

GL34A THRU GL34M

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GL34A THRU GL34M

0.5A Surface Mount General Purpose Rectifiers - 50V-1000V

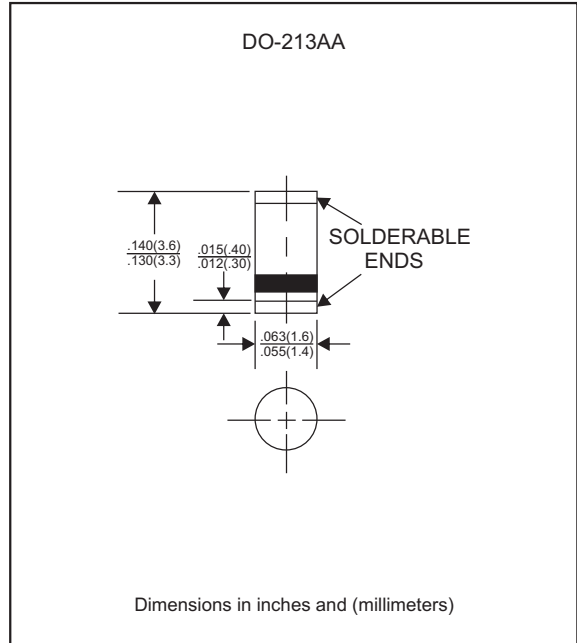
Features

- Low profile surface mounted application in order to optimize board space.
- High current capability.
- High surge capability.
- Glass passivated chip junction.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Suffix "-H" indicates Halogen-free parts, ex. GL34A-H.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, Mini-Melf / DO-213AA
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.03 gram

Package outline



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

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1	I_o			0.5	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			10	A
Reverse current	$V_R = V_{RRM} T_J = 25^\circ\text{C}$	I_R			5.0	μA
	$V_R = V_{RRM} T_J = 125^\circ\text{C}$				250	
Thermal resistance	Junction to ambient	$R_{\theta JA}$		125		$^\circ\text{C}/\text{W}$
Diode junction capacitance	$f=1\text{MHz}$ and applied 4V DC reverse voltage	C_j		4.0		pF
Storage temperature		T_{STG}	-65		+175	$^\circ\text{C}$

SYMBOLS	V_{RRM}^{*1} (V)	V_{RMS}^{*2} (V)	V_R^{*3} (V)	V_F^{*4} (V)	Operating temperature T_{Jj} , ($^\circ\text{C}$)
GL34A	50	35	50	1.10	-55 to +150
GL34B	100	70	100		
GL34D	200	140	200		
GL34G	400	280	400		
GL34J	600	420	600		
GL34K	800	560	800		
GL34M	1000	700	1000		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage@ $I_F=0.5\text{A}$

Rating and characteristic curves (GL34A THRU GL34M)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

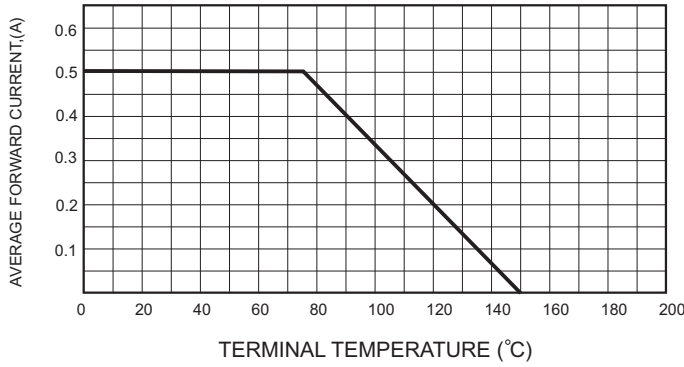


FIG.2-TYPICAL FORWARD CHARACTERISTICS

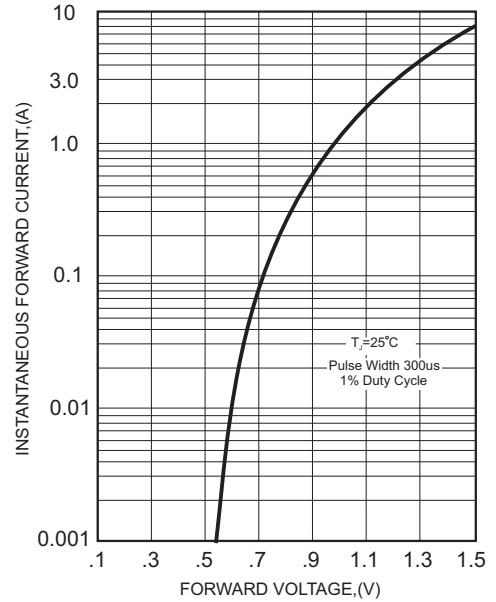


FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

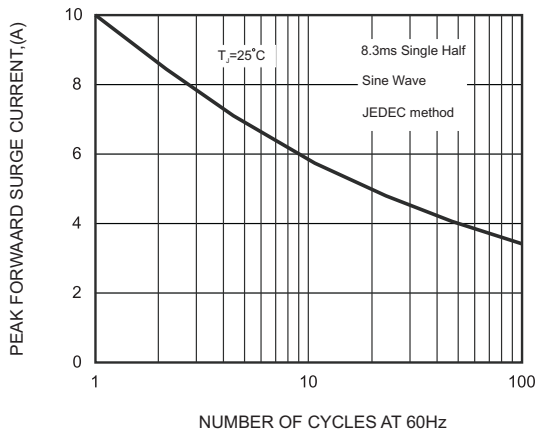


FIG.5 - TYPICAL REVERSE CHARACTERISTICS

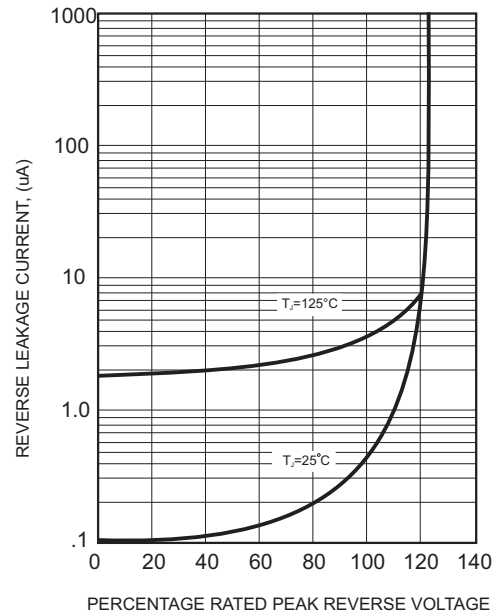
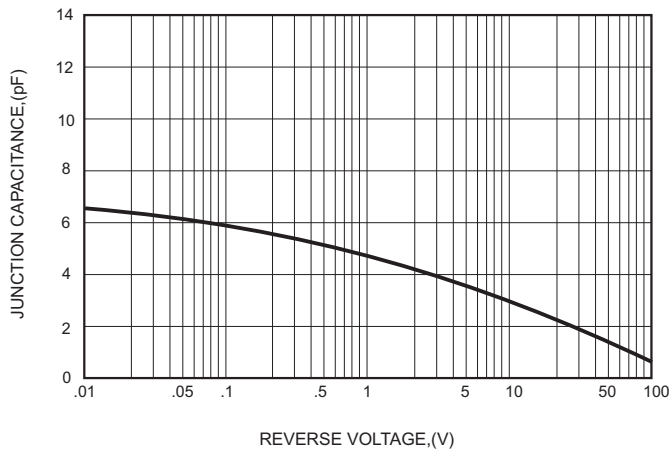




FIG.4-TYPICAL JUNCTION CAPACITANCE



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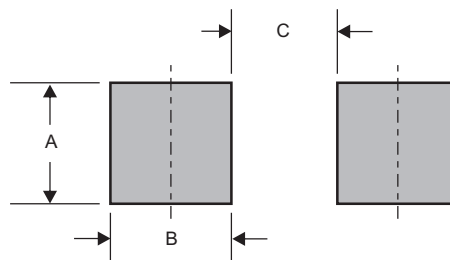
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
GL34A	cathode band only
GL34B	cathode band only
GL34D	cathode band only
GL34G	cathode band only
GL34J	cathode band only
GL34K	cathode band only
GL34M	cathode band only

Suggested solder pad layout

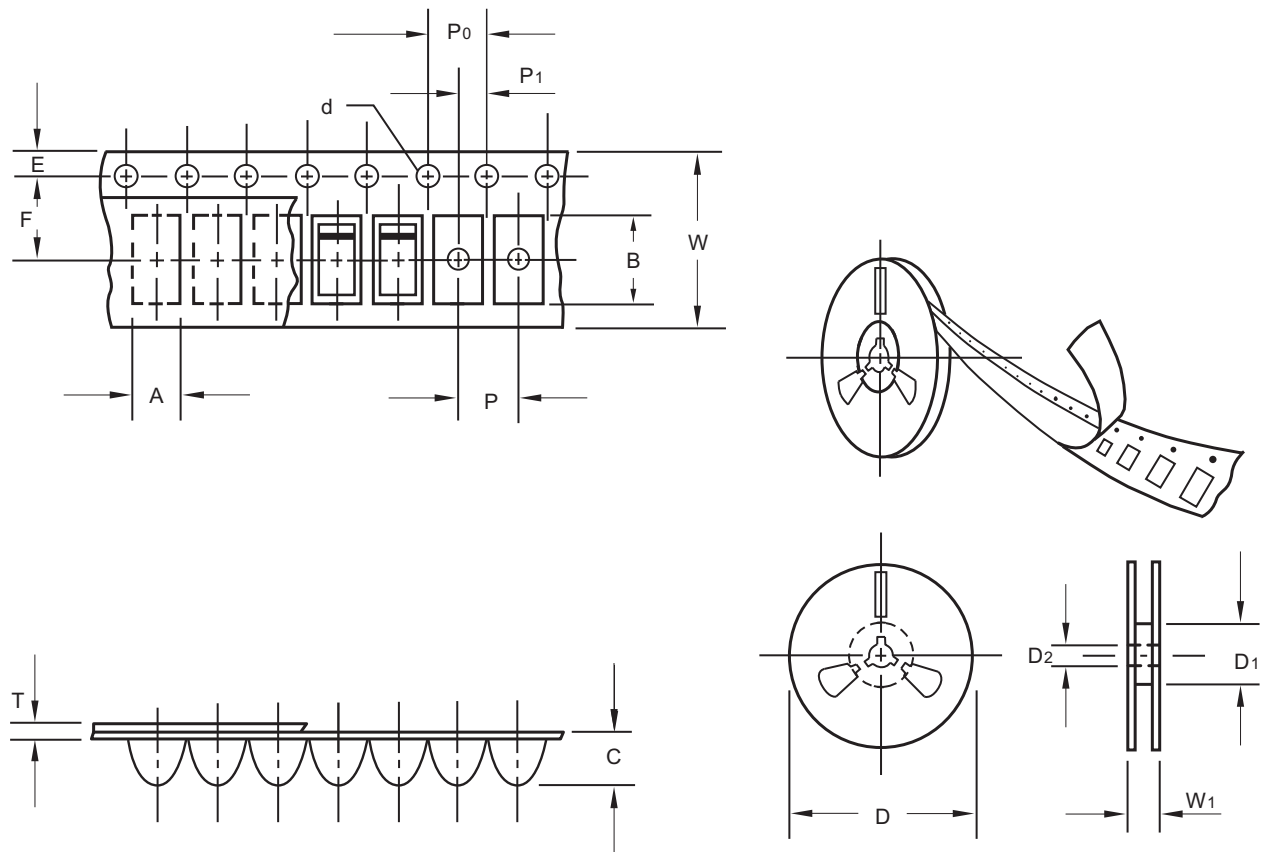


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
DO-213AA	0.071 (1.80)	0.035 (0.90)	0.102 (2.60)

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Packing information



unit:mm

Item	Symbol	Tolerance	DO-213AA
Carrier width	A	0.1	1.78
Carrier length	B	0.1	3.90
Carrier depth	C	0.1	1.80
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	330
13" Reel inner diameter	D ₁	min	50
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D ₁	min	62.00
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	5.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	12.00
Reel width	W ₁	1.0	18.00

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

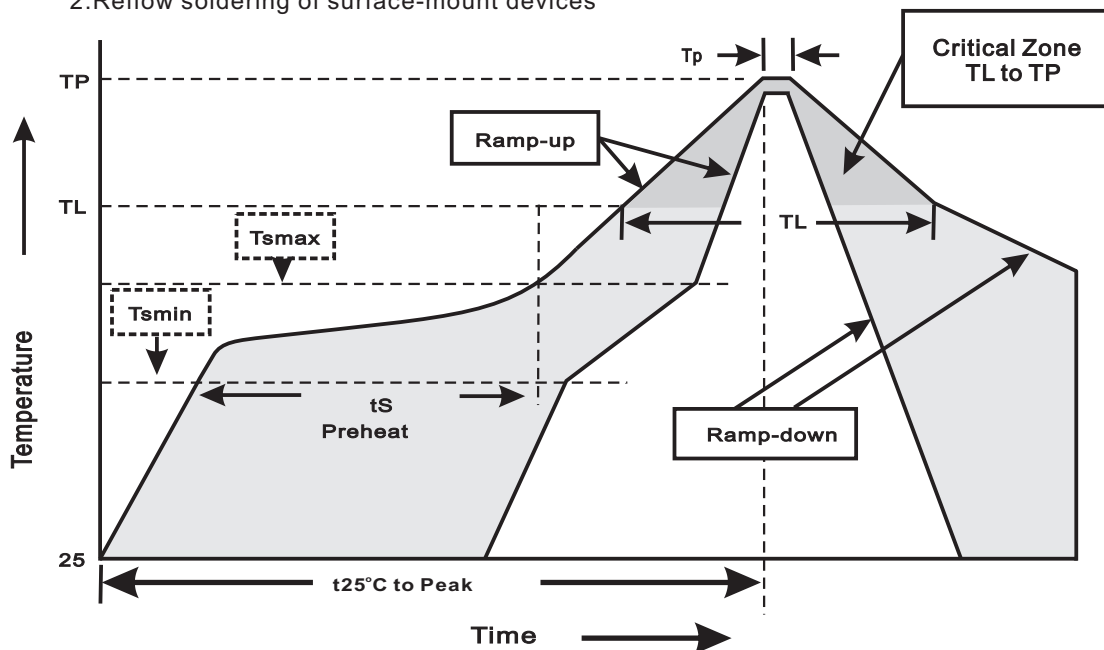
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Reel packing

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)
DO-213AA	7"	2,500	4.0	25,000	183*183*123	178	382*262*387	200,000	17.0

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 _{smmin}) -Temperature Max(T _{smmax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smmax} 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

GL34A THRU GL34M**High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at $260\pm 5^{\circ}\text{C}$ for $10\pm 2\text{sec}$. immerse body into solder $1/16''\pm 1/32''$	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