Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

ES2A/A - ES2D/A

## 2.0A SURFACE MOUNT SUPER-FAST RECTIFIER

Features

- Glass Passivated Die Construction
- Super-Fast Recovery Time For High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 50A Peak
- Ideally Suited for Automated Assembly
- **Available in Lead Free Finish/RoHS Complaint Version (Note 4)**

Mechanical Data

- Case: SMA/SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish). Please see Ordering Information, Note 5, on Page 3
- Polarity: Cathode Band or Cathode Notch
- Mounting Position: Any
- SMA Weight: 0.064 grams (approx.)
- SMB Weight: 0.093 grams (approx.)
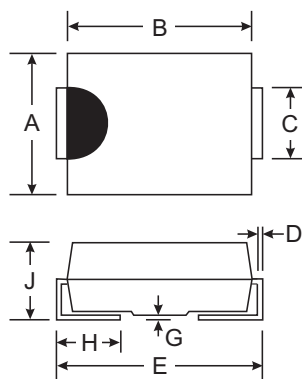
| Dim	SMA		SMB	
	Min	Max	Min	Max
A	2.29	2.92	3.30	3.94
B	4.00	4.60	4.06	4.57
C	1.27	1.63	1.96	2.21
D	0.15	0.31	0.15	0.31
E	4.80	5.59	5.00	5.59
G	0.10	0.20	0.10	0.20
H	0.76	1.52	0.76	1.52
J	2.01	2.30	2.00	2.40
All Dimensions in mm				

AA, BA, CA, DA Suffix Designates SMA Package
A, B, C, D, Suffix Designates SMB Package

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

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

| Characteristic	Symbol	ES2A/A	ES2B/A	ES2C/A	ES2D/A	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	150	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	105	140	V
Average Rectified Output Current @ T_T = 110°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}	0.92				V
Peak Reverse Current @ T_A = 25°C at Rated DC Blocking Voltage @ T_A = 125°C	I_{RM}	5.0 350				µA
Reverse Recovery Time (Note 3)	t_{rr}	25				ns
Typical Junction Capacitance (Note 2)	C_j	25				pF
Typical Thermal Resistance, Junction to Terminal (Note 1)	$R_{\theta JT}$	20				°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150				°C

Notes: 1. Unit mounted on PC board with 5.0 mm^2 (0.013 mm thick) copper pads as heat sink.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3. Measured with I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See Figure 5.
4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.
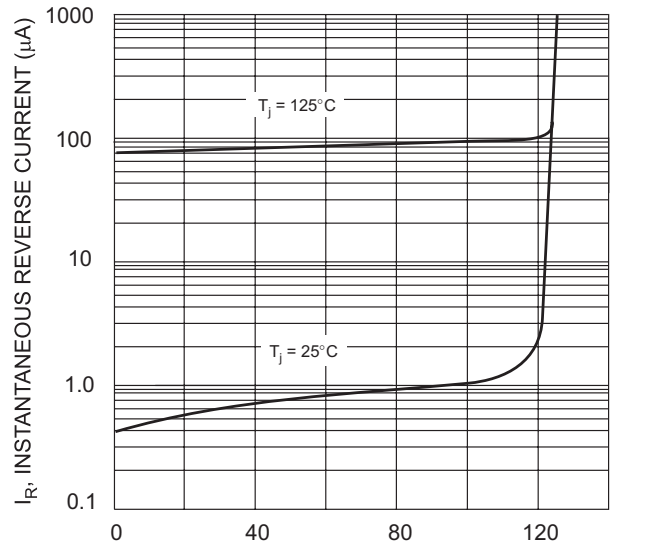
© Diodes Incorporated
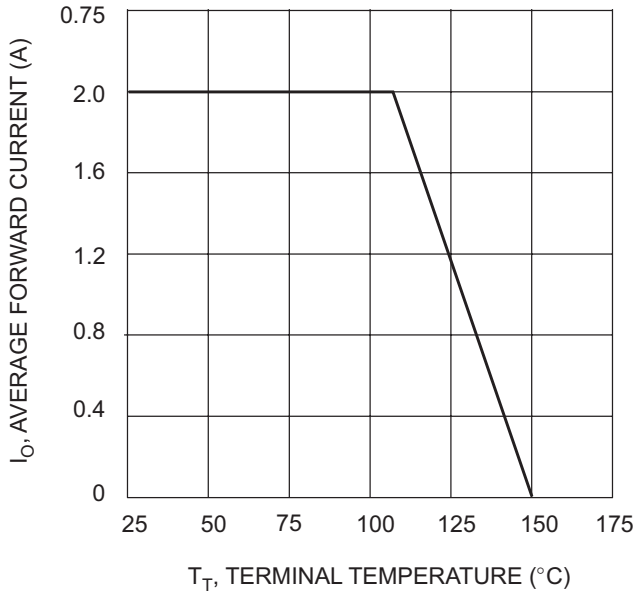
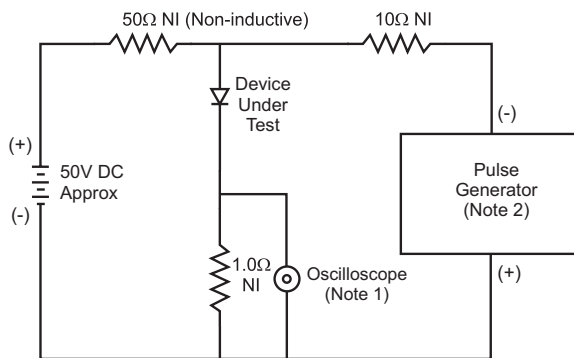T, TERMINAL TEMPERATURE (°C)
Fig. 1 Forward Current Derating Curve

$T_j = 25°C$
Pulse width = 300μs
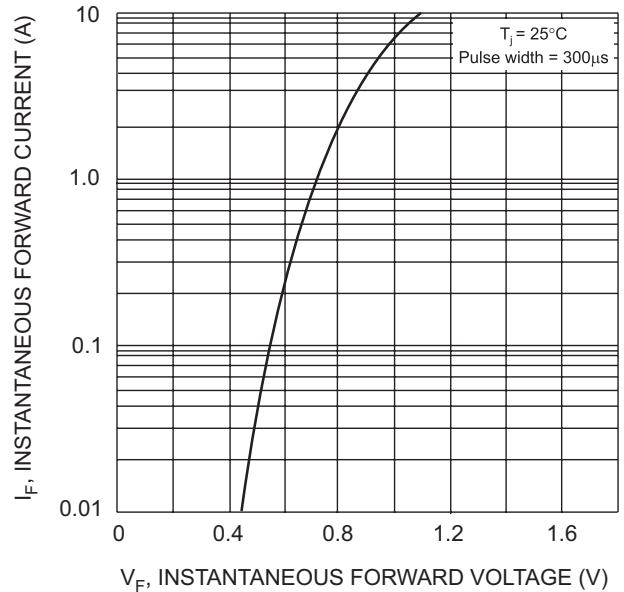
V_F, INSTANTANEOUS FORWARD VOLTAGE (V)
Fig. 2 Typical Forward Characteristics

Single Half-Sine-Wave
(JEDEC Method)
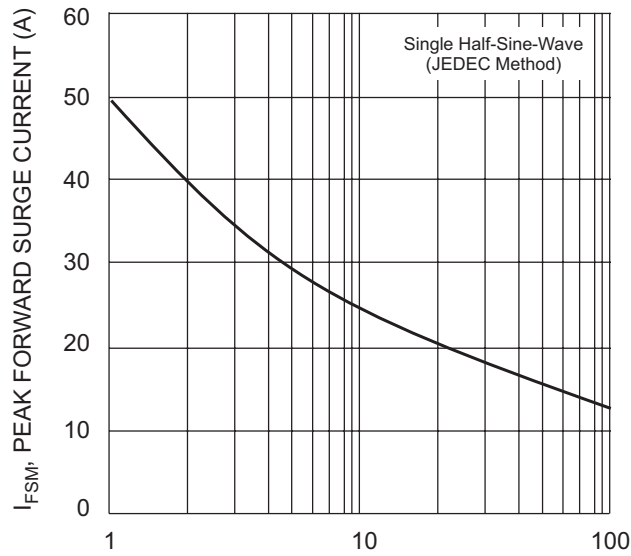
NUMBER OF CYCLES AT 60Hz
Fig. 3 Surge Current Derating Curve

$T_j = 125°C$

$T_j = 25°C$

PERCENT OF RATED PEAK REVERSE VOLTAGE (%)
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.
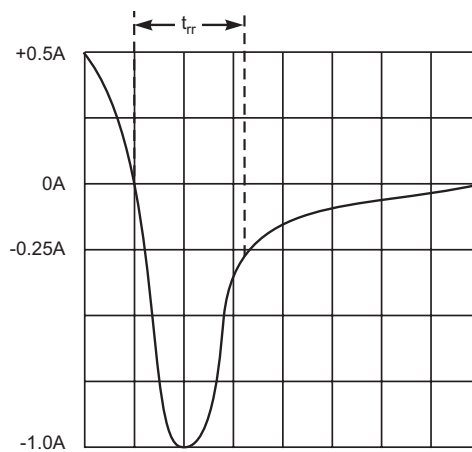
Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

Ordering Information (Note 5)

Device	Packaging	Shipping
ES2xA-13 ES2x-13	SMA SMB	5000/Tape & Reel 3000/Tape & Reel

* x = Device type, e.g. ES2BA-13 (SMA package); ES2A-13 (SMB package).

Notes: 5. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.
           6. For Lead Free Finish/RoHS Compliant version part numbers, please add "-F" suffix to part number above. Example: ES2BA-13-F.
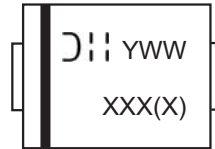
XXX = Product type marking code, ex: ES2BA (SMA package)
XXXX = Product type marking code, ex: ES2A (SMB package)
ⅅ‖ = Manufacturers' code marking
YWW = Date code marking
 Y = Last digit of year ex: 2 for 2002
 WW = Week code 01 to 52

www.diodes.com