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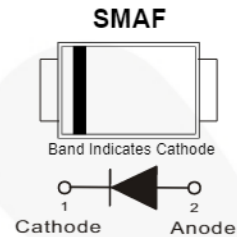
October 2015



# 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



## 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  $T_A = 25^\circ\text{C}$  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	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$

ES2DAF — Surface Mount Ultrafast Rectifier

## Thermal Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit
$\Psi_{JL}$	Typical Thermal Characteristics, Junction-to-Lead <sup>(1)</sup>	25	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Typical Thermal Resistance, Junction-to-Ambient <sup>(2)</sup>	150	$^\circ\text{C}/\text{W}$

### Notes:

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

## Electrical Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

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

### Typical Performance Characteristics

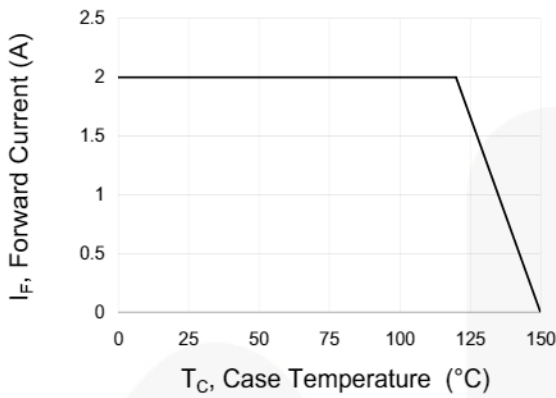


Figure 1. Forward Current Derating Curve

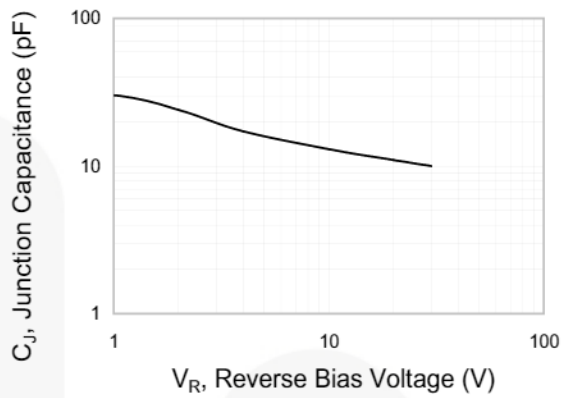


Figure 2. Typical Junction Capacitance

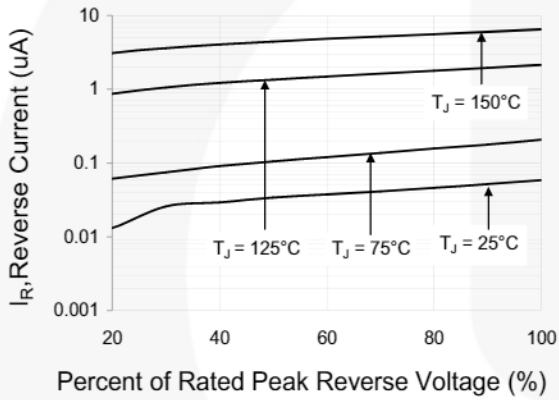


Figure 3. Typical Reverse Characteristics

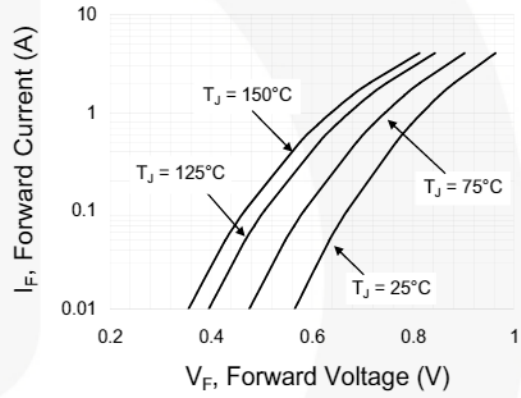
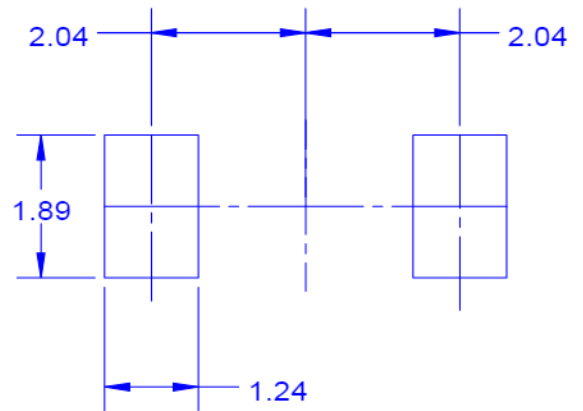
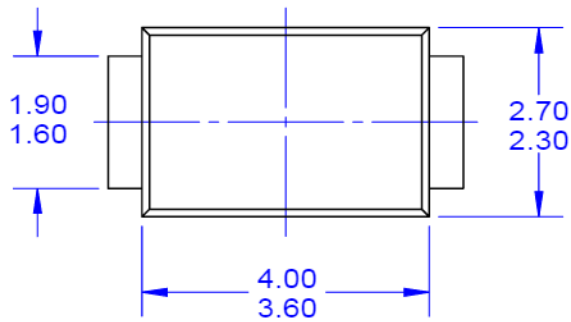
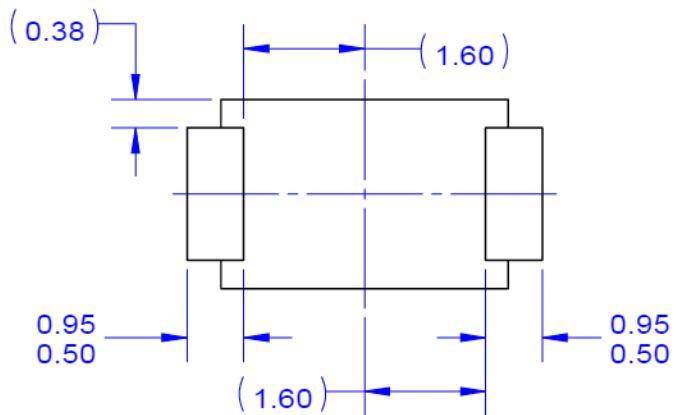
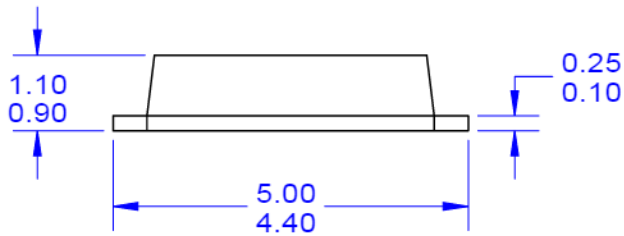


Figure 4. Typical Forward Characteristics




LAND PATTERN RECOMMENDATION



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- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
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