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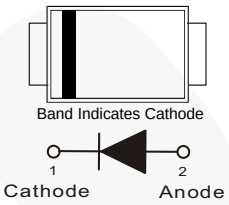
October 2015

ES2DAF
Surface Mount Ultrafast Rectifier

Features

- Fast Switching Speed – Maximum T_{rr} 35 ns
- Ultra Thin Profile - Maximum Height of 1.0 mm
- Glass Passivated Junction
- UL Flammability 94V-0 Classification
- MSL 1
- RoHS Compliant / Green Mold Compound
- Industrial Device Qualified per AEC-Q101 Standards.
  * see authorized use policy

SMAF



Ordering Information

Part Number	Top Mark	Package	Packing Method
ES2DAF	ES2DAF	DO-214AD (SMAF)	Tape and Reel

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
V_{RRM}	Recurrent Peak Reverse Voltage	200	V
V_{RMS}	RMS Reverse Voltage	140	V
V_R	DC Blocking Voltage	200	V
$I_{F(AV)}$	Average Forward Current	2	A
I_{FSM}	Peak Forward Surge Current: 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	50	A
T_J	Operating Junction Temperature Range	-55 to +150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

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Thermal Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
ψ_{JL}	Typical Thermal Characteristics, Junction-to-Lead(1)	25	°C/W
$R_{\theta JA}$	Typical Thermal Resistance, Junction-to-Ambient(2)	150	°C/W

Notes:

1. Mounted on an FR4 PCB, single-sided copper, with 100cm^2 copper pad area.
2. Mounted on an FR4 PCB, single-sided copper, mini pad.

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage	I_F = 2.0 A			0.95	V
I_R	Reverse Current	V_R = 200 V			1	μA
t_{rr}	Reverse Recovery Time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A			35	ns
C_J	Junction Capacitance	V_R = 4 V, f = 1 MHz		30		pF

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Typical Performance Characteristics

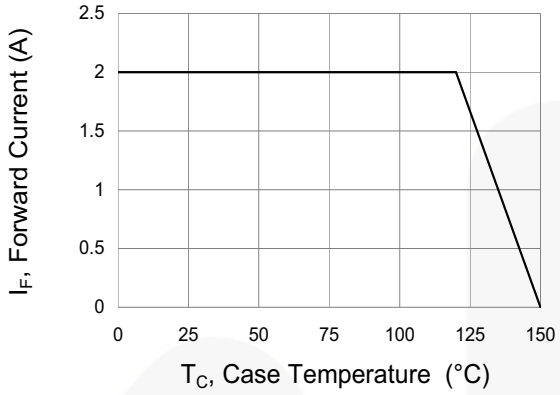

Figure 1. Forward Current Derating Curve

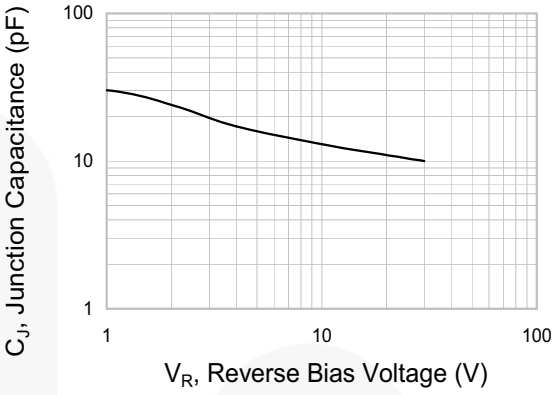

Figure 2. Typical Junction Capacitance

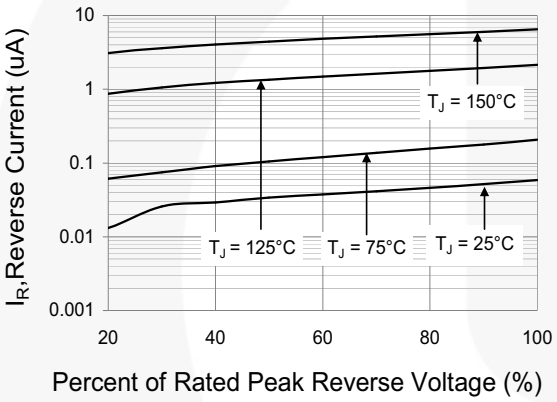

Figure 3. Typical Reverse Characteristics

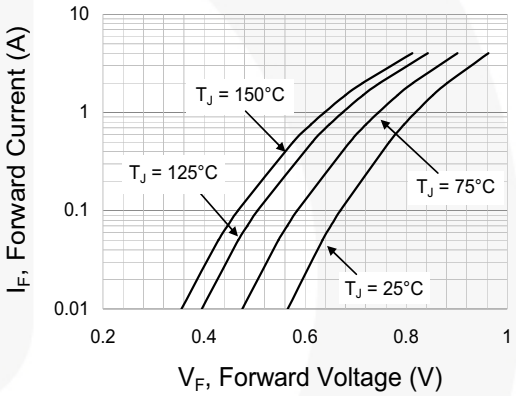

Figure 4. Typical Forward Characteristics

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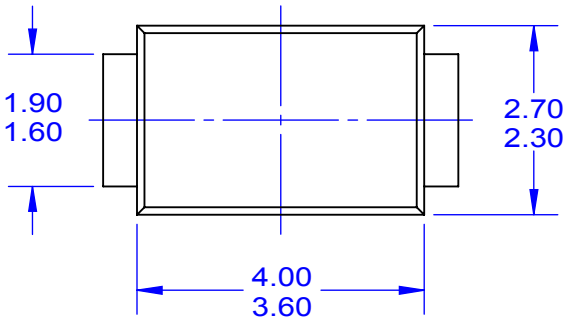

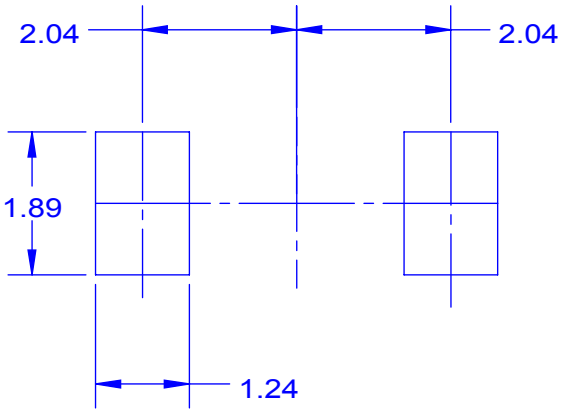

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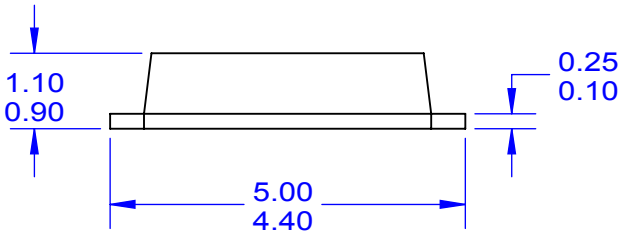

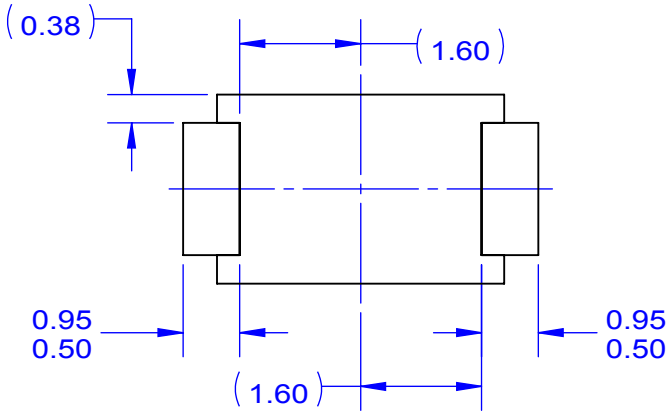

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