

3A Surface Mount Super Fast Rectifiers



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.ES3ABG.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

SMB(DO-214AA)

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

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	Conditions	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current		I_O			3.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method)	I_{FSM}			100	A
Reverse current	$V_R = V_{RRM} \quad T_A = 25^\circ\text{C}$	I_R			5.0	uA
	$V_R = V_{RRM} \quad T_A = 125^\circ\text{C}$				100	
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		45		pF
Storage temperature		T_{STG}	-55		+150	°C

Symbol	Marking code	Max. repetitive peak reverse voltage V_{RRM} (V)	Max. RMS voltage V_{RMS} (V)	Max. DC blocking voltage V_R (V)	Max. forward voltage @3A, $T_A = 25^\circ\text{C}$ V_F (V)	Max. reverse recovery time(1) T_{rr} (ns)	Operating temperature T_J (°C)
ES3AB	ES3A	50	35	50	0.95	35	-55 ~ +150
ES3BB	ES3B	100	70	100			
ES3DB	ES3D	200	140	200			
ES3GB	ES3G	400	280	400	1.25		
ES3JB	ES3J	600	420	600	1.70		

Note : 1. $I_F = 0.5A$, $I_R = 1.0A$, $I_{RR} = 0.25A$

Rating and characteristic curves

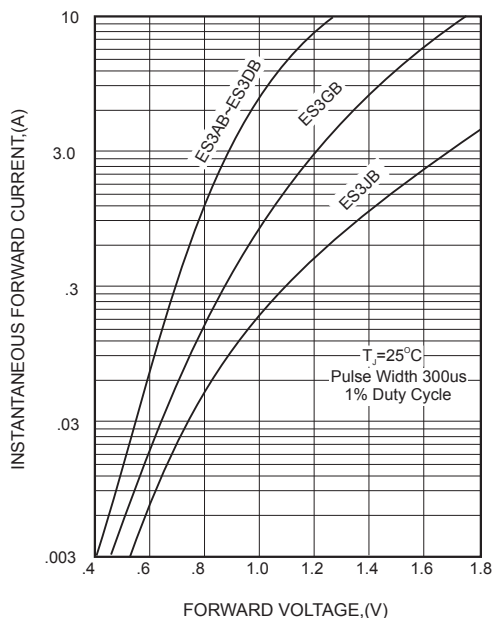
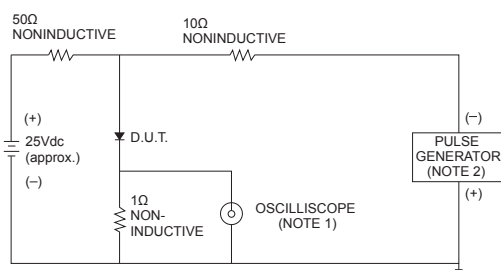


FIG.1-TYPICAL FORWARD CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.
 2. Rise Time= 10ns max., Source Impedance= 50 ohms.

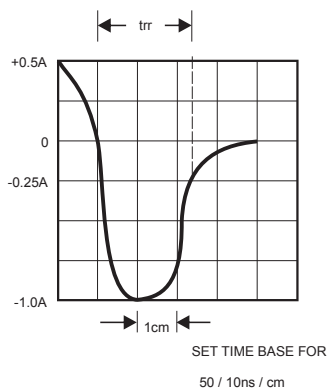


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS

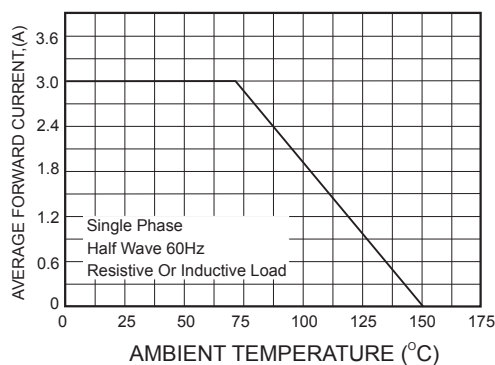


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

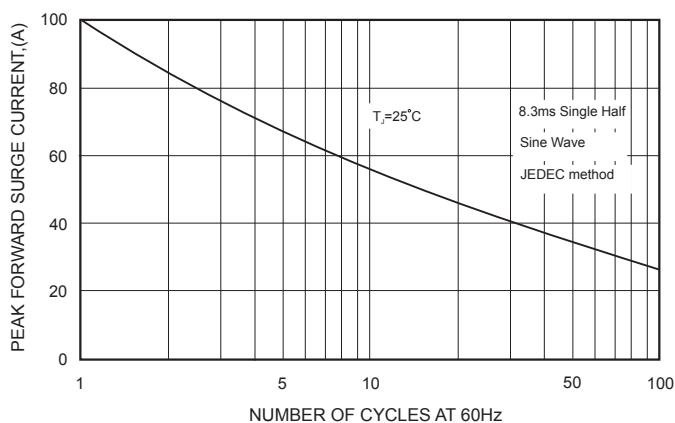


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

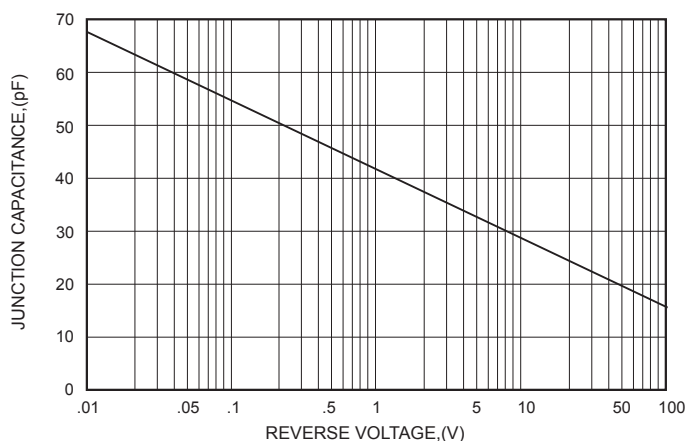
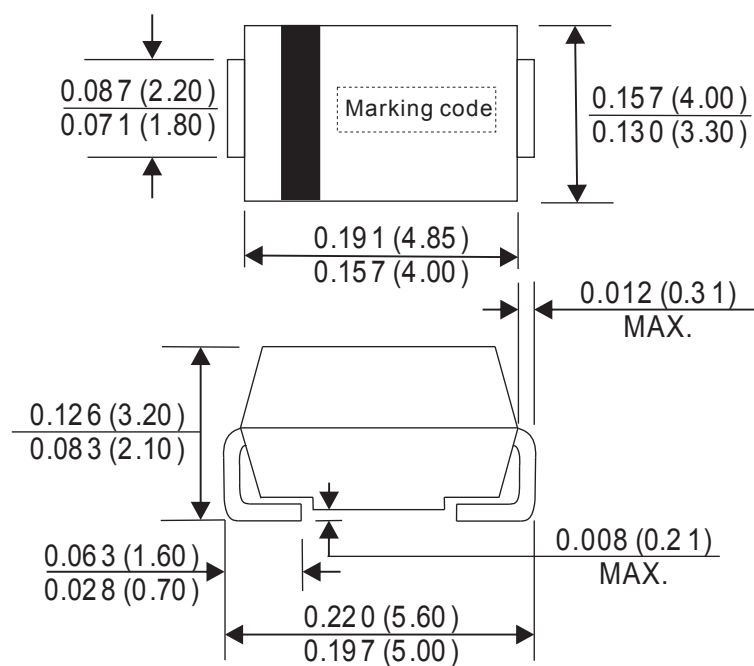


FIG.5-TYPICAL JUNCTION CAPACITANCE

OUTLINE



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Dimensions in inches and (millimeters)