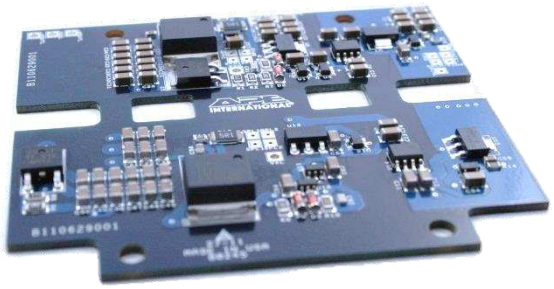
Two Channel Isolated SiC MOSFET Gate Driver

FEATURES

500 kHz, ±14A

- **Specifically designed for APE HT-2000 series modules**
- **Military Temperature: T_A = 125 °C, T_j = 150 °C**
- **Bi-polar Voltage Rails**
- **Programmable UVLO with hysteresis**
- **±14 A peak, ±4A continuous**
- **500 kHz Switching Frequency**
- **4000V Galvanic Signal Isolation**
- **Capable of Short Excursions to 150°C ambient**



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 °C	±4	A
I_o	Peak pulsed drain current	T_A = 25 °C	±14	A
T_j	Operating junction temperatures		-50 to 150	°C
T_{stg}	Storage temperature		-50 to 150	°C
V_{isol}	Insulation test voltage	AC, 1 min.	TBD	V
		AC, 1 s.	TBD	V

Electrical Characteristics

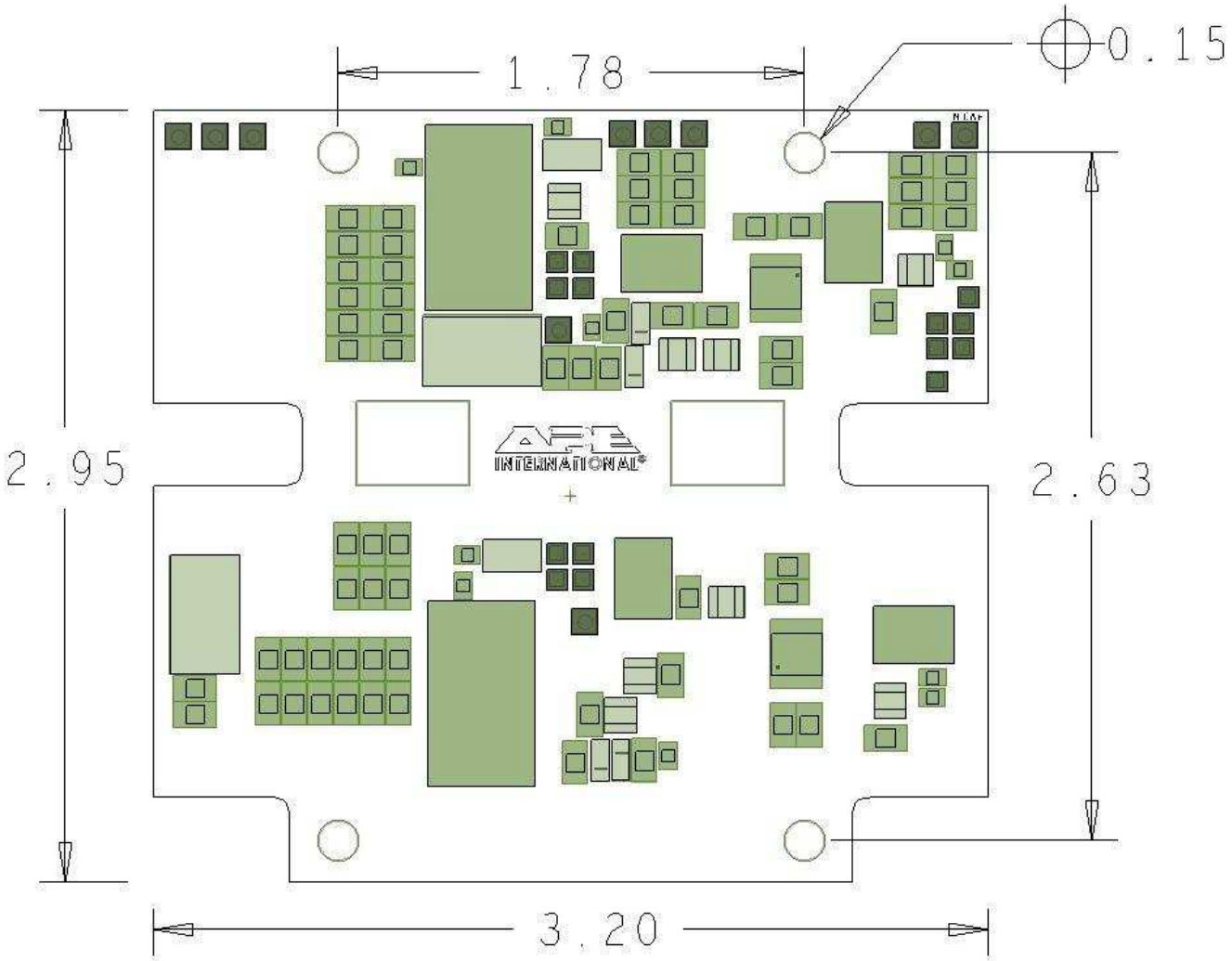
Symbols	Parameter	Condition(s)	Values			Units
			Min.	Typ.	Max.	
VDD_P	Primary Power Supply		6	12	35	V
VDD_S-VSS_S	Secondary Power Supply	UVLO disabled	4.5		35	V
		UVLO enabled	15		35	
V_{UVLO}	UVLO	Inactive		15		V
		Active		12		
		Hysteresis		3		
V_{IH}	Logic Level input voltages	High-level input voltage	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	-	-	V
V_{OL}		Low-level output voltage	-	-	Vss+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/us
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 Power Module, APE-HT-2000 series

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APEI, Inc.
535 W. Research Center Blvd.
Fayetteville, AR 72701
Phone: 479.443.5759 / Fax: 866.515.6604
www.apei.net