

Single Channel Isolated SiC MOSFET Gate Driver
FEATURES

- Military Temperature: $T_A = 125\text{ }^\circ\text{C}$, $T_j = 150\text{ }^\circ\text{C}$
- Bi-polar Voltage Rails
- Programmable UVLO with hysteresis
- $\pm 14\text{ A}$ peak, $\pm 4\text{ A}$ continuous
- 500 kHz Switching Frequency
- 4000V Galvanic Signal Isolation
- Capable of Short Excursions to $150\text{ }^\circ\text{C}$ ambient

500 kHz, $\pm 14\text{ A}$

Absolute Maximum Ratings

Symbol	Parameter	Condition	Value	Units
V_{DD}	Primary Power supply		-0.5 to 45	V
V_{DD-VSS}	Secondary Power Supply		-0.5 to 40	V
V_I	Logic Level Inputs		-0.5 to 6	V
I_o	Continuous output current	$T_A = 25\text{ }^\circ\text{C}$	± 4	A
I_o	Peak pulsed drain current	$T_A = 25\text{ }^\circ\text{C}$	± 14	A
T_j	Operating junction temperatures		-50 to 150	$^\circ\text{C}$
T_{stg}	Storage temperature		-50 to 150	$^\circ\text{C}$

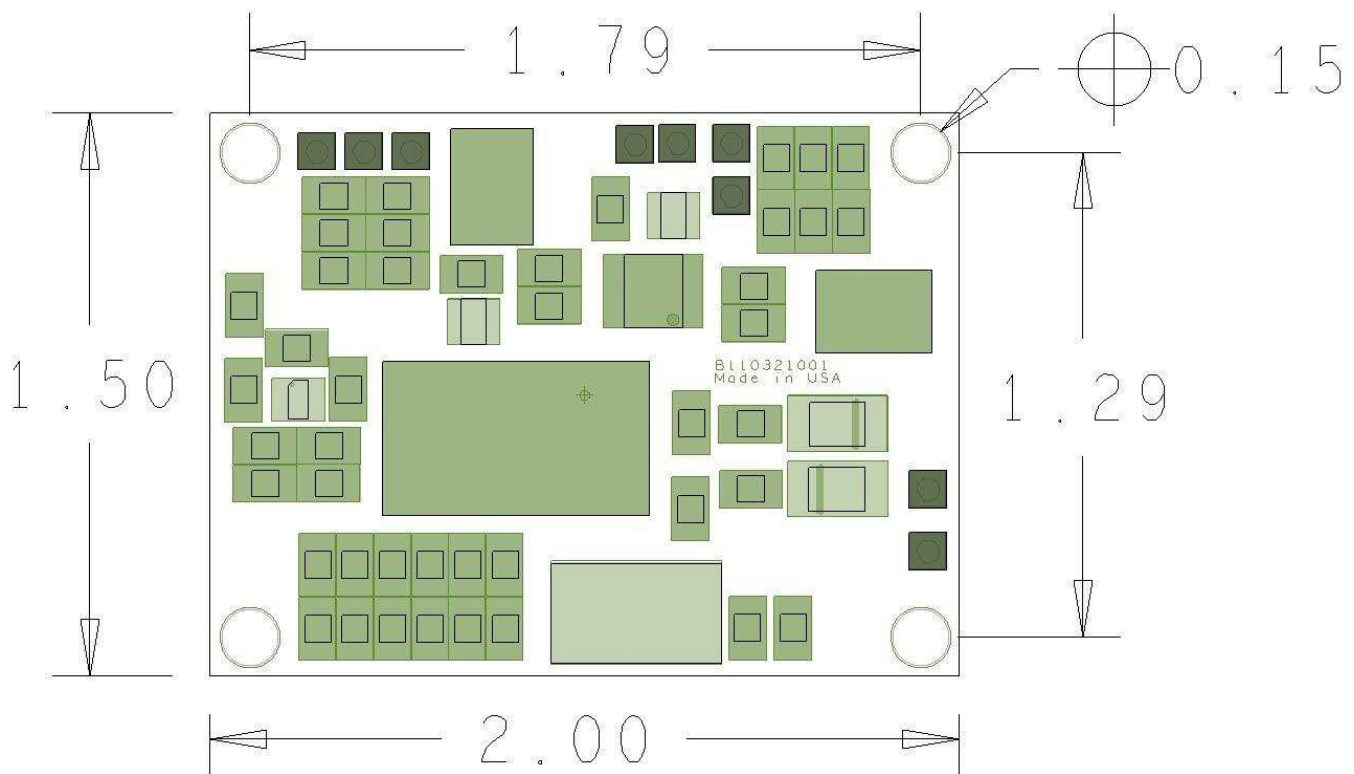
Electrical Characteristics						
Symbols	Parameter	Condition(s)	Values			Units
			Min.	Typ.	Max.	
VDD _P	Primary Power Supply		6	12	35	V
VDD _S -VSS _S	Secondary Power Supply	UVLO disabled	4.5		35	V
		UVLO enabled	15		35	
V _{UVLO}	UVLO	Inactive		15		V
		Active		12		
		Hysteresis		3		
V _{IH}	Logic Level input voltages	High-level input voltage	3.15	-	6	V
V _{IL}		Low-level input voltage	0	-	1.35	
V _{OH}	Output voltage level	High-level output voltage	V _{DD} -0.025V	+20	-	V
V _{OL}		Low-level output voltage	-	-5	V _{SS} +0.025V	V
V _{IORM}	Working Voltage Isolation			600		V
C _{ISO}	Isolation Capacitance ⁽¹⁾			5		pF
CMTI	Common Mode Transient Immunity		25	40		kV/μs
R _G	Output Resistance ⁽²⁾	High		0.4	0.8	Ω
R _G		Low		0.3	0.6	
t _{on}	Output Rise Time	CLOAD=15nF, VCC=18V T _A =25°C		25		ns
t _{off}	Output Fall Time	CLOAD=15nF, VCC=18V T _A =25°C		18		
F _{sw}	Switching Frequency	Dependent on load, thermal limitation		500		kHz
t _{PHL} , t _{PLH}	Propagation delay	High-to-low/Low-to-High		140		ns

(1) Does not include Isolation Capacitance of external auxiliary isolated power supplies

(2) Output resistance of totem pole IC Additional gate resistance is added with SMD resistors

PACKAGE DIMENSIONS

All dimensions shown are in inches

**COMPANION PARTS**

Silicon Carbide Schottky Diode, APE-HT-xxxx
Silicon Carbide Discretes, APE-HT-0100 series

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PRELIMINARY

APE MTGD1-0011

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