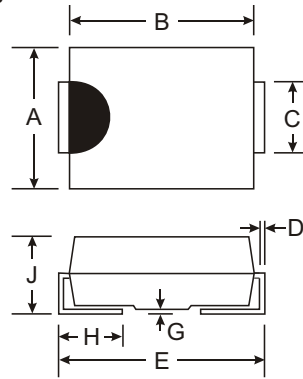


Features

- Glass Passivated Die Construction
- Super-Fast Recovery Time For High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 30A Peak
- Ideally Suited for Automated Assembly

Mechanical Data

- Case: Molded Plastic
- Case Material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number & Date Code: See Below
- Ordering Information: See Below
- Weight: 0.064 grams (approx.)



SMA		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.10	0.20
H	0.76	1.52
J	2.01	2.62
All Dimensions in mm		

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%.

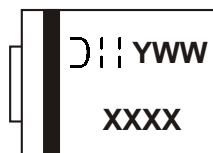
Characteristic	Symbol	ES1A	ES1B	ES1C	ES1D	ES1G	Unit	
Peak Repetitive Reverse Voltage	V _{RRM}	50	100	150	200	400	V	
Working Peak Reverse Voltage	V _{RWM}							
DC Blocking Voltage	V _R							
RMS Reverse Voltage	V _{R(RMS)}	35	70	105	140	280	V	
Average Rectified Output Current @ T _T = 110°C	I _O	1.0						A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method)	I _{FSM}	30						A
Forward Voltage Drop @ I _F = 0.6A @ I _F = 1.0A	V _{FM}		0.90 0.98			1.25	V	
Peak Reverse Current at Rated DC Blocking Voltage @ T _A = 25°C @ T _A = 100°C	I _{RM}			5.0 200			μA	
Reverse Recovery Time (Note 1)	t _{rr}			25		35	ns	
Typical Total Capacitance (Note 2)	C _T			10			pF	
Typical Thermal Resistance, Junction to Terminal (Note 3)	R _{θJT}			40			°C/W	
Operating and Storage Temperature Range	T _j , T _{STG}			-65 to +150			°C	

Ordering Information (Note 4)

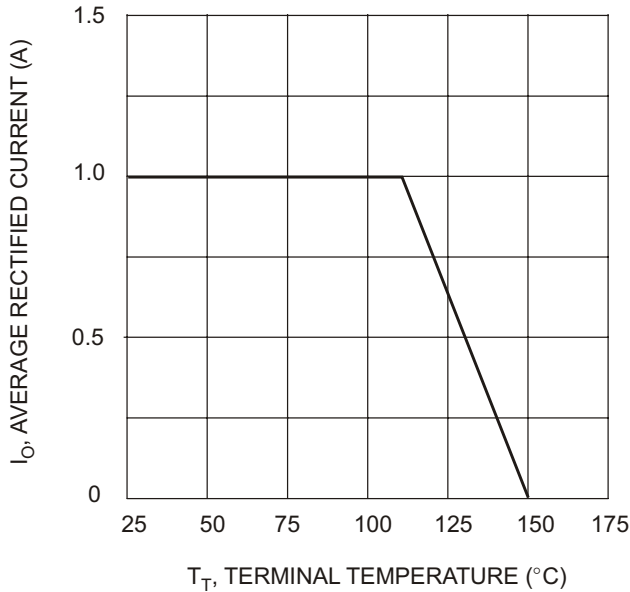
Device*	Packaging	Shipping
ES1x-13	SMA	5000/Tape & Reel

- Notes:
1. Measured with I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See figure 5.
 2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
 3. Unit mounted on PC board with 5.0 mm² (0.013 mm thick) copper pad as heat sink.
 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
- *x = Device type, e.g. ES1A-13.

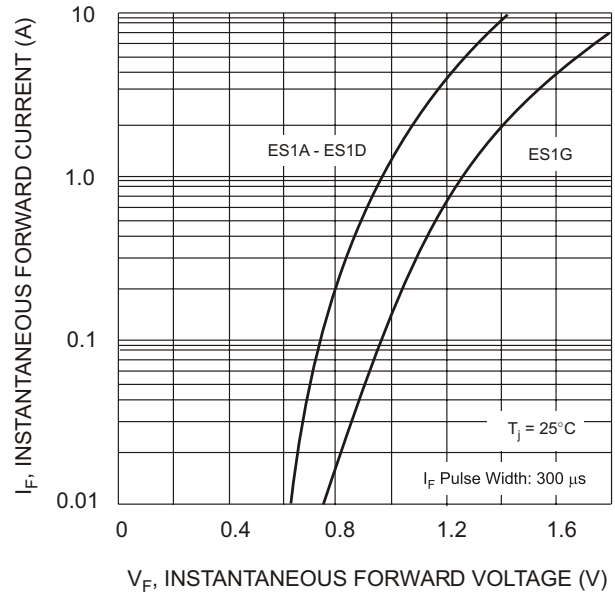
Marking Information



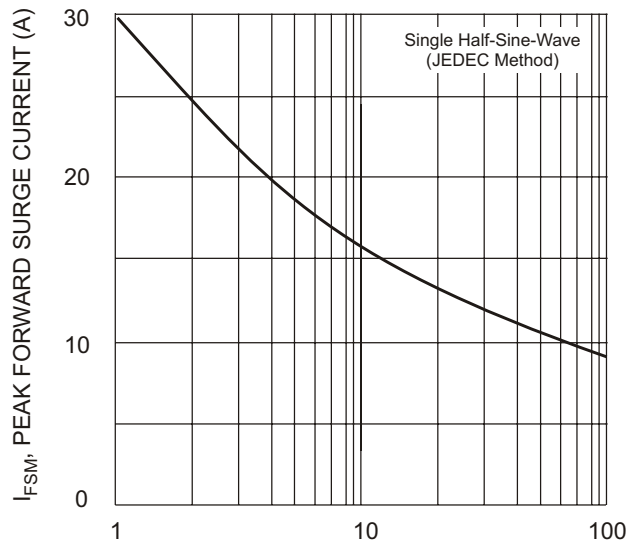
XXXX = Product type marking code, ex. ES1A
 YWW = Manufacturers' code marking
 YWW = Date code marking
 Y = Last digit of year ex: 2 for 2002
 WW = Week code 01 to 52



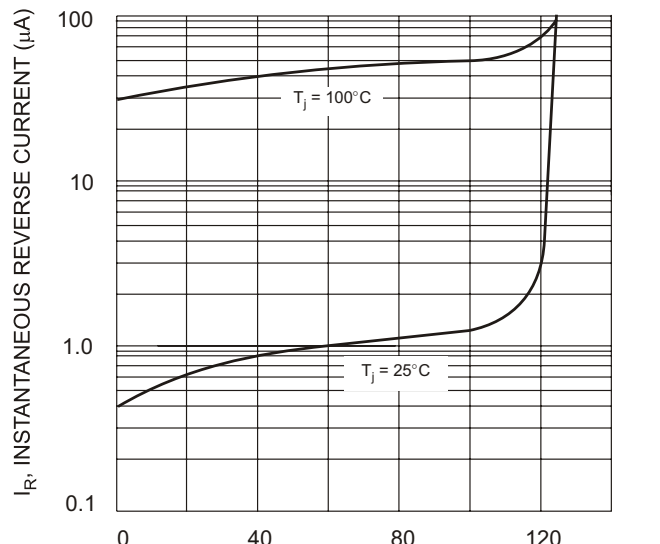
T_T , TERMINAL TEMPERATURE (°C)
Fig. 1 Forward Current Derating Curve



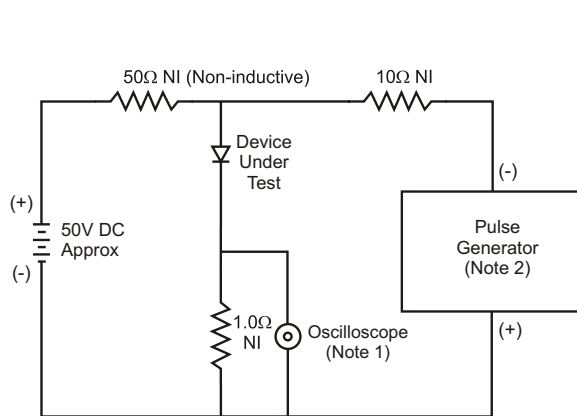
V_F , INSTANTANEOUS FORWARD VOLTAGE (V)
Fig. 2 Typical Forward Characteristics



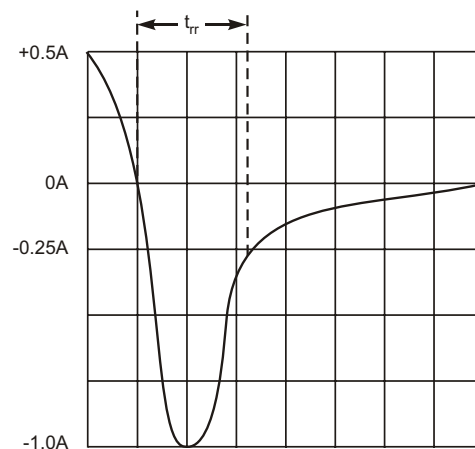
NUMBER OF CYCLES AT 60 Hz
Fig. 3 Surge Current Derating Curve



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