ES1AB THRU ES1MB

1 Amperes Surface Mount Super Fast Rectifiers
VOLTAGE : 50 TO 1000Volts

Features

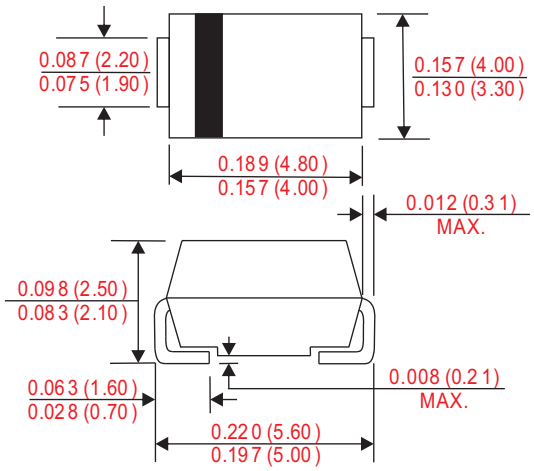
- Low profile surface mounted application in order to optimize board space.
- High current capability, low forward voltage drop.
- High surge capability.
- Superfast recovery time for switching mode application.
- Glass passivated chip junction.
- Suffix "G" indicates Halogen-free part, ex.ES1ABG.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AA / SMB
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : 0.003 ounce, 0.091 gram

Outline

SMB(DO-214AA)



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Parameter	Symbol	ES1AB	ES1BB	ES1DB	ES1GB	ES1JB	ES1KB	ES1MB	UNIT
Making code		ES1A	ES1B	ES1D	ES1G	ES1J	ES1K	ES1M	
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	
Maximum Forward Voltage	V_F	0.95			1.25	1.70			V
Operating Temperature	T_J	-50 ~ +150							°C

Parameter	Conditions	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current		I_O			1.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC methode)	I_{FSM}			30	A
Reverse current	$V_R = V_{RRM}$ $T_A = 25°C$	I_R			1.0	uA
	$V_R = V_{RRM}$ $T_A = 125°C$				300	
Maximum reverse recovery time	$I_F = 0.5A$, $I_R = 1.0A$, $I_{RR} = 0.25A$	T_{rr}			35	nS
Typical thermal resistance	8.0mm²(0.013mm thick) land areas	$R_{\theta JA}$		35		°C/W
Typical junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		7.0		pF

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Document ID : DS-12E11
Issued Date : 2010/05/05
Revised Date : 2010/10/08
Revision : B

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Rating and characteristic curves

FIG.1-TYPICAL FORWARD CHARACTERISTICS

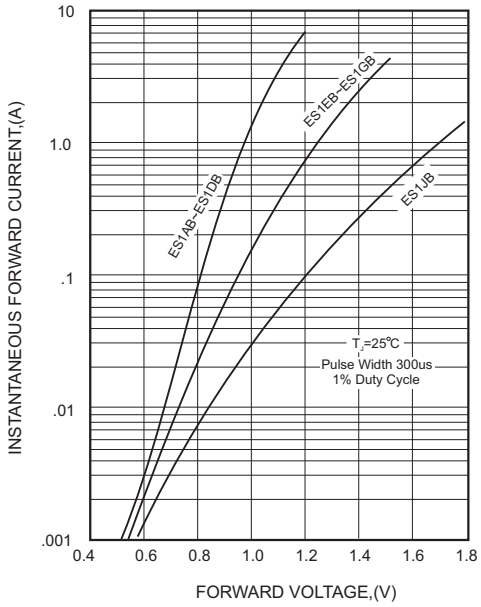


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

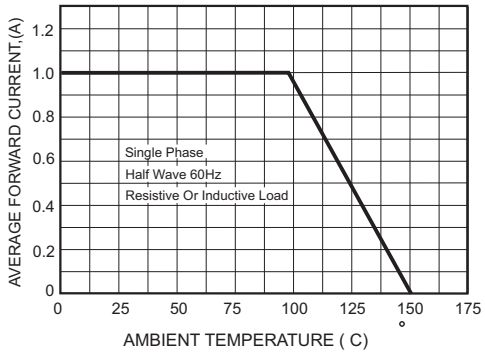
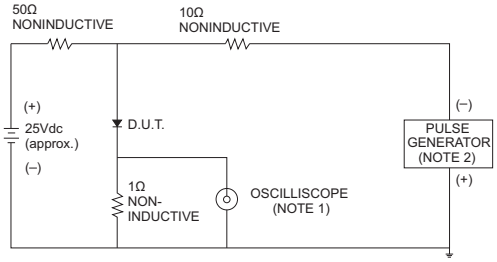
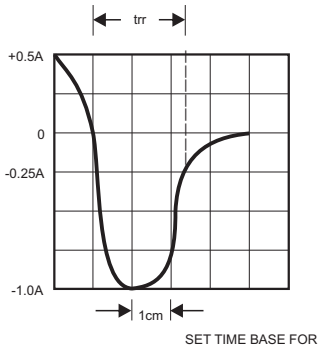


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.

2. Rise Time= 10ns max., Source Impedance= 50 ohms.



SET TIME BASE FOR
50 / 10ns / cm

FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

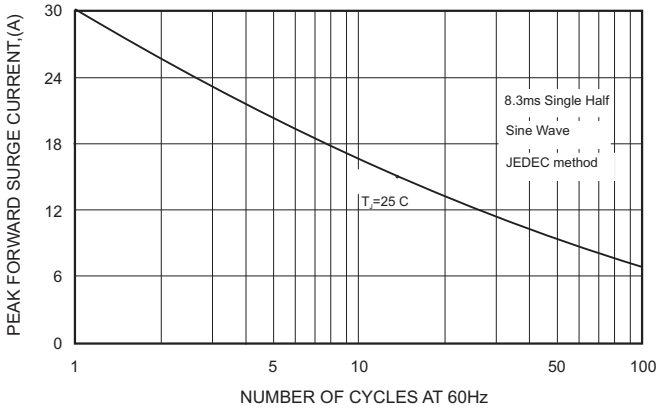


FIG.5-TYPICAL JUNCTION CAPACITANCE