

DESCRIPTION

The GLF1800, GLF1800T and GLF1800AT are ideal diode switches featuring a low forward voltage drop. They are characterized by low quiescent current (I_Q), ultra-low shutdown current (I_{SD}), and low forward voltage drop, making them suitable replacements for conventional Schottky diodes. These attributes help reduce power consumption and enhance overall system efficiency.

The ideal diodes GLF1800, GLF1800T and GLF1800AT support an input voltage range of 1.8 V to 5.5 V. The GLF1800 provides a maximum continuous current of 1.0 A, while the GLF1800T and GLF1800AT provide up to 1.5 A. The GLF1800 comes in the standard SOT23-5L package, whereas the GLF1800T and GLF1800AT are available in a Thin WLCSP package, making it suitable for a variety of low-voltage electronic applications.

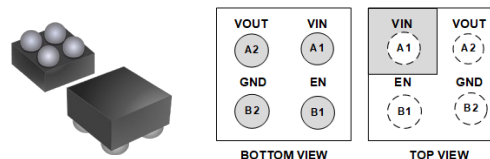
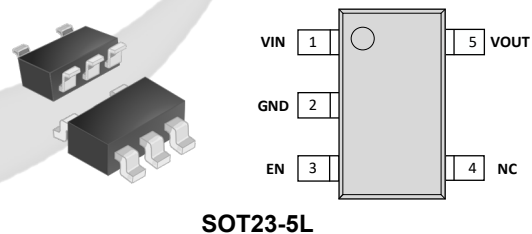
FEATURES

- Input Voltage Range: 1.8 V to 5.5 V, 6.0 V_{ABS}
- Maximum Continuous Current:
 - GLF1800: 1.0 A
 - GLF1800T and GLF1800AT: 1.5 A
- Low Forward Voltage Drop:
 - GLF1800: 19 mV (Typ.) at $I_{OUT} = 100$ mA
 - GLF1800T: 12 mV (Typ.) at $I_{OUT} = 100$ mA
 - GLF1800AT: 12 mV (Typ.) at $I_{OUT} = 100$ mA
 - GLF1800: 117 mV (Typ.) at $I_{OUT} = 1.0$ A
 - GLF1800T: 73 mV (Typ.) at $I_{OUT} = 1.0$ A
 - GLF1800AT: 73 mV (Typ.) at $I_{OUT} = 1.0$ A
 - GLF1800T: 111 mV (Typ.) at $I_{OUT} = 1.5$ A
 - GLF1800AT: 111 mV (Typ.) at $I_{OUT} = 1.5$ A
- Quiescent Current, I_Q :
 - 1.0 μ A (Typ.) at $V_{IN} = 1.8$ V
 - 1.1 μ A (Typ.) at $V_{IN} = 3.6$ V
 - 1.2 μ A (Typ.) at $V_{IN} = 5.5$ V
- Low Reverse Current Regardless of ON & OFF:
 - 2 nA (Typ.) at $V_{OUT} = 5.5$ V
- Reverse Bias Turn-off Response: 12 μ s (Typ.)
- Short Circuit Protection
 - Auto-Retry by Thermal Shutdown Protection

APPLICATIONS

- VR/AR Portable Applications
- Wearable Medical Devices
- Smart Meters
- IoT Smart Devices
- Smart Glasses

PACKAGE



APPLICATION DIAGRAM

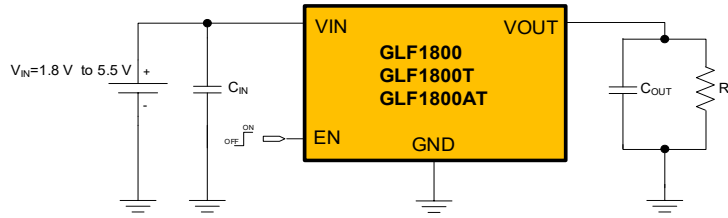


Figure 1. Application Diagram

DEVICE INFORMATION

Part Number	Top Mark	V_{drop} (Typ.) at 3.6 V_{IN} @ 1.0 A	EN Activity	Package
GLF1800-T17	GR	117 mV	High	SOT23-5L
GLF1800T-S17	g	73 mV	High	Thin WLCSP
GLF1800AT-S17	j	73 mV	High	Thin WLCSP

FUNCTIONAL BLOCK DIAGRAM

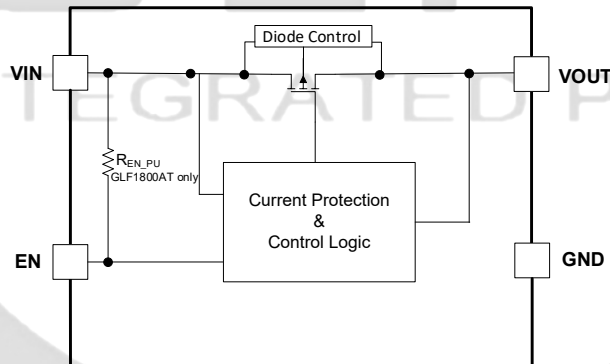
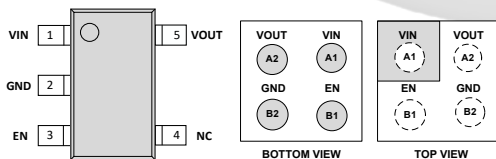


Figure 2. Functional Block Diagram

PIN CONFIGURATION



SOT23-5L

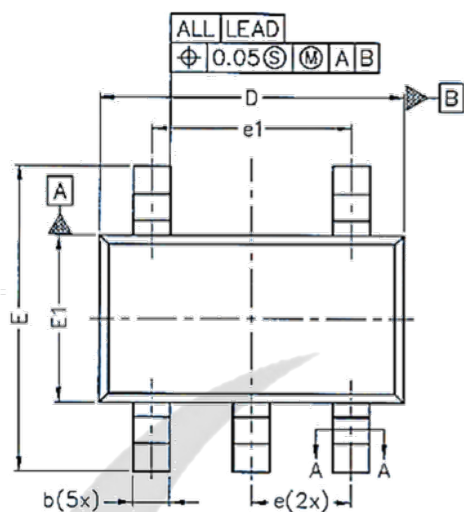
Thin WLCSP

Figure 3. Packages and Pin Definition

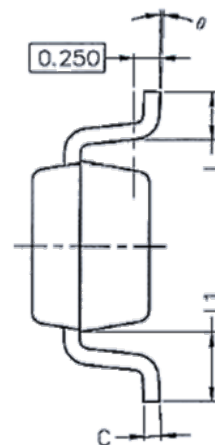
PIN DEFINITION

Pin #		Name	Description
SOT23-5L	Thin WLCSP		
1	A1	VIN	Power input, diode anode
2	B2	GND	Ground
3	B1	EN	Control pin, active high Note: The GLF1800AT EN pin has an internal pull-up resistor connected to VIN.
4	/	NC	No connection, keep this Pin floating or connect it with Ground
5	A2	VOUT	Power output, diode cathode

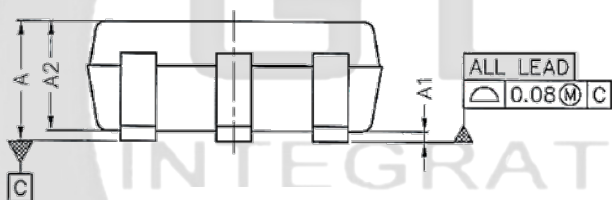
PACKAGE OUTLINE (SOT23-5L)



TOP VIEW

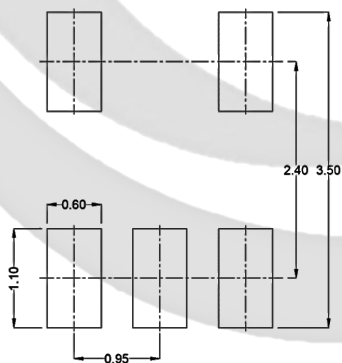


SIDE VIEW



FRONT VIEW

Recommended Footprint

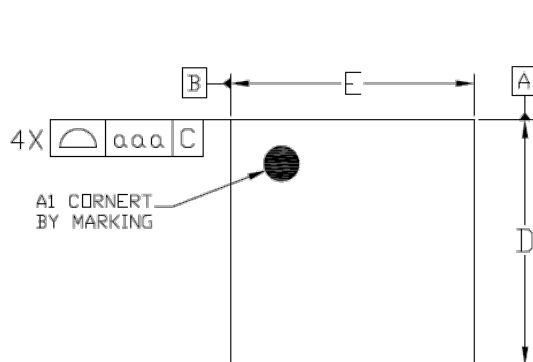


REF.	Dimensions Ref.		
	Min.	Nom.	Max.
A	-	-	1.25
A1	0.03	0.08	0.15
A2	1.05	1.10	1.15
b	0.27	-	0.35
b1	0.26	0.285	0.31
c	0.135	-	0.23
c1	0.127	0.152	0.178
D	2.82	2.92	3.02
E	2.60	2.90	3.00
E1	1.50	1.62	1.70
e	0.95 BSC		
e1	1.90 BSC		
L	0.35	0.45	0.55
L1	0.49	0.64	0.79
Θ	0°	-	8°

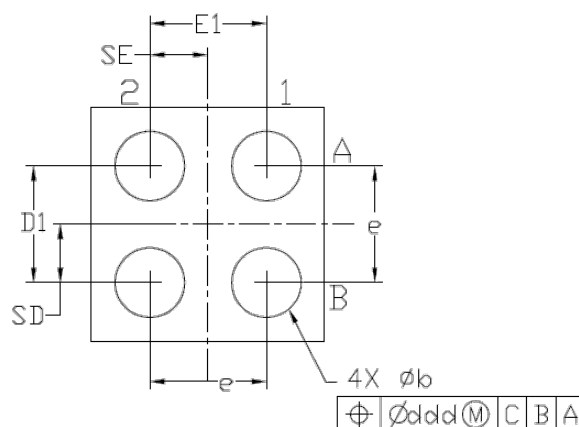
PACKAGING INFORMATION

Part Number	Package	Pins	Top Mark	Moisture Sensitivity Level	Environmental Information
GLF1800-T17	SOT23-5L	5	GR	MSL3	ROHS+HF

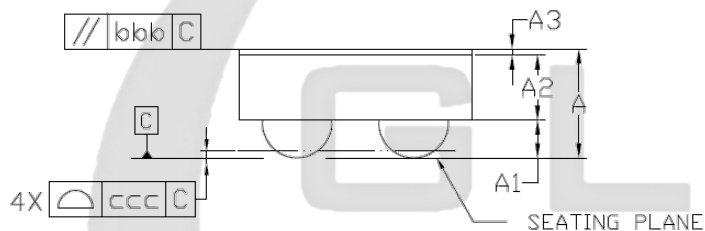
PACKAGE OUTLINE (Thin WLCSP)



TOP VIEW

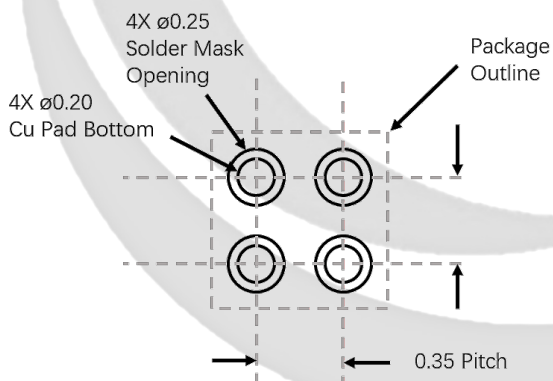


BOTTOM VIEW



SIDE VIEW

Recommended Footprint



Notes

1. ALL DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES)
2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1994.

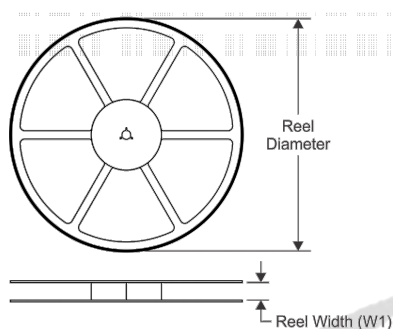
REF.	Dimensions Ref.		
	Min.	Nom.	Max.
A	0.310	0.350	0.390
A1	0.050	0.060	0.070
A2	0.240	0.265	0.290
A3	0.020	0.025	0.030
D	0.755	0.770	0.785
E	0.755	0.770	0.785
D1	0.300	0.350	0.400
E1	0.300	0.350	0.400
b	0.165	0.200	0.235
e	0.350 BSC		
SD	0.175 BSC		
SE	0.175 BSC		
Tol. of Form & Position			
aaa	0.10		
bbb	0.10		
ccc	0.05		
ddd	0.05		

PACKAGING INFORMATION

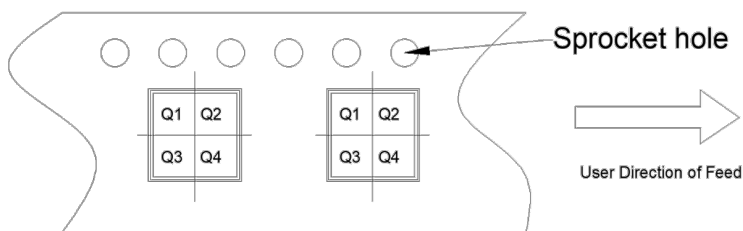
Part Number	Package	Pins	Top Mark	Moisture Sensitivity Level	Environmental Information
GLF1800T-S17	Thin WLCSP	4	g	MSL1	ROHS+HF
GLF1800AT-S17	Thin WLCSP	4	j	MSL1	ROHS+HF

TAPE AND REEL DIMENSIONS (SOT23-5L)

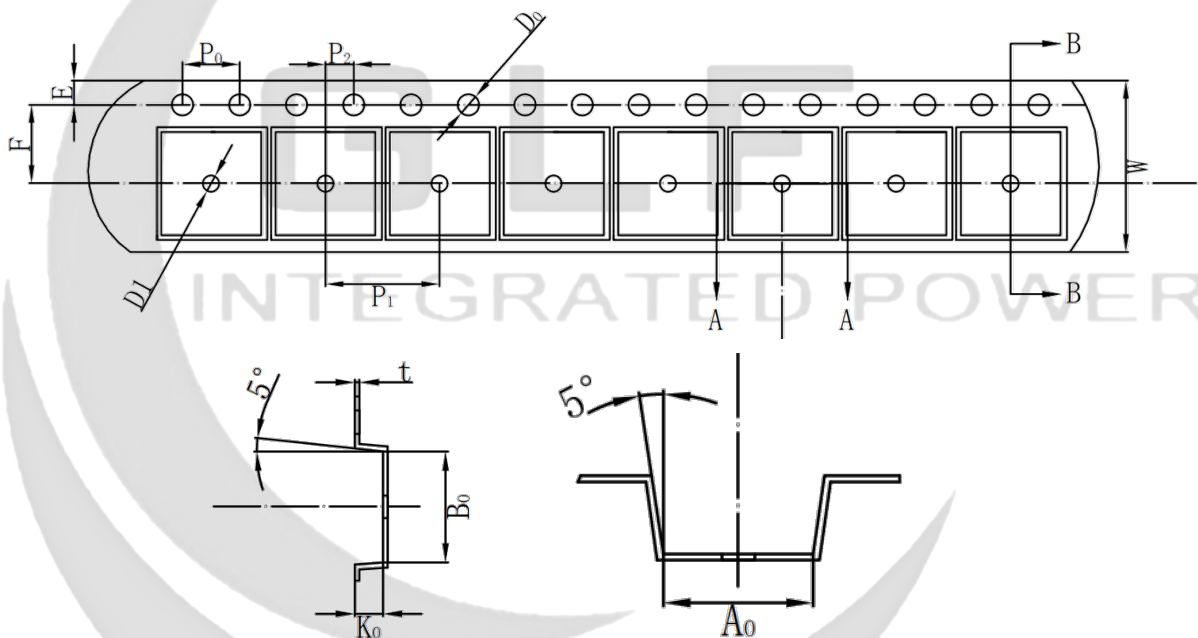
REEL DIMENSIONS



QUADRANT ASSIGNMENTS PIN 1 ORIENTATION TAPE



TAPE DIMENSIONS



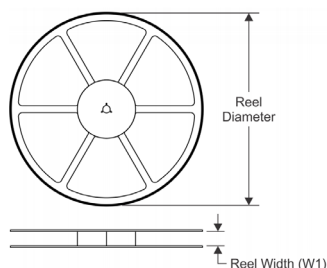
Device	Package	Pins	SPQ	Reel Diameter (mm)	Reel Width W1	A0	B0	K0	P1	W	Pin1
GLF1800-T17	SOT23-5	5	3000	178	9	3.25	3.30	1.38	4	8	Q3

Remark:

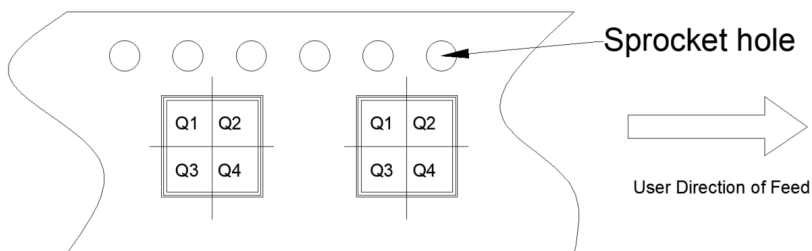
- A0: Dimension designed to accommodate the component width
- B0: Dimension designed to accommodate the component length
- K0: Dimension designed to accommodate the component thickness
- W: Overall width of the carrier tape
- P1: Pitch between successive cavity centers

TAPE AND REEL INFORMATION (WLCSP)

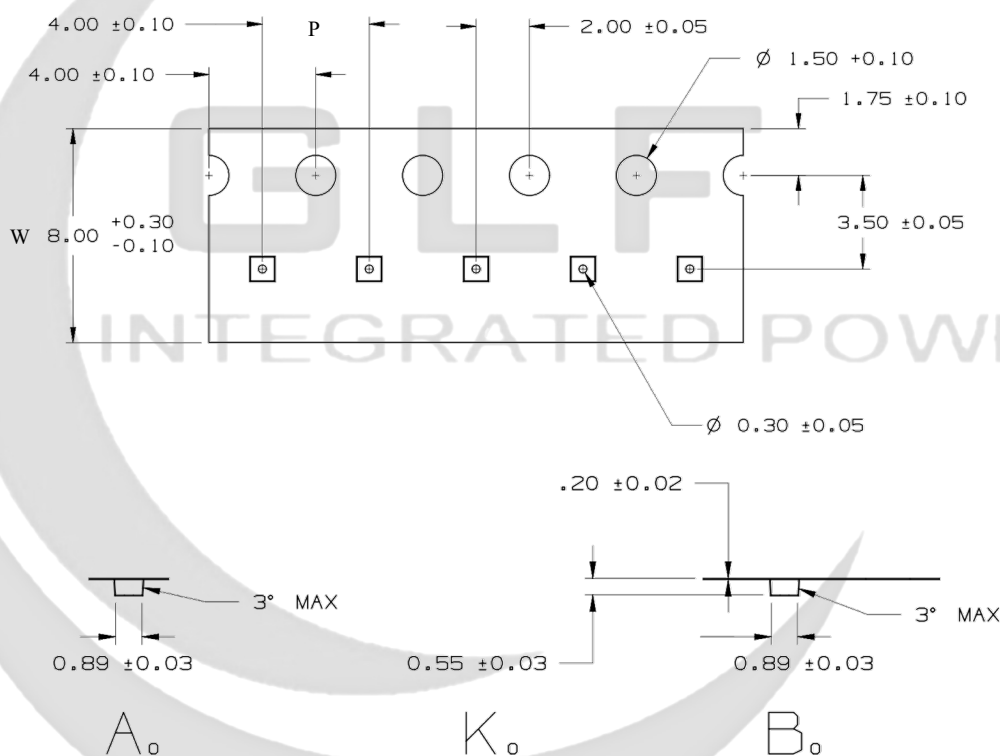
REEL DIMENSIONS



QUADRANT ASSIGNMENTS PIN 1 ORIENTATION TAPE



TAPE DIMENSIONS



Device	Package	Pins	SPQ	Reel Diameter (mm)	Reel Width W1	A0	B0	K0	P	W	Pin1
GLF1800T-S17	Thin WLCSP	4	4000	180	9	0.89	0.89	0.55	4	8	Q1
GLF1800AT-S17	Thin WLCSP	4	4000	180	9	0.89	0.89	0.55	4	8	Q1

Remark:

- A0: Dimension designed to accommodate the component width
- B0: Dimension designed to accommodate the component length
- K0: Dimension designed to accommodate the component thickness
- W: Overall width of the carrier tape
- P: Pitch between successive cavity centers