

# ES1D-ES1J(LS)

**SURFACE MOUNT  
SUPER FAST RECTIFIERS**

**REVERSE VOLTAGE – 200 to 600 Volts  
FORWARD CURRENT – 1.0 Ampere**

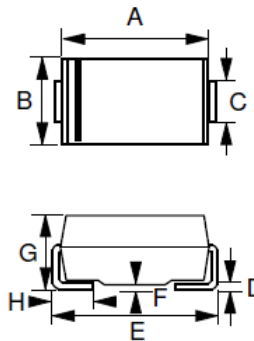
**FEATURES**

- Glass passivated chip
- Super fast switching for high efficiency
- For surface mounted applications
- Low forward voltage drop and high current capability
- Low reverse leakage current
- Qualified according to AEC-Q101 Rev\_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**MECHANICAL DATA**

- Case : Molded plastic
- Case Material: Molding compound, UL Flammability classification 94V-0, "Halogen-free".
- Polarity : Indicated by cathode band
- Weight : 0.002 ounces, 0.064 grams

**SMA**



SMA		
DIM	MIN	MAX
A	4.06	4.57
B	2.29	2.92
C	1.27	1.63
D	0.15	0.31
E	4.83	5.59
F	0.05	0.20
G	2.01	2.40
H	0.76	1.52

All dimension in millimeter

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.

PARAMETER	SYMBOL	ES1D	ES1G	ES1J	UNIT
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	200	400	600	V
Maximum RMS Voltage	$V_{RMS}$	140	280	420	V
Maximum DC Blocking Voltage	$V_{DC}$	200	400	600	V
Maximum Average Forward Rectified Current @ $T_L=110^\circ\text{C}$	$I_{(AV)}$	1.0			A
Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (JEDEC METHOD)	$I_{FSM}$	30			A
Maximum forward Voltage at 1.0A DC	$V_F$	0.92	1.25	1.30	V
Maximum DC Reverse Current at Rated DC Blocking Voltage @ $T_J=25^\circ\text{C}$ @ $T_J=125^\circ\text{C}$	$I_R$	5.0 200			$\mu\text{A}$
Maximum Reverse Recovery Time (Note 4)	$t_{rr}$	25		35	ns
Typical Reverse Recovery Time	$t_{rr}$	20		30	ns
Typical Junction Capacitance (Note 5)	$C_T$	20			pF
Typical Thermal Resistance (Note 6)	$R_{thJA}$ $R_{thJL}$ $R_{thJC}$	90 30 25			$^\circ\text{C/W}$
Operating Temperature Range	$T_J$	-55 to + 150			$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to + 150			$^\circ\text{C}$

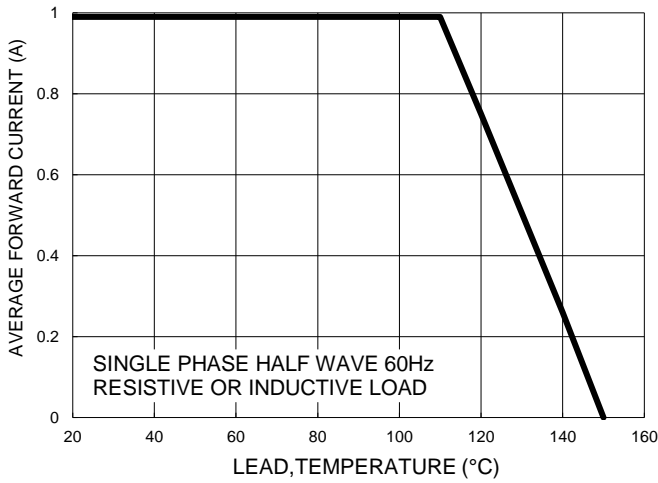
Note :

REV-11, Oct-2021, KSGA01

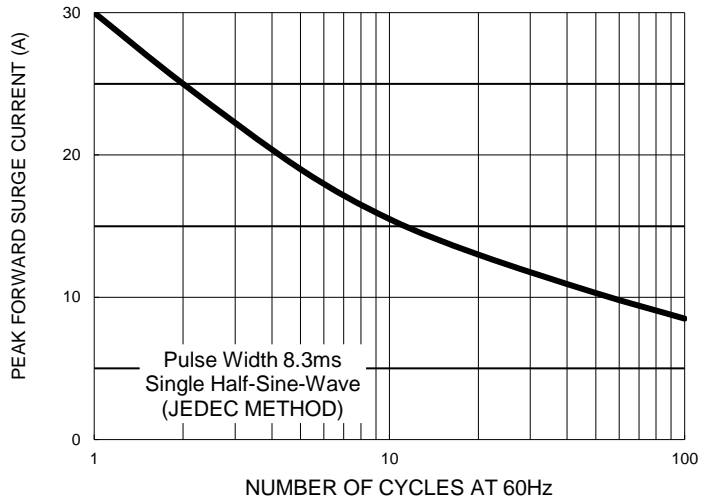
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $t_r=0.25\text{A}$ .
5. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
6. Thermal Resistance junction to Ambient, Lead and Case.

**RATING AND CHARACTERISTIC CURVES**  
**ES1D-ES1J**

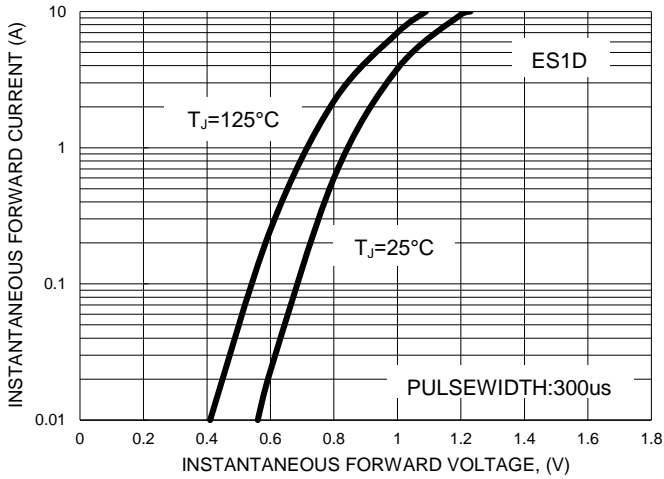
**FIG.1- FORWARD CURRENT DERATING CURVE**



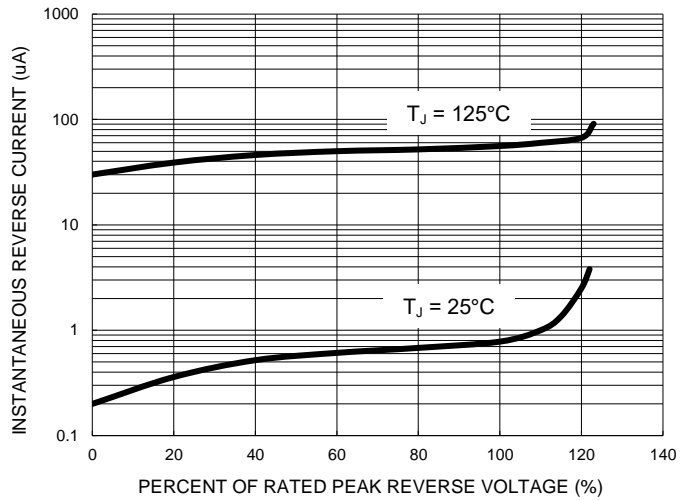
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



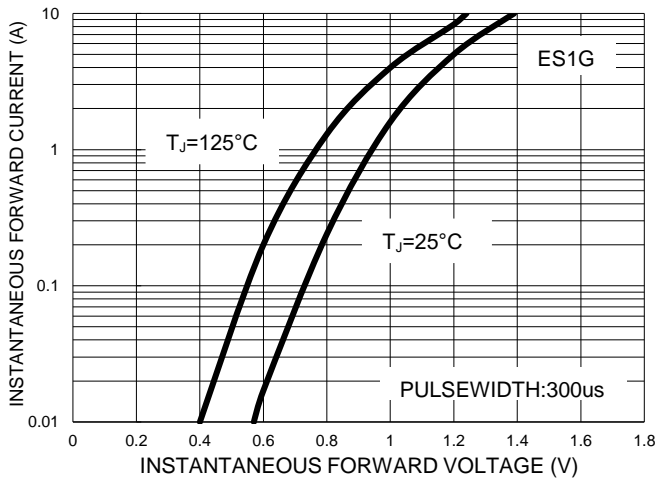
**FIG.3- TYPICAL FORWARD CHARACTERISTICS**



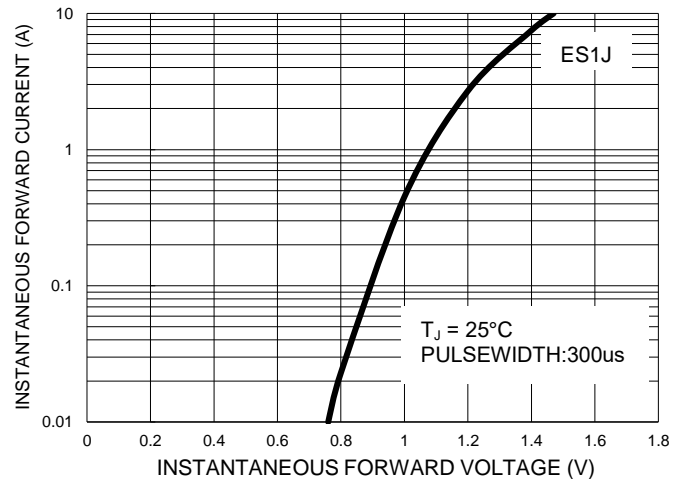
**FIG.4- TYPICAL REVERSE CHARACTERISTICS**



**FIG.5- TYPICAL FORWARD CHARACTERISTICS**



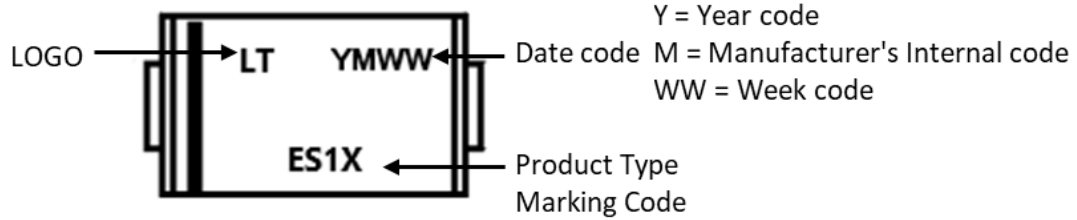
**FIG.6- TYPICAL FORWARD CHARACTERISTICS**



## Ordering Information :

Part Number	Case	Packaging
ES1D_HF	SMA	5000pcs/Reel
ES1G_HF	SMA	5000pcs/Reel
ES1J_HF	SMA	5000pcs/Reel

## Marking Information :



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