

**Product Summary** (@ T<sub>A</sub> = +25°C)

V <sub>RRM</sub> (V)	I <sub>o</sub> (A)	V <sub>F</sub> Max (V)	I <sub>R</sub> Max (μA)	T <sub>rr</sub> (ns)
200	2	0.92	5	25

**Description**

The FES2DEQ is a rectifier packaged in the DO-219AA package and is suited as a boost diode in power-factor correction circuitry. For use in secondary rectification and freewheeling for ultra-fast switching speed AC-AC and DC-DC converters in high-temperature conditions for automotive applications.

**Applications**

- Flat Panel Display
- Switching Power Supplies/Chargers
- LED Lighting
- Freewheeling Diode
- Automotive

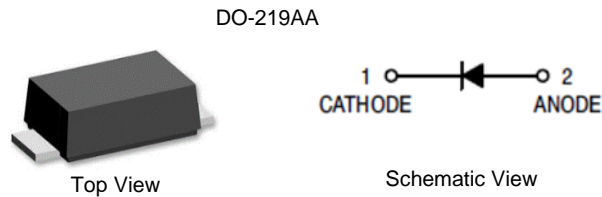
**Features and Benefits**

- Low Profile, Small Form Factor Package
- Low Leakage Current
- Glass Passivated Die Construction
- Superfast Recovery Time for High Efficiency
- Low Forward Voltage, Low Power Loss
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The FES2DEQ is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

<https://www.diodes.com/quality/product-definitions/>

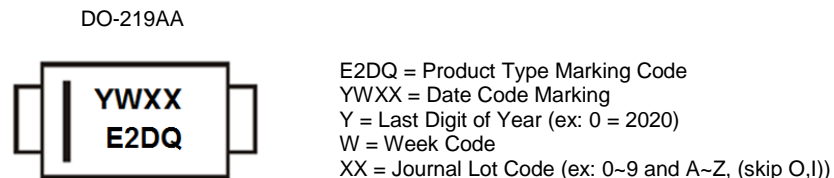
**Mechanical Data**

- Case: DO-219AA
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: Cathode Band
- Weight: 0.016 grams (Approximate)


**Ordering Information** (Note 4)

Part Number	Qualification	Case	Packaging
FES2DEQ-7	Automotive	DO-219AA	3000/Tape & Reel

- 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. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

**Marking Information**

**Date Code Key**

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Code	0	1	2	3	4	5	6	7	8	9	0	1
Week	1-26					27-52						
Code	A-Z					a-z						

**Maximum Ratings** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	200	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_R$		
Average Rectified Output Current	$I_O$	2	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	50	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	25	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	70	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Lead (Note 5)	$R_{\theta JL}$	20	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	200	—	—	V	$I_R = 10\mu\text{A}$
Forward Voltage	$V_F$	—	0.87	0.92	V	$I_F = 2\text{A}, T_J = +25^\circ\text{C}$
Reverse Leakage Current (Note 6)	$I_R$	—	0.01 1.2	5 350	$\mu\text{A}$	$V_R = 200\text{V}, T_J = +25^\circ\text{C}$ $V_R = 200\text{V}, T_J = +125^\circ\text{C}$
Reverse Recovery Time	$t_{RR}$	—	—	25	ns	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{RR} = 0.25\text{A}$
Typical Total Capacitance	$C_T$	—	32	—	pF	$V_R = 4\text{V}, f = 1\text{MHz}$

Notes: 5. Thermal resistance test performed in accordance with JESD-51.  
6. Short duration pulse test used to minimize self-heating effect.

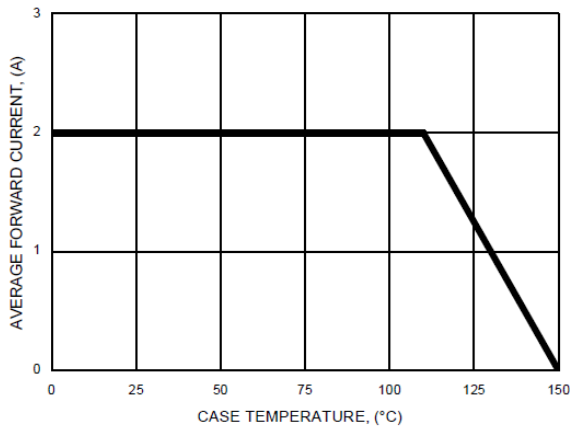


FIG. 1- FORWARD CURRENT DERATING CURVE

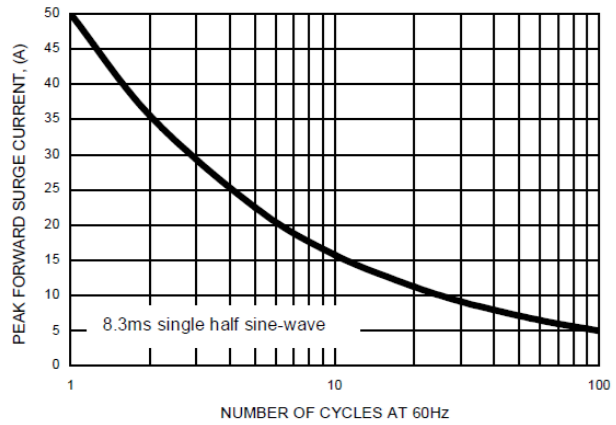


FIG. 2- MAXIMUM NON-REPETITIVE SURGE CURRENT

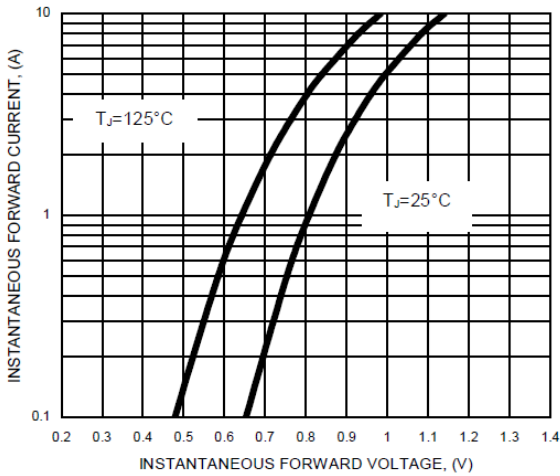


FIG. 3- TYPICAL FORWARD CHARACTERISTICS

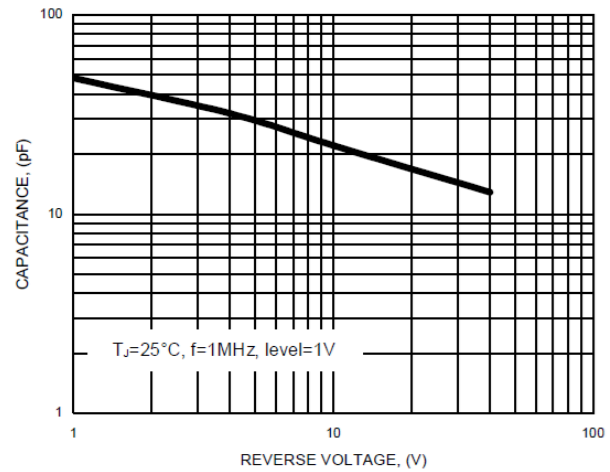


FIG. 4- TYPICAL TOTAL CAPACITANCE

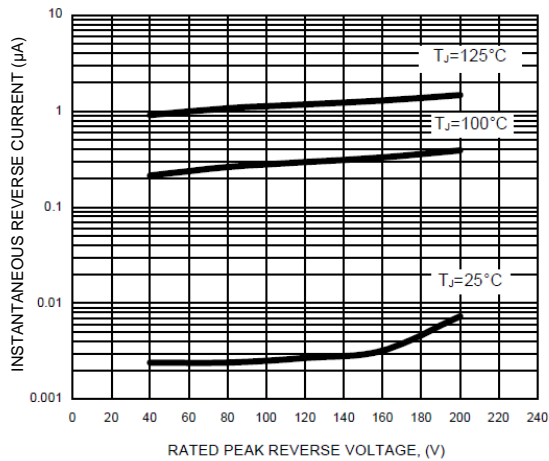
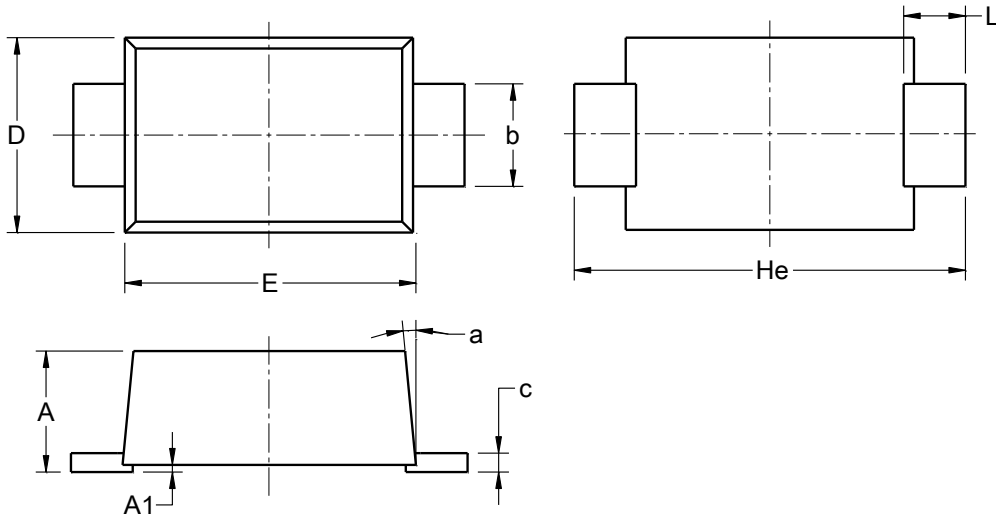


FIG. 5- TYPICAL REVERSE CHARACTERISTICS

**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**DO-219AA**

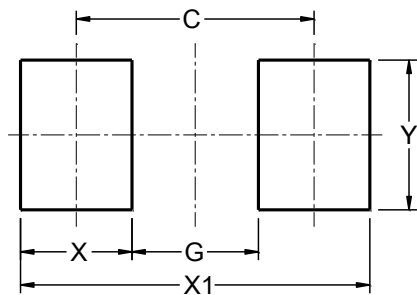


DO-219AA			
Dim	Min	Max	Typ
A	0.81	1.20	1.18
A1	0.03	0.10	0.07
b	0.85	1.15	1.00
c	0.05	0.30	0.15
D	1.70	2.00	1.90
E	2.70	2.90	2.80
He	3.50	3.90	3.80
L	0.45	0.75	0.60
a	0°	8°	5°
All Dimensions in mm			

**Suggested Pad Layout**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**DO-219AA**



Dimensions	Value (in mm)
C	2.86
G	1.52
X	1.34
X1	4.20
Y	1.80

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