



**DESCRIPTION**

The AG27322 is a high-speed gate driver that provides up to 9A peak drive current in an industry-standard pin configuration. It is designed to efficiently drive large MOSFETs in applications requiring high Miller current during high dv/dt switching transitions.

The device eliminates the need for additional external circuitry, enabling replacement of multiple discrete components. This helps reduce PCB area, simplify design, and lower overall system cost.

The AG27322 is available in a SOP8 package.

**FEATURES**

- Non-inverting input/output configuration
- Compatible with 3.3 V and 5 V logic inputs
- Wide operating supply range: 4.5 V to 16 V
- High capacitive driving capability
- Wide operating temperature range:  
-40°C to +125°C
- Undervoltage lockout (UVLO) protection  
UVLO rising threshold: 4.0 V  
UVLO falling threshold: 3.9 V
- Fast switching performance  
Turn-on / off delay (t<sub>ON</sub> / t<sub>OFF</sub>): 25 ns / 35 ns
- High peak drive capability  
Source / sink current: 9 A / 9 A

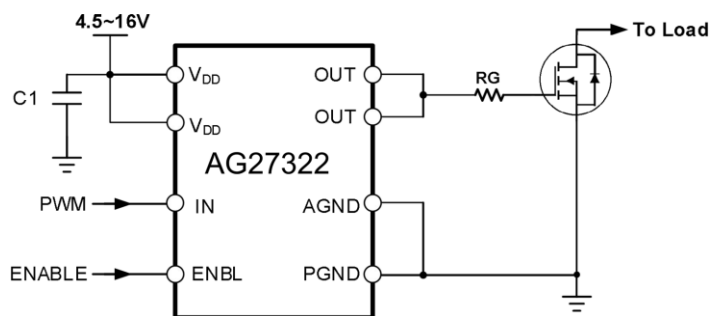
**ORDERING INFORMATION**

Package Type	Part Number	
SOP8 SPQ: 4,000pcs/Reel	M8	AG27322M8R AG27322M8VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

**APPLICATION**

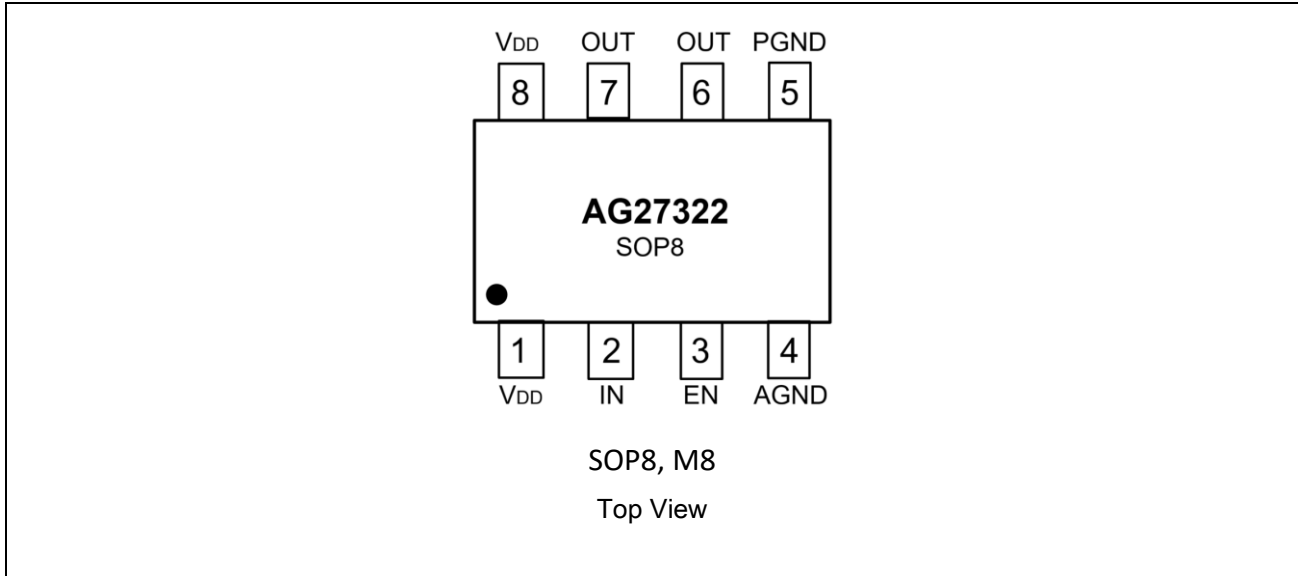
- Switch-mode power supplies (SMPS)
- DC/DC converters
- Motor controllers
- Class-D switching amplifiers
- Line drivers
- Pulse transformer drivers

**TYPICAL APPLICATION CIRCUIT**





**PIN DESCRIPTION**



Pin #	Symbol	Function
1	V <sub>DD</sub>	Supply Voltage (V <sub>DD</sub> )
2	IN	Logic Input
3	EN	Enable Input
4	AGND	Analog Ground (GND)
5	PGND	Power Ground (GND)
6	OUT	Gate Driver Output
7	OUT	Gate Driver Output
8	V <sub>DD</sub>	Supply Voltage (V <sub>DD</sub> )

**ABSOLUTE MAXIMUM RATINGS**

$V_{DD}$ , Supply Voltage		-0.3V ~ 16V
$V_{OUT}$ , Output Voltage		-0.3V ~ $V_{DD} + 0.3V$
$V_{IN}$ , Logic Input Voltage		-0.3V ~ $V_{DD} + 0.3V$
$R_{thJA}$ , Thermal Resistance Junction to Ambient	SOT-23-5	151°C/W
$T_J$ , Junction Temperature		150°C/W
$T_S$ , Storage Temperature		-55°C~150°C
$T_L$ , Lead Temperature (Soldering, 10 seconds)		300°C
ESD, Electrostatic Discharge	Human Body Model (HBM)	±2000V
	Machine Model (MM)	±1000V

Stress beyond above listed "Absolute Maximum Ratings" may lead permanent damage to the device. These are stress ratings only and operations of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

**RECOMMENDED OPERATING CONDITIONS**

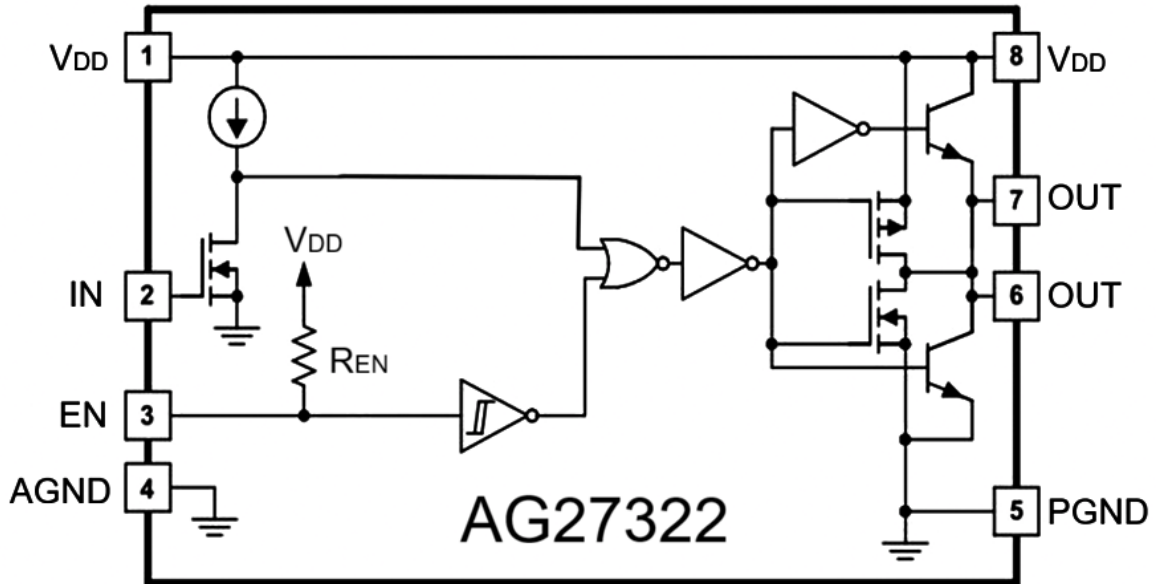
Parameter	Symbol	Min.	Max.	Units
Power Supply	$V_{DD}$	5.0	15	V
Output Voltage	$V_O$	0	$V_{DD}$	V
Logic input voltage	$V_{IN}$	0	$V_{DD}$	V
Environment Ambient Temperature	$T_A$	-40	125	°C

**ELECTRICAL CHARACTERISTICS** $V_{CC} = 15V$ ,  $T_A = 25^\circ C$ , unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
<b>Static</b>						
Logic "1"(HIN+LIN) Input Voltage	$V_{IH}$		2.7	-	-	V
Logic "0" (HIN+LIN) Input Voltage	$V_{IL}$		-	-	0.8	
EN Input Rising Threshold Voltage	$V_{EN+}$			2.5		
EN Input Falling Threshold Voltage	$V_{EN-}$			0.8		
High Level Output Voltage,	$V_{OH}$		-	-	0.35	
Low Level Output Voltage,	$V_{OL}$		-	-	0.35	
$V_{CC}$ Supply Current	$I_Q$		-	150	225	$\mu A$
Logic "1" Input $V_{CC}$ Current	$I_{IN+}$		-	10		
Logic "0" Input $V_{CC}$ Current	$I_{IN-}$		-	-	5	
Output High Short-Circuit Pulse Current	$I_{O+}$		-	9	-	A
Output Low Short-Circuit Pulse Current	$I_{O-}$		-	9	-	
$V_{CC}$ UVLO Hysteresis Voltage	$V_{CCUVHYS}$		-	0.1	-	V
$V_{CC}$ Supply UVLO Threshold	$V_{CCU+}$		-	4.0	-	
	$V_{CCU-}$		-	3.9	-	
Rise Time	$t_R$		-	20	-	ns
Fall Time	$t_F$		-	20	-	
Turn-on Propagation Delay	$t_{ON}$		-	25	40	
Turn-off Propagation Delay	$t_{OFF}$		-	35	50	
EN Turn-off Propagation Delay	$t_{EN}$			35	50	



**BLOCK DIAGRAM**





## DETAILED INFORMATION

Fig1: AG27322 INPUT, OUTPUT and EN

Timing Waveform

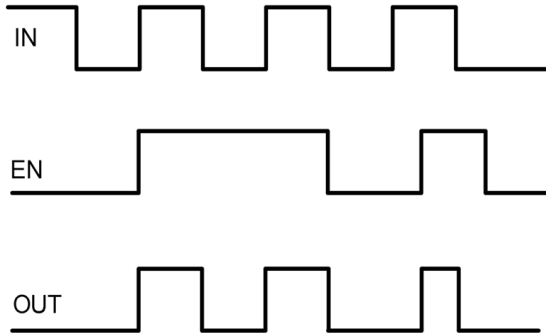


Fig2: EN Turn-off Propagation Delay waveform

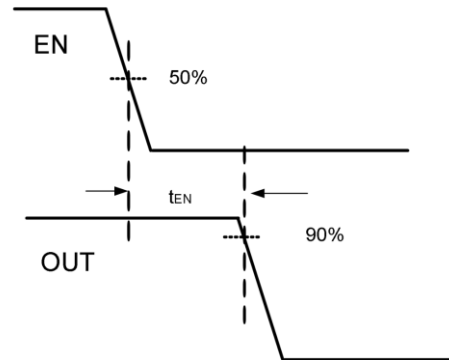
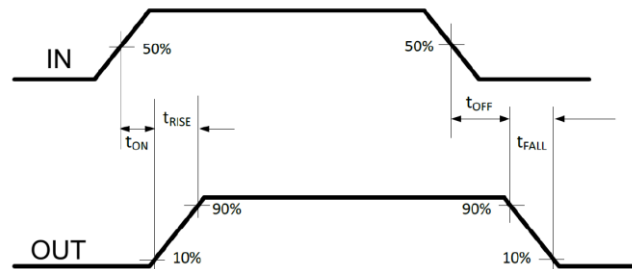


Fig3: Propagation Time Waveform Definition



## OVERVIEW

The AG27322 is designed to deliver high peak gate drive current during the Miller plateau region, where it is most critical during MOSFET switching transitions. Its architecture minimizes shoot-through current, enabling efficient and reliable operation.

The device features a unique hybrid output stage (True Drive), which combines bipolar and MOSFET transistors to achieve high current drive capability even at low supply voltages.

With this driver architecture, the AG27322 is suitable for applications requiring 6A, 9A, and even many 12A gate drivers in industry-standard pin configurations.

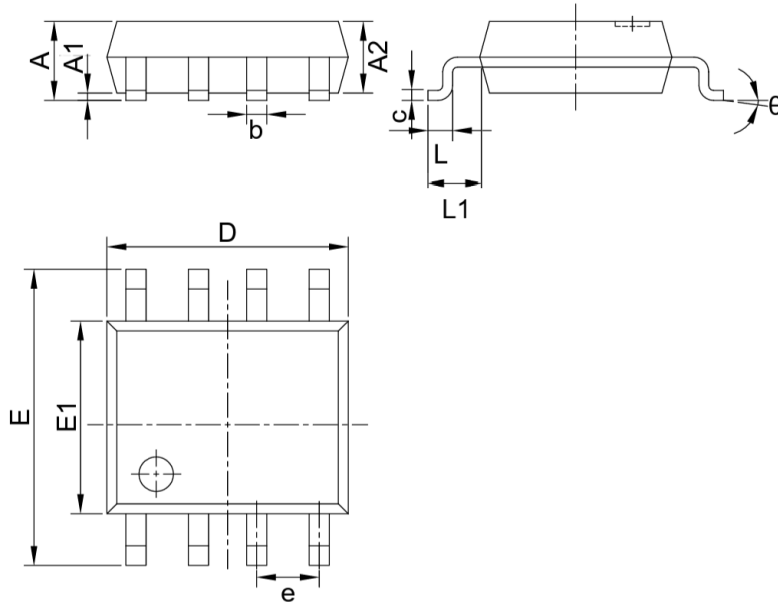
The device also integrates latch-up immunity and ESD protection circuitry to enhance robustness.

In addition, the AG27322 provides an enable (EN) function for improved control of the driver operation. The EN function is implemented on pin 3, which is typically unused in industry-standard pinouts. This pin is internally pulled up to VDD, enabling active-high logic operation, and can be left floating for default operation



**PACKAGE INFORMATION**

Dimension in SOP8 (Unit: mm)



Symbol	Min.	Max.
A	-	1.75
A1	0.10	0.225
A2	1.30	1.50
b	0.39	0.48
c	0.21	0.26
D	4.70	5.10
E	5.80	6.20
E1	3.70	4.10
e	1.27 BSC	
L	0.50	
L1	1.05BSC	
$\theta$	0°	8°



## **IMPORTANT NOTICE**

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