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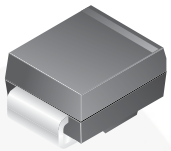
August 2014

ES2A - ES2D
Fast Rectifiers

Features

- For Surface Mount Applications
- Glass-Passivated Junction
- Low-Profile Package
- Easy Pick and Place
- Built-in Strain Relief
- Superfast Recovery Times for High Efficiency



SMB/DO-214AA

COLOR BAND DENOTES CATHODE

Ordering Information

Part Number	Top Mark	Package	Packing Method
ES2A	ES2A	DO-214AA (SMB)	Tape and Reel
ES2B	ES2B	DO-214AA (SMB)	Tape and Reel
ES2C	ES2C	DO-214AA (SMB)	Tape and Reel
ES2D	ES2D	DO-214AA (SMB)	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
		ES2A	ES2B	ES2C	ES2D	
V_{RRM}	Maximum Repetitive Reverse Voltage	50	100	150	200	V
$I_{F(AV)}$	Average Rectified Forward Current, .375” Lead Length at T_L = 115°C	2.0				A
I_{FSM}	Non-Repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine Wave	50				A
T_{STG}	Storage Temperature Range	-55 to +150				°C
T_J	Operating Junction 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
P_D	Power Dissipation	1.66	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient(1)	75	°C/W
$R_{\theta JL}$	Thermal Resistance, Junction to Lead(1)	20	°C/W

Note:

1. Device mounted on FR-4 PCB 0.013 mm.

Electrical Characteristics

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

Symbol	Parameter	Conditions	Value				Unit
			ES2A	ES2B	ES2C	ES2D	
V_F	Maximum Forward Voltage	I_F = 2.0 A	0.90				V
t_{rr}	Reverse Recovery Time	I_F = 0.5 A, I_R = 1.0 A, I_{RR} = 0.25 A	20				ns
I_R	Maximum Reverse Current at Rated V_R	T_A = 25°C	10				µA
		T_A = 100°C	350				
C_T	Total Capacitance	V_R = 4.0 V, f = 1.0 MHz	18				pF

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Typical Performance Characteristics

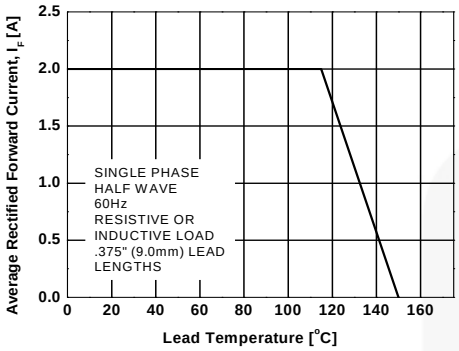


Figure 1. Forward Current Derating Curve

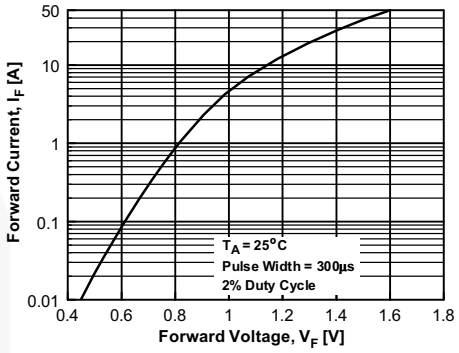


Figure 2. Foward Voltage Characteristics

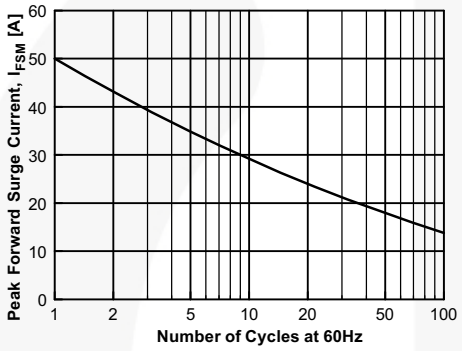


Figure 3. Non-Repetitive Surge Current

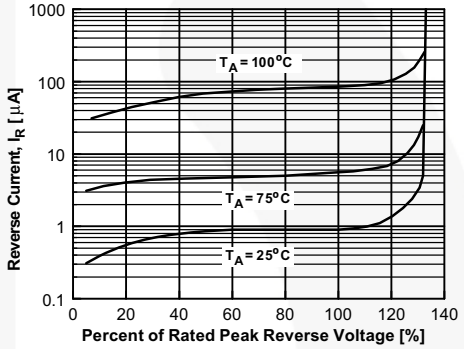


Figure 4. Reverse Current vs. Reverse Voltage

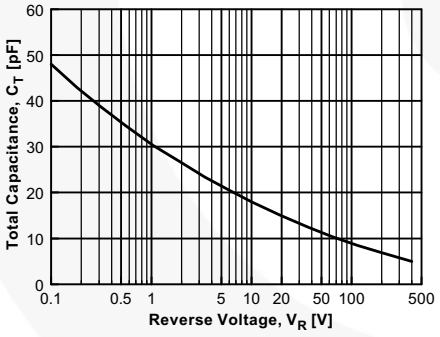
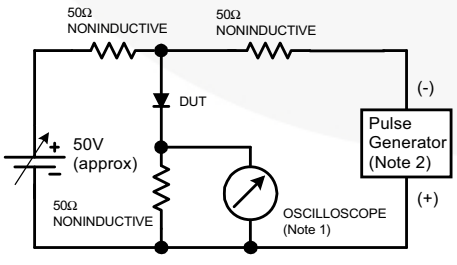


Figure 5. Total Capacitance



NOTES:
1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.

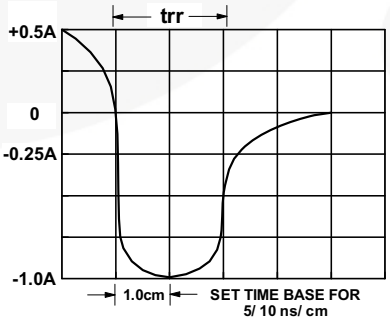


Figure 6. Reverse Recovery Time Characteristic and Test Circuit Diagram

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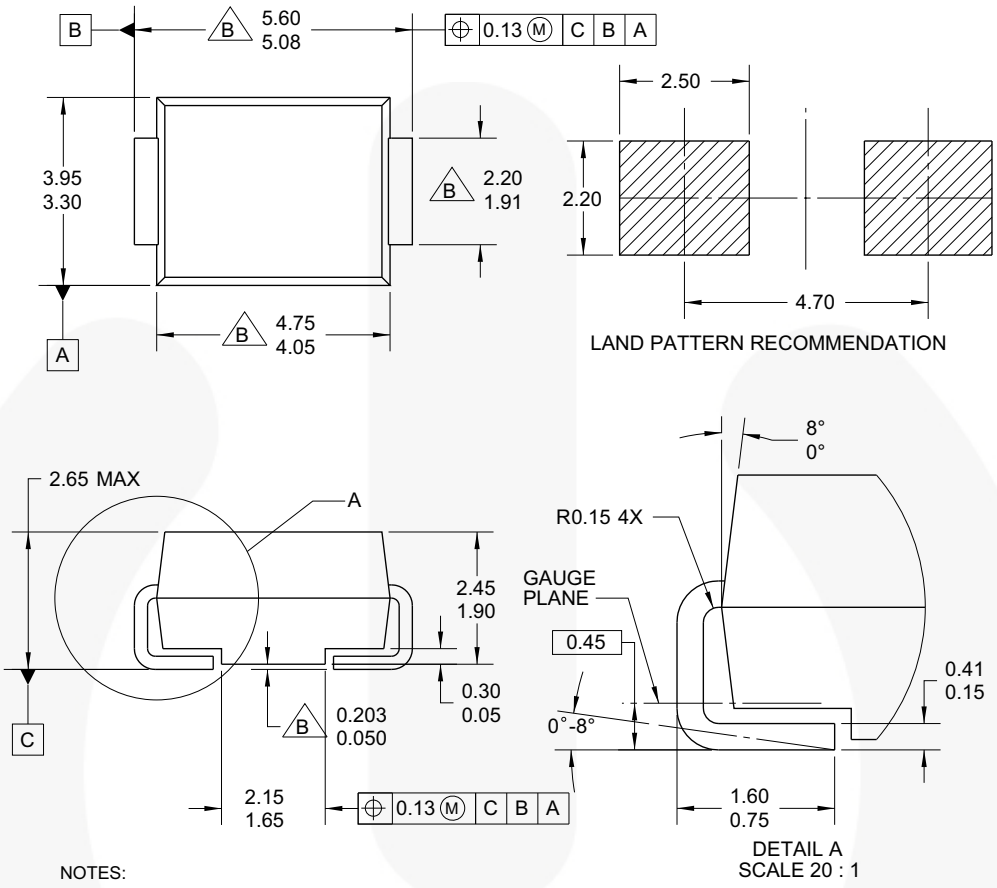
Physical Dimension



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D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
E. DIMENSION AND TOLERANCE AS PER ASME Y14.5-1994.
F. LAND PATTERN STD. DIOM5336X240M.
G. DRAWING FILE NAME: DO214AAREV1

Figure 7. 2-LEAD, SMB, JEDEC DO-214, VARIATION AA (ACTIVE)

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