

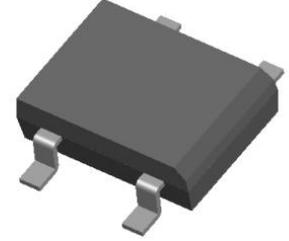


## DB401S THRU DB407S

VOLTAGE RANGE	50 to 1000 Volts
CURRENT	4.0 Ampere

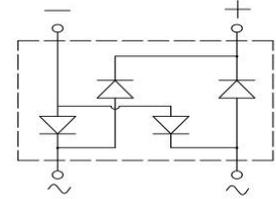
## Features

- 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 401S	DB 402S	DB 403S	DB 404S	DB 405S	DB 406S	DB 407S	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 $T_L=100^\circ\text{C}$	$I_{(AV)}$	4.0							Amp
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$	120							Amps
Current squared time @1ms≤t<8.3ms $T_J=25^\circ\text{C}$ , Rating of per diode	$I^2t$	63							A <sup>2</sup> s
Maximum Instantaneous Forward Voltage @ 4.0A	$V_F$	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							°C/W
	$R_{\theta JL}$	15							
Operating Junction Temperature Range	$T_J, T_{STG}$	(-55 to +150)							°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.

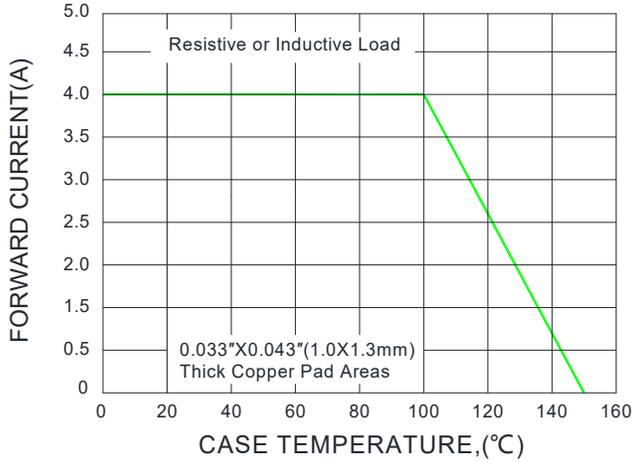


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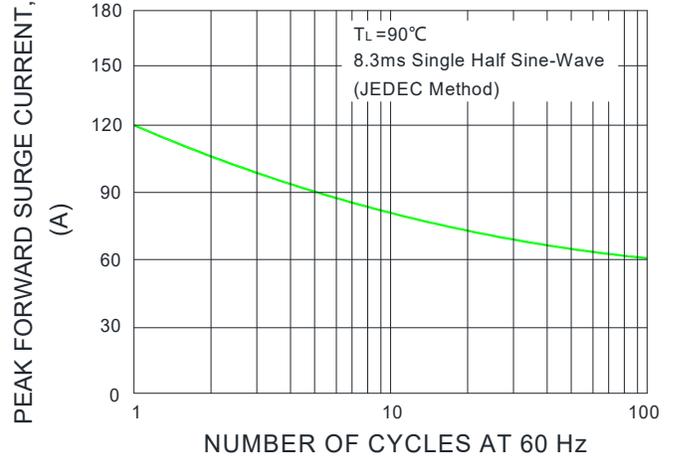
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## Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

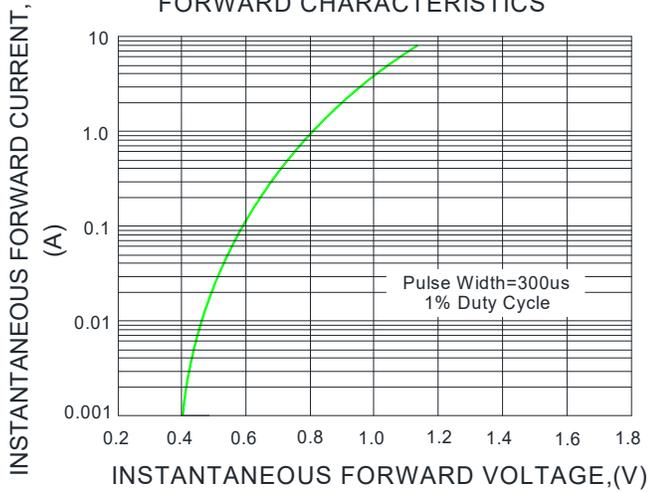
F1G.1-FORWARD CURRENT DERATING CURVE



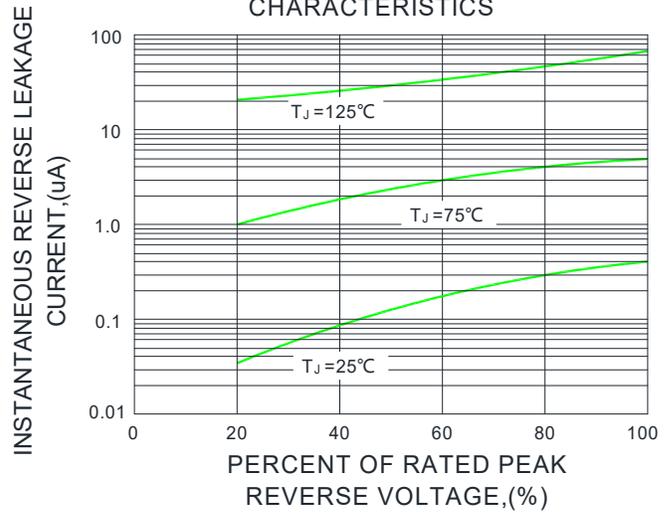
F1G.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



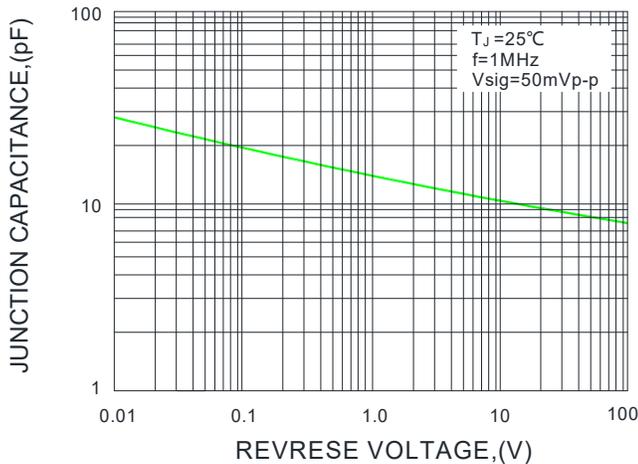
F1G.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



F1G.4-TYPICAL REVERSE CHARACTERISTICS



F1G.5-TYPICAL JUNCTION CAPACITANCE



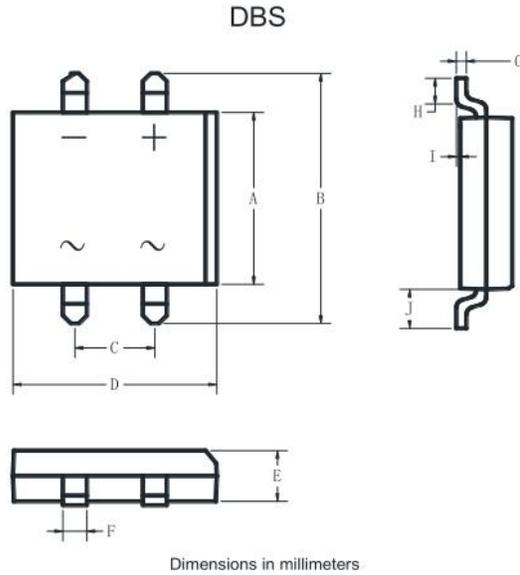


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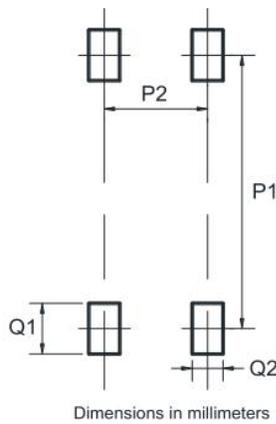
Package Outline Dimensions in inches (millimeters)

- 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

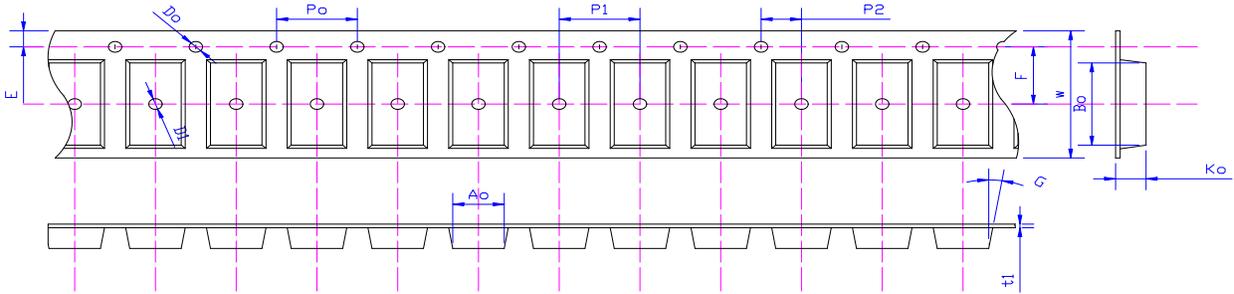


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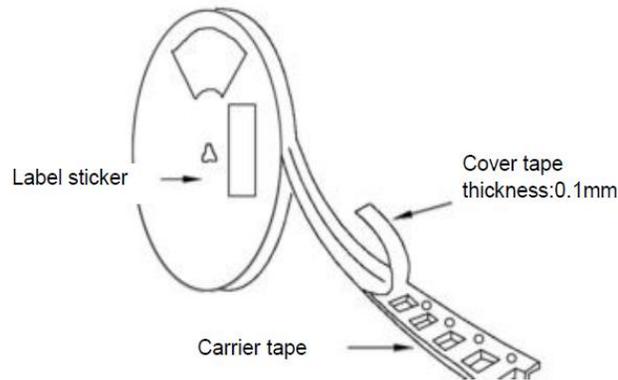
Packing Requirments

- PS black anti-static carrier tape packing



Specifications	Ao	Bo	Ko	Po	W	t1
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

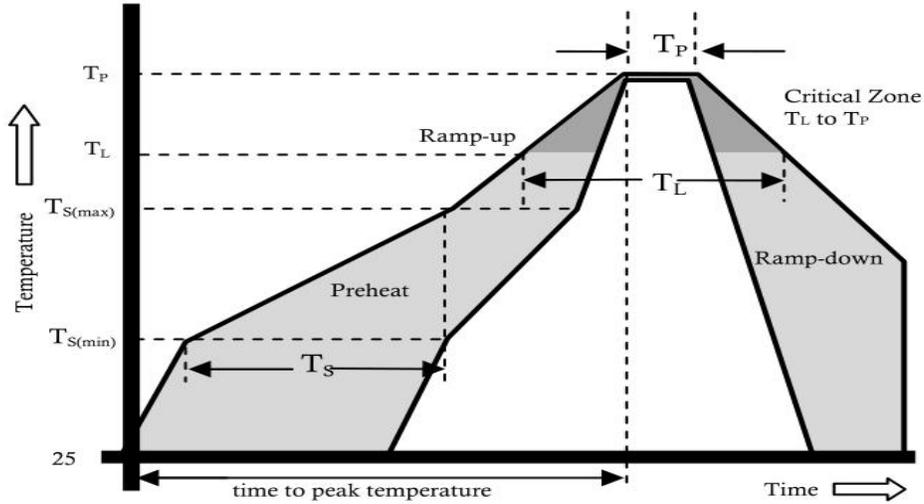
- 13 "antistatic plastic reel



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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