

ABS2 THRU ABS10

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ABS2 THRU ABS10

1.0A Miniature Glass Passivated Single-Phase Surface Mount Bridge Rectifiers 200V-1000V

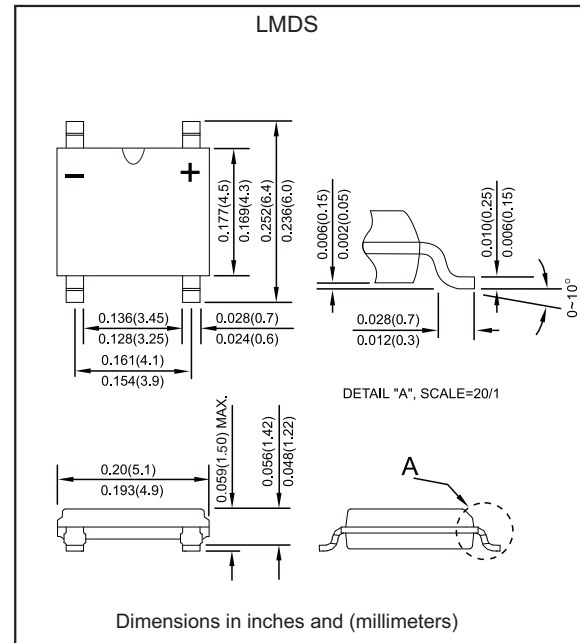
Features

- Glass passivated junction
- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique
- High temperature soldering guaranteed:
260°C / 10 seconds / 0.375" (9.5mm)
lead length at 5 lbs., (2.3 kg) tension
- High surge current capability
- Lead-free parts meet RoHS requirements
- Suffix "-H" indicates Halogen-free part, ex. ABS2-H

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, LMDS
- Terminals : Solder plated, solderable per
MIL-STD-202, Method 208
- Polarity : marked on body
- Mounting Position : Any
- Weight : Approximated 0.0992 gram

Package outline



Maximum ratings (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	ABS2	ABS4	ABS6	ABS8	ABS10	UNITS
Maximum repetitive peak reverse voltage	V_{RRM}	200	400	600	800	1000	Volts
Maximum RMS voltage	V_{RMS}	140	280	420	560	700	Volts
Maximum DC blocking voltage	V_{DC}	200	400	600	800	1000	Volts
Maximum average forward rectified current On glass-epoxy P.C.B. On aluminum substrate	I_O	0.8 1.0					Amps
Non-repetitive peak forward surge current 8.3ms single half sine-wave	I_{FSM}	30					Amps
Rating for fusing $t < 8.3\text{ms}$	I^2t	3.7					A^2s
Operating junction temperature range	T_J	-55 to +150					$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150					$^{\circ}\text{C}$

Electrical characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	ABS2	ABS4	ABS6	ABS8	ABS10	UNITS
Maximum instantaneous forward voltage at $I_F=0.4\text{A}$	V_F	0.95					Volts
Maximum DC reverse current at rated DC blocking voltage	I_R	10 500					μA

Thermal characteristics

PARAMETER	SYMBOLS	ABS2	ABS4	ABS6	ABS8	ABS10	UNITS
Typical thermal resistance junction to ambient on aluminum substrate	RθJA	62.5					°C / W
Typical thermal resistance junction to ambient on glass-epoxy substrate	RθJA	80					
Typical thermal resistance junction to case	RθJC	30					
Typical thermal resistance junction to lead	RθJL	25					

Rating and characteristic curves (ABS2 THRU ABS10)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

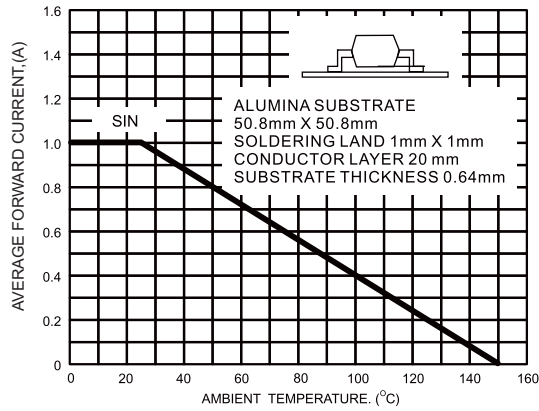


FIG.2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

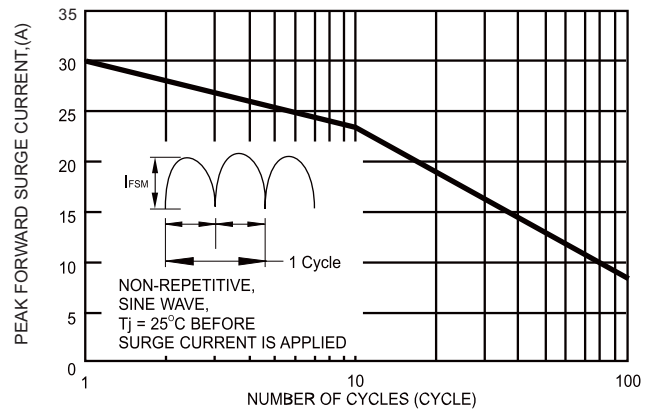


FIG.3-TYPICAL FORWARD CHARACTERISTICS

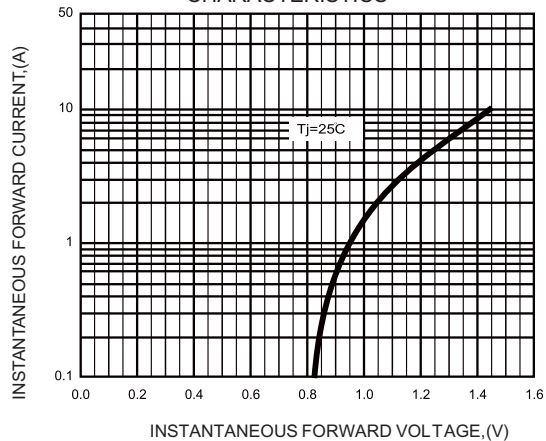


FIG.4-TYPICAL REVERSE CHARACTERISTICS

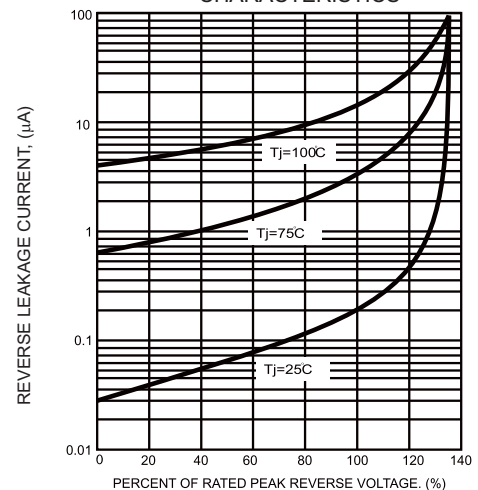
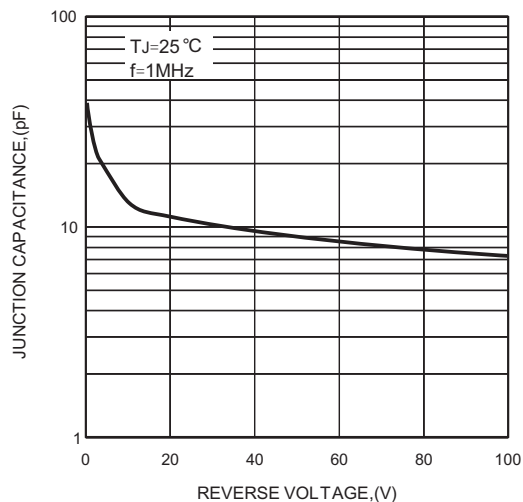
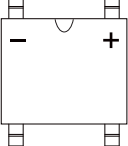
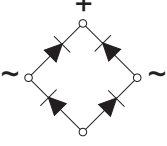


FIG.5- TYPICAL JUNCTION CAPACITANCE

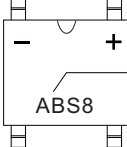
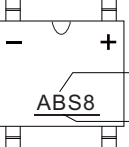


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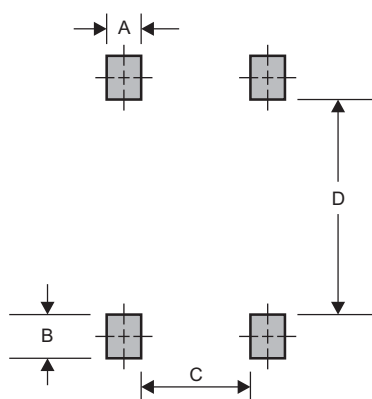
Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code	Example	
ABS2 ABS4 ABS6 ABS8 ABS10	ABS2 ABS4 ABS6 ABS8 ABS10	1. For Halogen Device 	2. For Halogen-free Device 
		Marking code	1st line: Marking code 2nd line: — indicate Halogen-Free.

Suggested solder pad layout

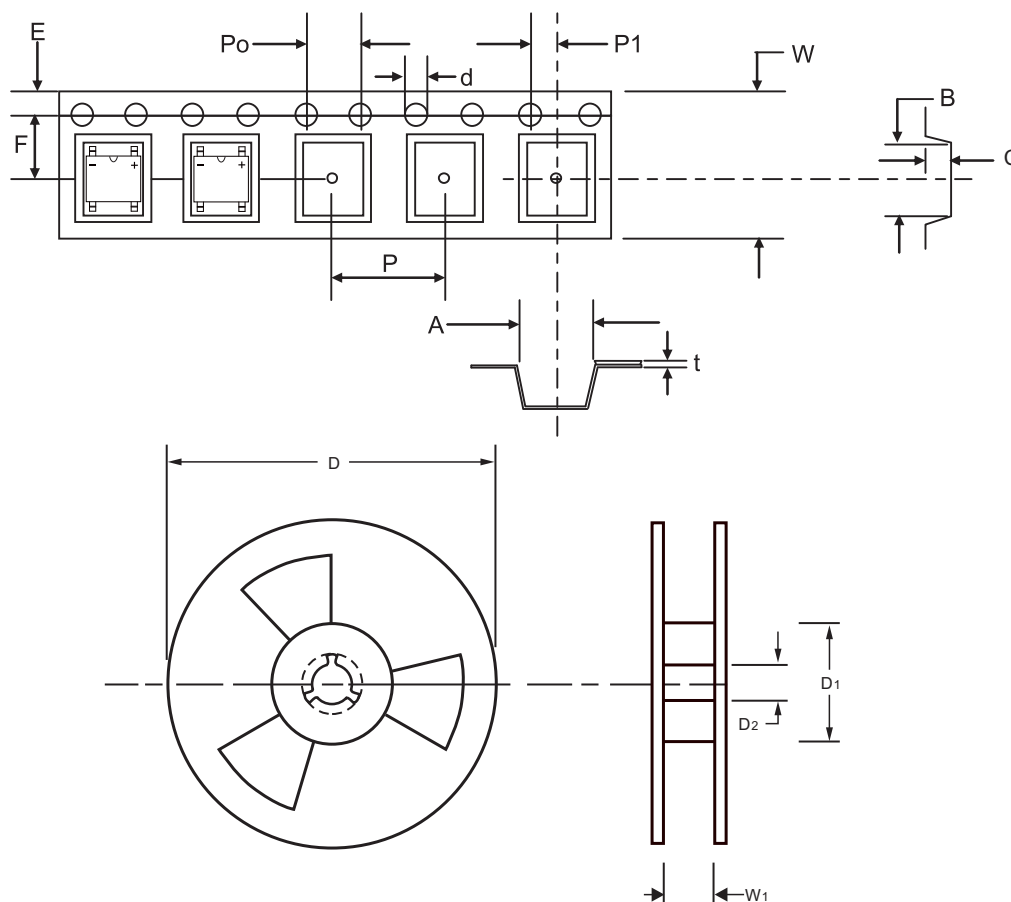


Dimensions in inches and (millimeters)

PACKAGE	A	B	C	D
LMDS	0.032 (0.80)	0.032 (0.80)	0.132 (3.35)	0.193 (4.90)

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Packing information



unit:mm

Item	Symbol	Tolerance	LMDS
Carrier width	A	0.1	5.31
Carrier length	B	0.1	6.68
Carrier depth	C	0.1	1.60
Sprocket hole	d	0.05	1.55
13" Reel outside diameter	D	2.0	330.00
13" Reel inner diameter	D1	min	50.00
7" Reel outside diameter	D	2.0	-
7" Reel inner diameter	D1	min	-
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.05	5.50
Punch hole pitch	P	0.1	8.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.05	2.00
Overall tape thickness	t	0.1	0.30
Tape width	W	0.3	12.00
Reel width	W1	1.0	12~14.4

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

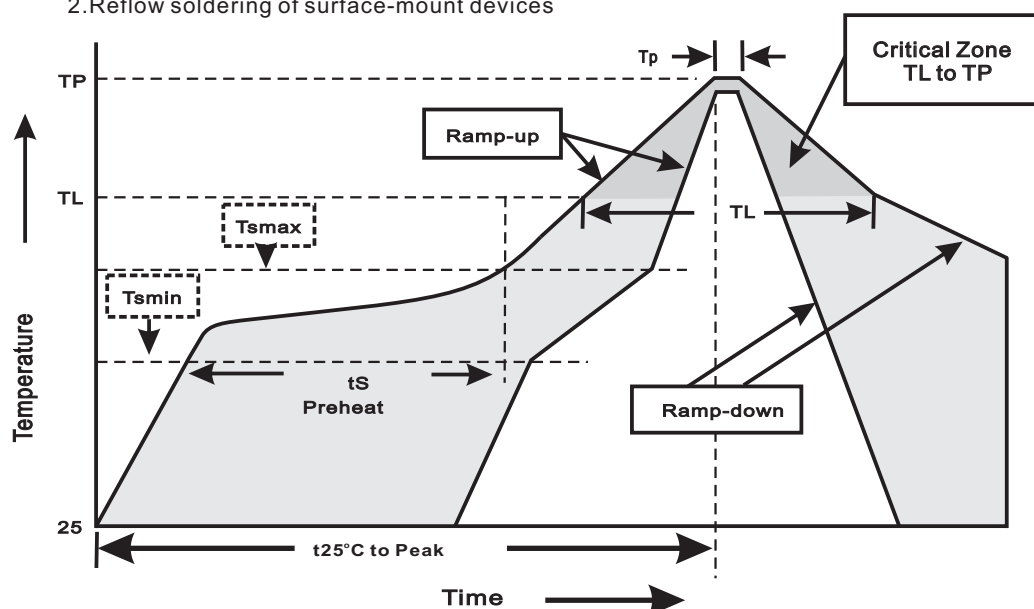
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Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
LMDS	13"	5,000	8.0	10,000	335*335*38	330	350*330*360	80,000	19.0

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T _L to T _P)	<3°C/sec
Preheat -Temperature Min(T _{smIn}) -Temperature Max(T _{smax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smax} to T _L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T _L) -Time(t _L)	217°C 60~260sec
Peak Temperature(T _P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t _P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260 \pm 5^{\circ}\text{C}$ for $10 \pm 2\text{sec.}$	MIL-STD-750D METHOD-2031
2. Solderability	at $245 \pm 5^{\circ}\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R = 80\%$ rate at $T_J = 150^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A = 25^{\circ}\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^{\circ}\text{C}$, $I_F = I_O$ On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	$15P_{SIG}$ at $T_A = 121^{\circ}\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to $+125^{\circ}\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	8.3ms single half sine-wave , one surge.	MIL-STD-750D METHOD-4066-2
9. Humidity	at $T_A = 85^{\circ}\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031