

**SURFACE MOUNT
SUPER FAST RECTIFIERS**

**REVERSE VOLTAGE – 200 Volts
FORWARD CURRENT – 4.0 Amperes**

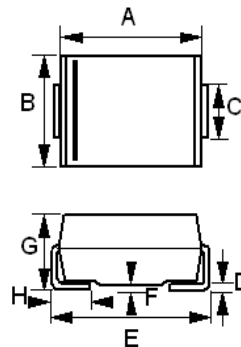
FEATURES

- 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_D
- Plastic material has UL flammability classification 94V-0
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

MECHANICAL DATA

- Case: Molded plastic
- Polarity: Color band denotes cathode
- Weight: 0.093 grams
- Marking: ES4DB

SMB



SMB		
DIM.	MIN.	MAX.
A	4.06	4.57
B	3.30	3.94
C	1.96	2.21
D	0.15	0.31
E	5.21	5.59
F	0.05	0.20
G	2.01	2.50
H	0.76	1.52
All Dimensions in millimeter		

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

CHARACTERISTICS	SYMBOL	ES4DB	UNIT
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	200	V
Maximum DC Blocking Voltage	V_{DC}	200	V
Maximum Average Forward Rectified Current @ $T_C=105^{\circ}C$	I_{AV}	4.0	A
Peak Forward Surge 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	150	A
Maximum Forward Voltage at 4.0A DC	V_F	0.95	V
Maximum DC Reverse Current @ $T_J=25^{\circ}C$ at Rated DC Blocking Voltage @ $T_J=100^{\circ}C$	I_R	5.0 100	μA
Maximum Reverse Recovery time ($I_F=0.5A$, $I_R=1.0A$, $I_{rr}=0.25A$)	t_{rr}	40	ns
Typical Junction Capacitance (Note 4)	C_T	80	pF
Typical Thermal Resistance (Note 5, 6)	R_{thJC} R_{thJL} R_{thJA}	14 12 45	$^{\circ}C/W$
Operating Junction Temperature Range	T_J	-55 to +150	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}C$

Note:

- (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) Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
- (5) Thermal Resistance Junction to Case, Lead and Ambient.
- (6) Unit mounted on 40mm x 40mm x 2mm copper plate.

REV.-2, Oct-2021, KSGB11

RATING AND CHARACTERISTIC CURVES
ES4DB(LS)

FIG.1- FORWARD CURRENT DERATING CURVE

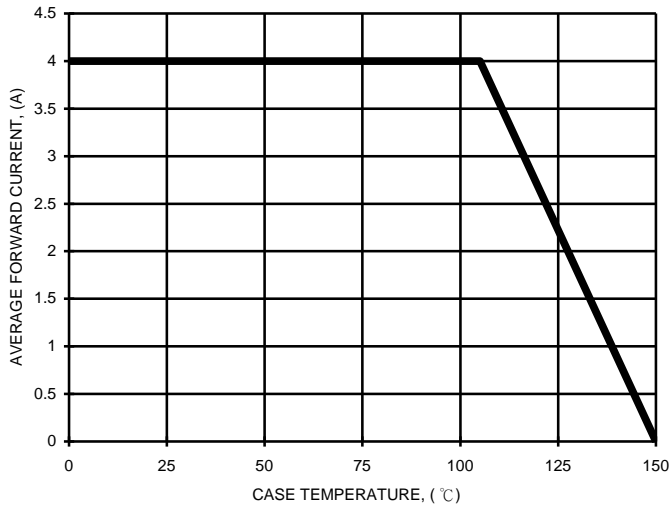


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

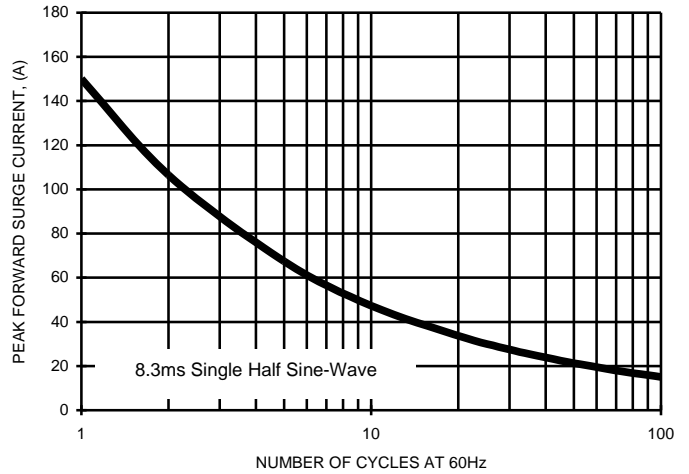


FIG.3- TYPICAL JUNCTION CAPACITANCE

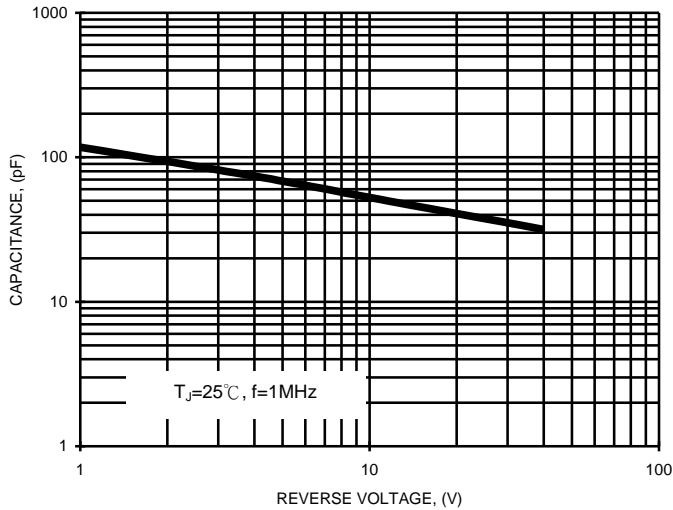


FIG.4- TYPICAL FORWARD CHARACTERISTICS

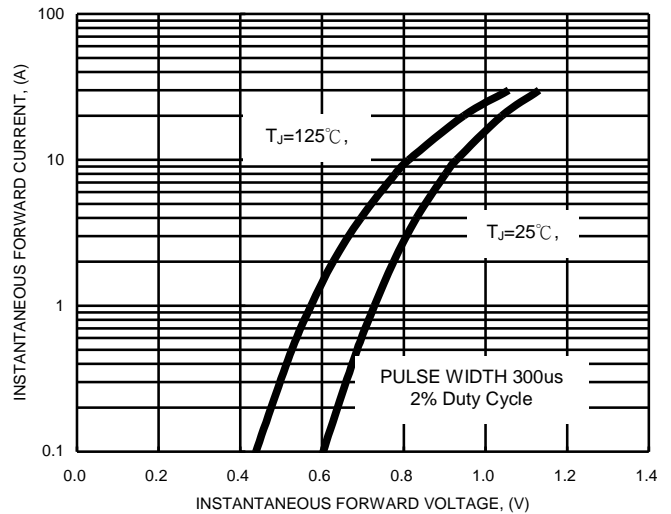
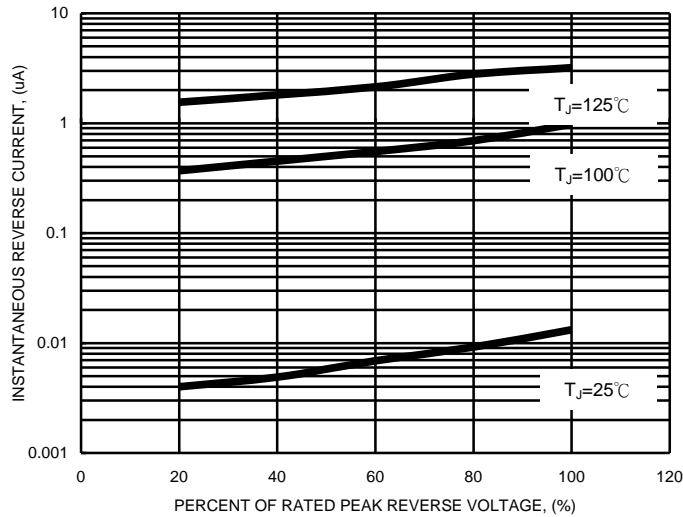


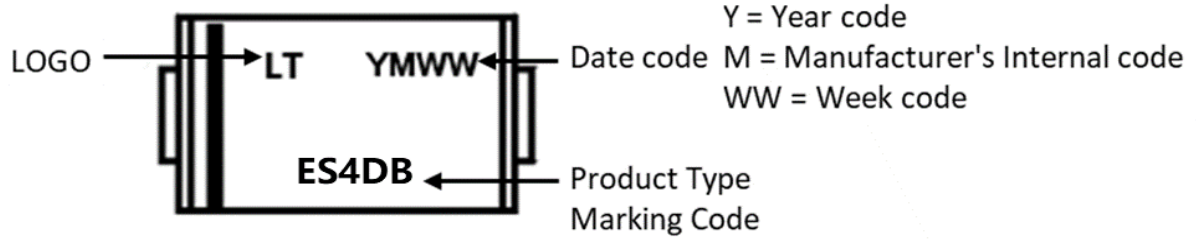
FIG.5- TYPICAL REVERSE CHARACTERISTICS



Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
ES4DB_HF	SMB	3000	Tape & Reel

Marking Information:



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