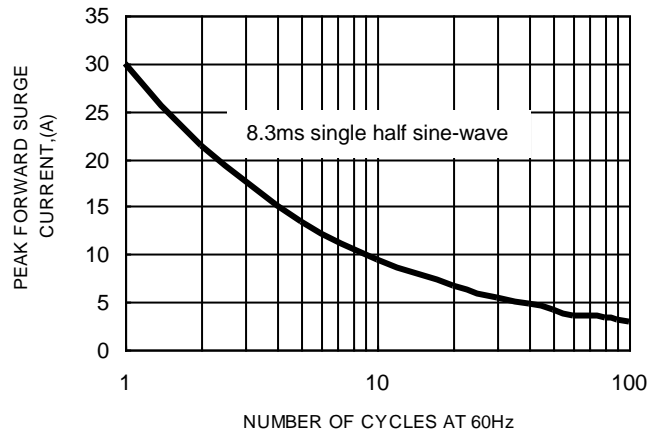
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. 300us pulse width, 2% duty cycle.
5. Measured at 1.0MHz and applied voltage of 4.0VDC.
6. Thermal resistance test performed in accordance with JESD-51.

**RATING AND CHARACTERISTIC CURVES**  
**FB140E**

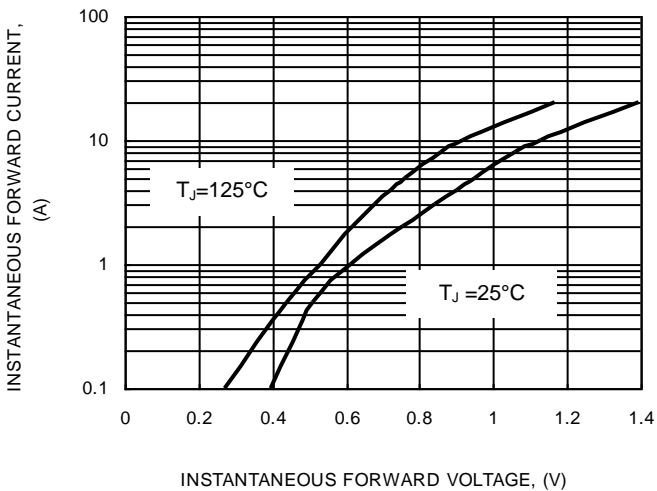
**FIG.1 FORWARD CURRENT DERATING CURVE**



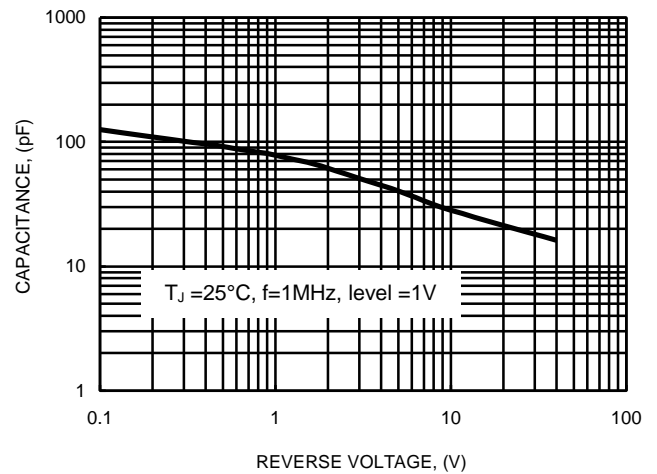
**FIG.2 MAXIMUM NON-REPETITIVE SURGE CURRENT**



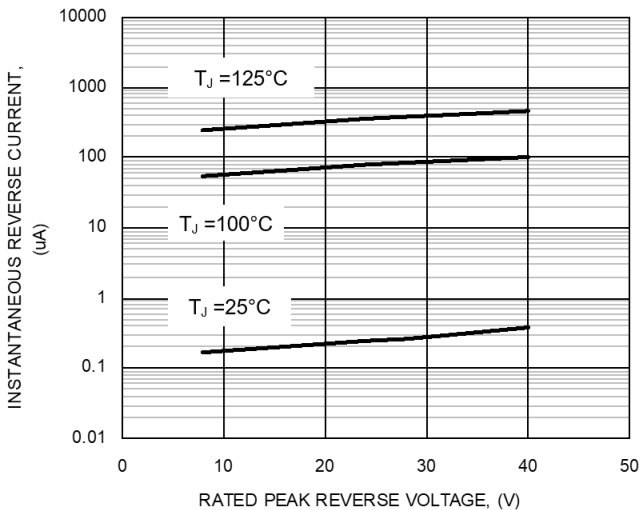
**FIG.3 TYPICAL FORWARD CHARACTERISTICS**



**FIG.4 TYPICAL JUNCTION CAPACITANCE**



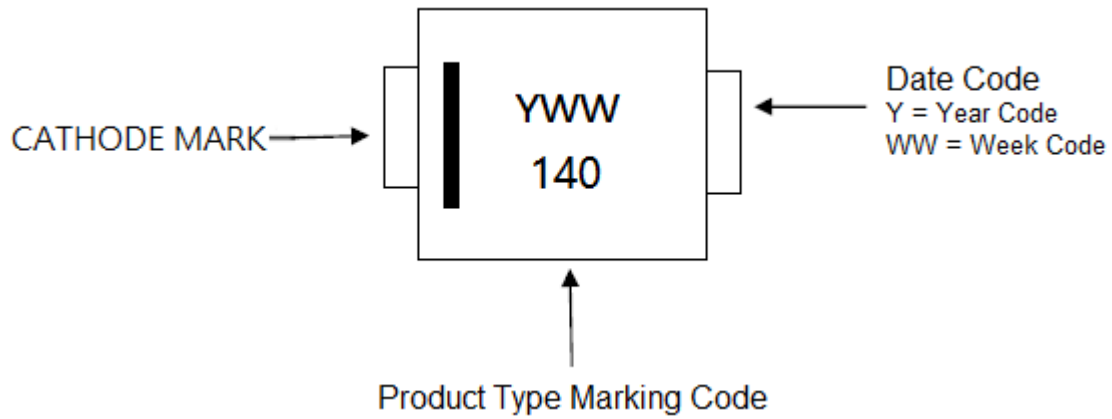
**FIG.5 TYPICAL REVERSE CHARACTERISTICS**



**Ordering Information :**

Part Number	Package	Packing	
		Qty.	Carrier
FB140E	F1A	10000	Tape & Reel

**Marking Information :**



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