ES2A – ES2M

2.0A SURFACE MOUNT GLASS PASSIVATED SUPERFAST DIODE

Features

- Glass Passivated Die Construction
- Ideally Suited for Automatic Assembly
- Low Forward Voltage Drop, High Efficiency
- Surge Overload Rating to 5 0A Peak
- Low Power Loss
- Super-Fast Recovery Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O

SMB (DO – 214AA)

Mechanical Data

- Case: SMA/DO-214AC,SMB/DO-214AA, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: SMA Weight: 0.064 grams (approx.)
  SMB Weight: 0.093 grams (approx.)
- **Lead Free: For RoHS / Lead Free Version**

Major Ratings and Characteristics

$I_{F(AV)}$	**2.0 A**
V_{RRM}	**50 V to 1000 V**
I_{FSM}	**50 A**
t_{rr}	**35 nS**
V_F	**0.95 V, 1.25 V, 1.7 V**
T_j max.	**150 °C**

Maximum Ratings and Electrical Characteristics @T_A=25°C unless otherwise specified

Characteristic	Symbol	ES2A	ES2B	ES2C	ES2D	ES2E	ES2G	ES2J	ES2K	ES2M	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	150	200	300	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	105	140	210	280	420	560	700	V
Average Rectified Output Current @T_L = 120°C	I_O	2.0									A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	50									A
Forward Voltage @I_F = 2.0A	V_{FM}	0.95				1.25		1.7			V
Peak Reverse Current @T_A = 25°C At Rated DC Blocking Voltage @T_A = 100°C	I_{RM}	2.0 500									μA
Reverse Recovery Time (Note 1)	t_{rr}	35								75	nS
Typical Junction Capacitance (Note 2)	C_j	10									pF
Typical Thermal Resistance (Note 3)	$R_{\theta JL}$	35									°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150									°C

Note: 1. Measured with I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See figure 5.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC.
3. Mounted on P.C. Board with 8.0mm^2 land area.

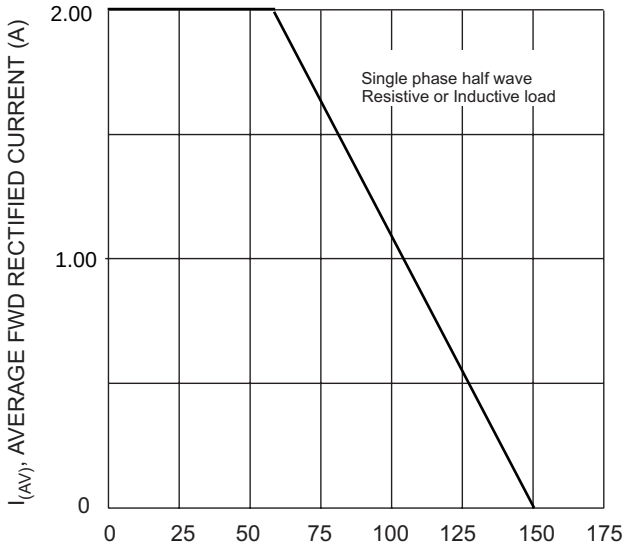


Fig. 1 Forward Current Derating Curve

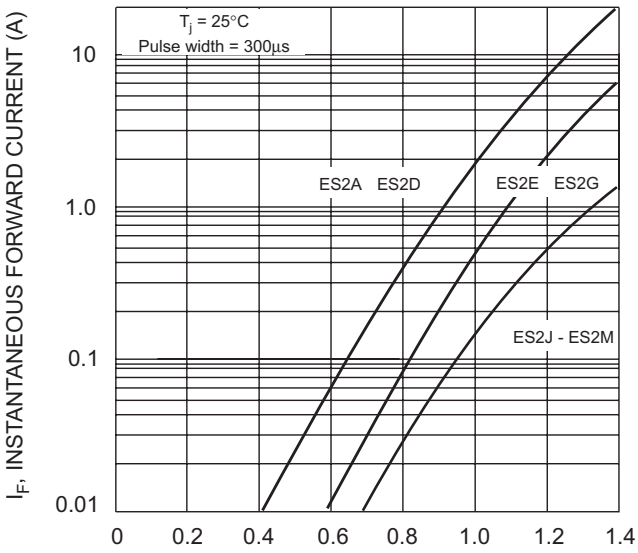


Fig. 2 Typical Forward Characteristics

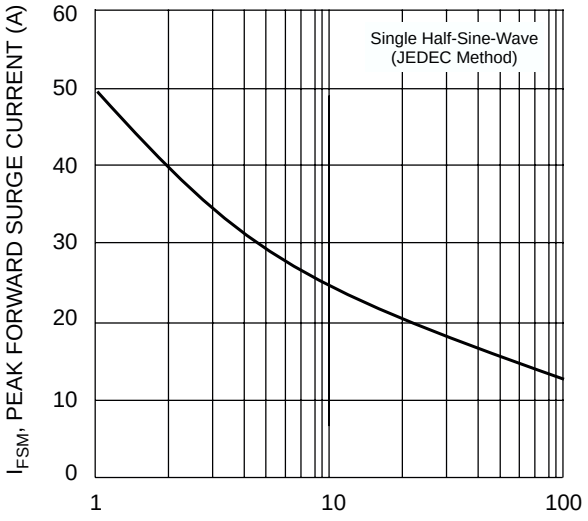


Fig. 3 Surge Current Derating Curve

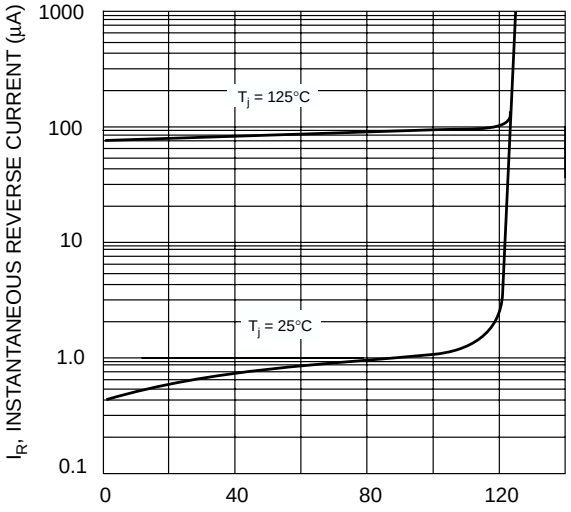
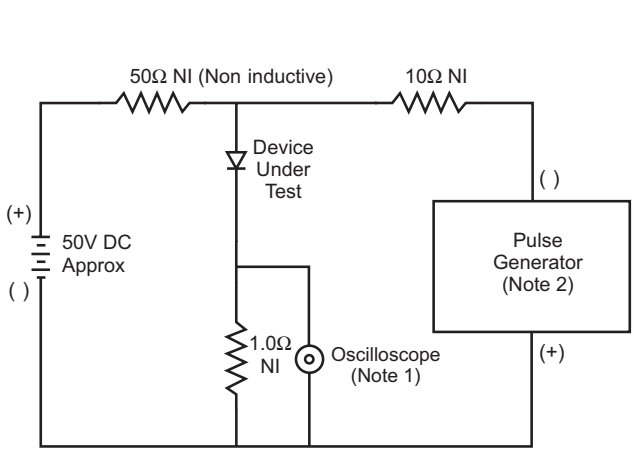


Fig. 4 Typical Reverse Characteristics



Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
2. Rise Time = 10ns max. Input Impedance = 50Ω.

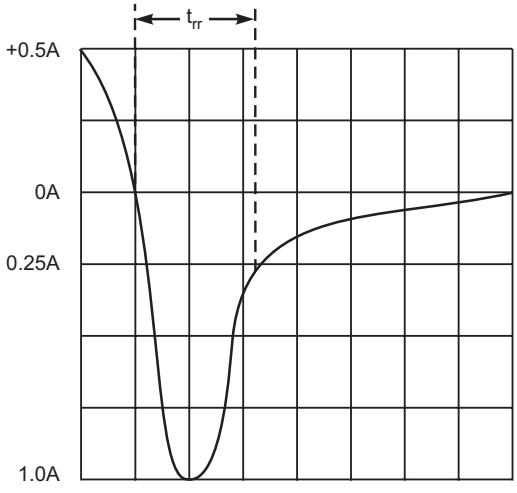
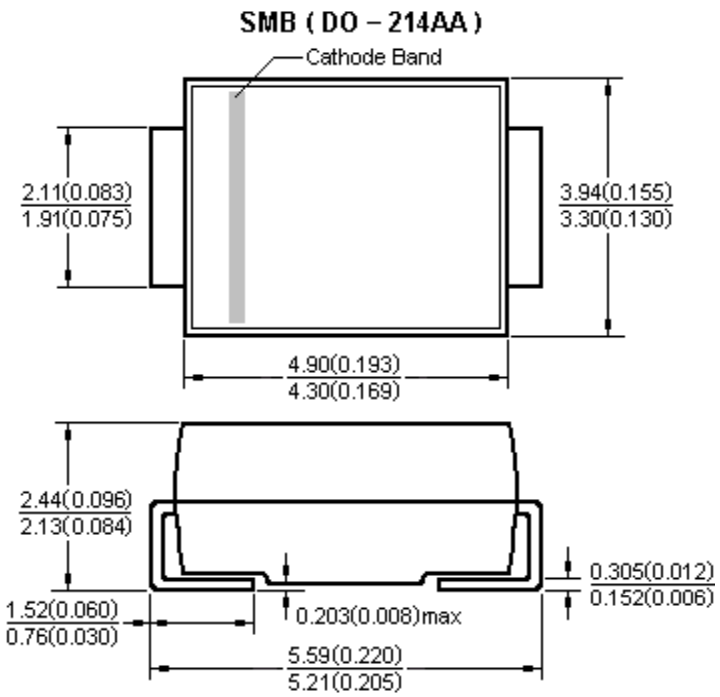


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

Package Outline



Dimensions in millimeters and (inches)

Notice

- Product is intended for use in general electronics applications.
- Product should be worked less than the ratings; if exceeded, may cause permanent damage. or introduce latent failure mechanisms.
- The absolute maximum ratings are rated values and must not be exceeded during operation. The following are the general derating methods you design a circuit with a device.
  $I_{F(AV)}$: We recommend that the worst case current be no greater than 80% .
  T_J : Derate this rating when using a device in order to ensure high reliability. We recommend that the device be used at a T_J of below 125°C.