



DB301S THRU DB307S

VOLTAGE RANGE

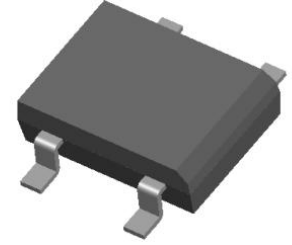
50 to 1000 Volts

CURRENT

3.0 Ampere

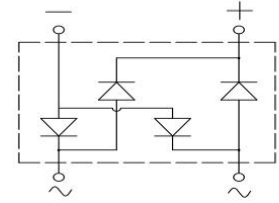
Features

- UL recognition, file #E313149
- Ideal for automated placement
- High surge current capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C



Mechanical Data

- Package: DBS
- Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, Halogen free
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: As marked on body



Maximum Ratings and Electrical Characteristics

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

TYPE NUMBER	SYMBOL	DB 301S	DB 302S	DB 303S	DB 304S	DB 305S	DB 306S	DB 307S	UNITS
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current $T_L=100^\circ\text{C}$	$I_{(AV)}$	3.0							Amp
Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC method)	I_{FSM}	80							Amps
Current squared time @ $1\text{ms} \leq t < 8.3\text{ms}$ $T_j=25^\circ\text{C}$, Rating of per diode	I^2t	15							A^2s
Maximum Instantaneous Forward Voltage @ 3.0A	V_F	1.1							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_A = 25^\circ\text{C}$	5.0							μA
	$T_A = 125^\circ\text{C}$	100							
Typical junction capacitance ^(NOTE 1)	C_j	30							pF
Typical Thermal Resistance ^(Note 2)	$R_{\theta JA}$	68							$^\circ\text{C}/\text{W}$
	$R_{\theta JL}$	15							
Operating Junction Temperature Range	T_j, T_{STG}	-55 to +150							$^\circ\text{C}$

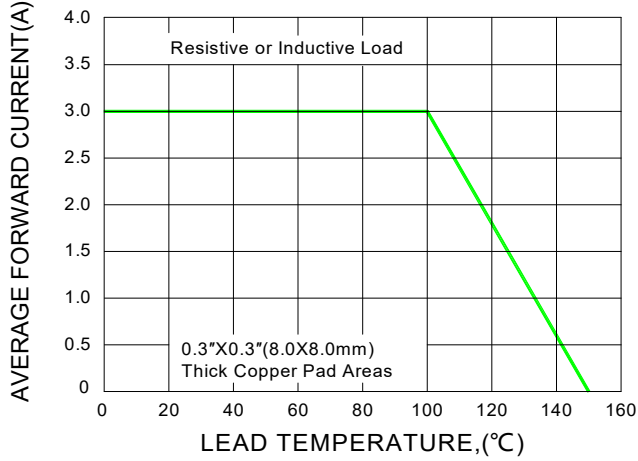
Notes:

1. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
2. Thermal Resistance test performed in accordance with JESD-51. Unit mounted on 15mm*12mm*1.6mm AL pad attach 195mm*110mm*10mm steel plate.
3. The typical data above is for reference only.

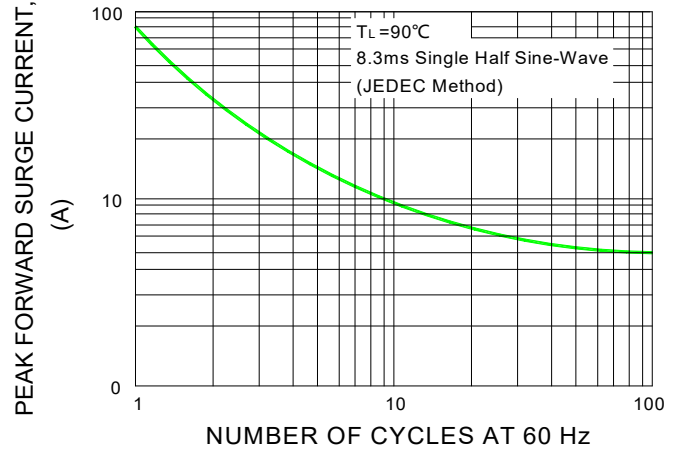


Ratings and Characteristic Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

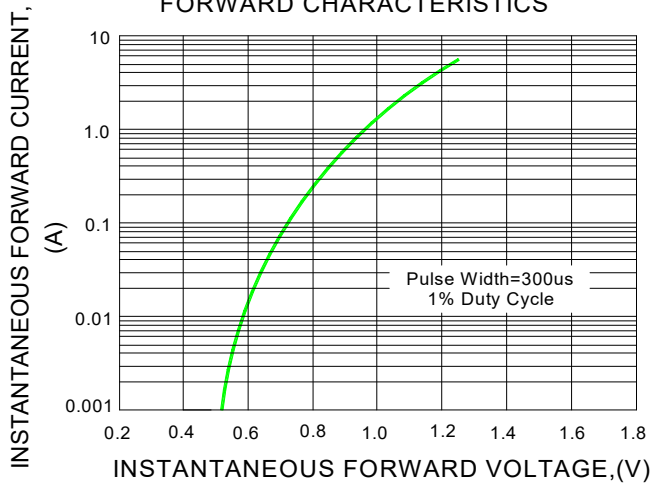
F1G.1-FORWARD CURRENT DERATING CURVE



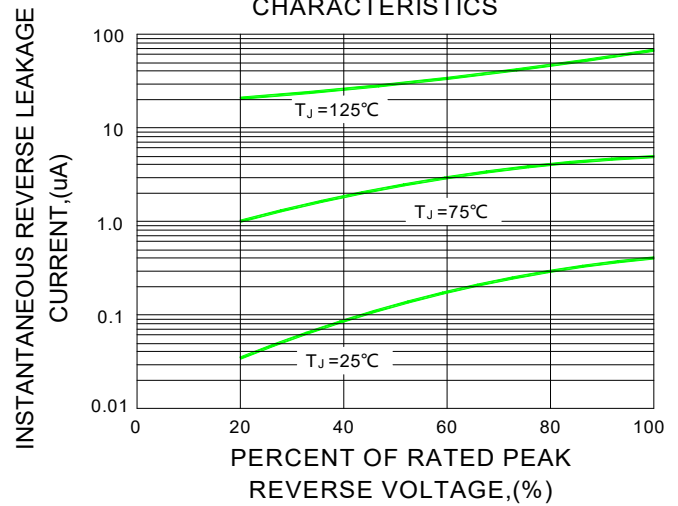
F1G.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



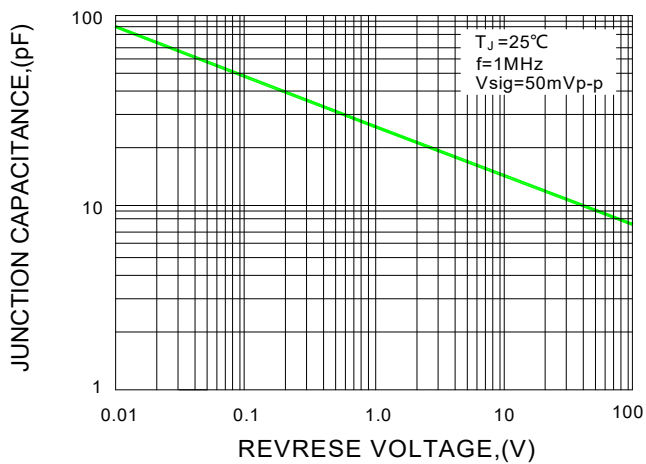
F1G.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



F1G.4-TYPICAL REVERSE CHARACTERISTICS



F1G.5-TYPICAL JUNCTION CAPACITANCE





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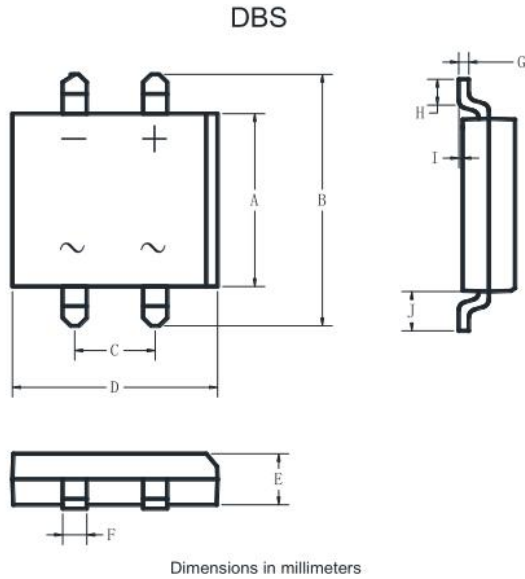
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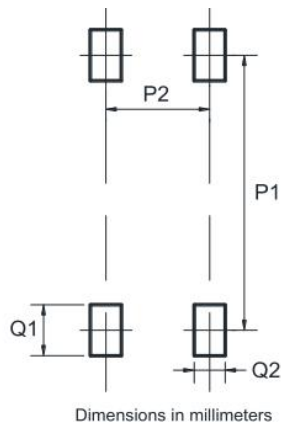
Package Outline Dimensions in inches (millimeters)

- Outline Dimensions



Dim	mm		in	
	min	max	min	max
A	6.20	6.50	.244	.256
B	9.60	10.30	.378	.406
C	5.00	5.20	.197	.205
D	8.13	8.51	.320	.335
E	2.38	2.45	.093	.096
F	0.98	1.13	.038	.044
G	0.18	0.23	.007	.009
H	1.02	1.53	.040	.060
I	0.05	0.20	.001	.007
J	1.80	2.10	.070	.082

- Suggested pad layout

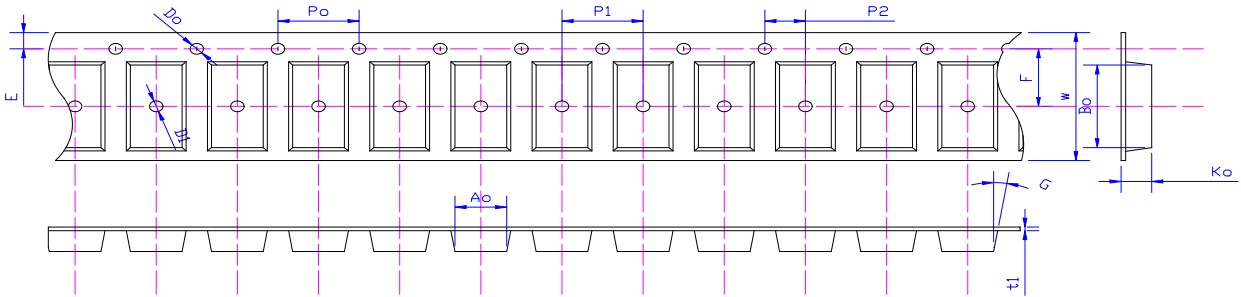


Dim	Min
P1	8.73
P2	5.12
Q1	2.22
Q2	1.2



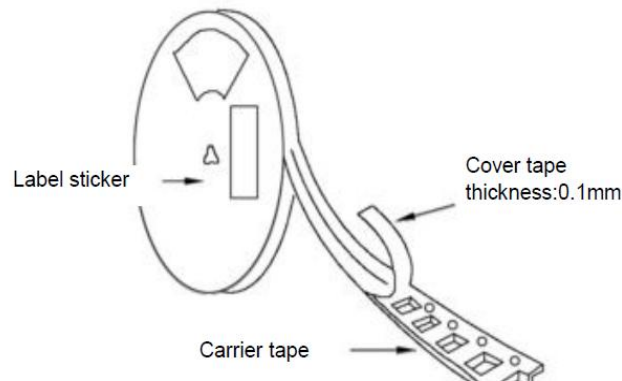
Packing Requirments

- PS black anti-static carrier tape packing



Specifications	A_o	B_o	K_o	P_o	W	t_1
DBS	8.64 ± 0.10	9.85 ± 0.10	2.60 ± 0.10	4.00 ± 0.1	16.0 ± 0.10	0.30 ± 0.02

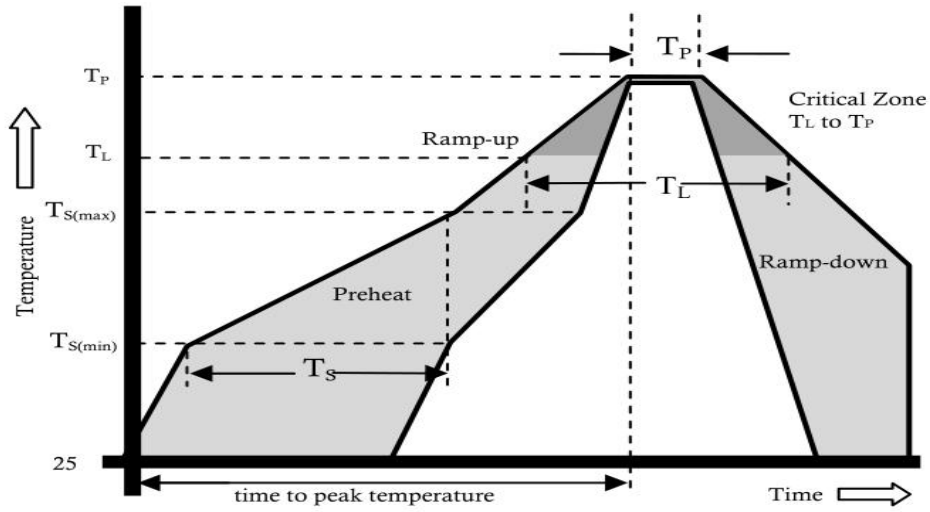
- 13 "antistatic plastic reel



DEVICE TYPE	13" Reel			
	Q'TY/REEL(pcs)	REEL/BOX	BOX/CARTOON	Q'TY/CARTON(pcs)
DBS	3000	2	8	48000



Reflow Profile



Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp(T_L) to peak)		3°C/sec. Max.
T_S (max) to T_L - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature (T_L)(Liquidus)	+217°C
	Temperature (T_L)	60-150 secs.
Peak Temp (T_p)		+(260+0/-5)°C
Time within 5°C of actual Peak Temp (T_p)		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp (T_p)		8 min. Max.
Do not exceed		+260°C



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Disclaimer

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