

**TECHNICAL DATA**

Datasheet 5030, Preliminary



**Dual MOSFET BRIDGE, With Gate Driver**

**DESCRIPTION: A 100 VOLT, 7.5 AMP, DUAL MOSFET BRIDGE**

A high density Dual H-Bridge capable of driving 7.5A peak at 100V. This small footprint dual bridge contains low  $R_{DSon}$  power FETs , FET drivers and precision current sense resistors. The device does not need heat sinking and is housed in an encapsulated sealed enclosure. The drive input signals are TTL compatible.

**ELECTRICAL CHARACTERISTICS PER MOSFET DEVICE**

( $T_j=25^{\circ}C$  UNLESS OTHERWISE SPECIFIED)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
<b>MOSFET SPECIFICATIONS (Per Device)</b>					
Drain-to-Source Breakdown Voltage	$BV_{DSS}$	100	-	-	V
Continuos Drain Current	$I_D$	-	-	7.5	A
				4.8	
Pulsed Drain Current, Pulse Width limited to 1 msec	$I_{DM}$	-	-	50	A
Zero Gate Voltage Drain Current	$I_{CSS}$	-	-	1	$\mu A$
$V_{DS} = 80V, V_{GS} = 0V, T_j = 25^{\circ}C$				250	$\mu A$
$V_{DS} = 80V, V_{GS} = 0V, T_j = 125^{\circ}C$					
Static Drain-to-Source On Resistance,	$R_{DSon}$	-	0.019	0.023	$\Omega$
$T_j = 25^{\circ}C$			0.035	.043	
$T_j = 150^{\circ}C$					
$I_D = 7.5A, V_{GS} = 10V,$					
Maximum Thermal Resistance	$R_{\theta JC}$	-	-	35	$^{\circ}C/W$
Maximum operating Junction Temperature	$T_{jmax}$	-40	-	150	$^{\circ}C$
Maximum Storage Junction Temperature	$T_{jmax}$	-55	-	150	$^{\circ}C$
Rise Time	tr		30		ns
Fall Time	tf		30		ns

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Datasheet 5030, Preliminary

<b>DIODES CHARACTERISTICS (Per Device)</b>					
Continuous Source Current, $T_C = 90^\circ\text{C}$	$I_S$	-	-	7.5	A
Diode Forward Voltage, $I_S = 4\text{A}, T_J = 25^\circ\text{C}$	$V_{SD}$	-		1.0	V
Diode Reverse Recovery Time ( $I_S = 7.5\text{A}, di/dt = 100\text{ A}/\mu\text{s}$ )	$t_{rr}$	-	-	55	nsec
Reverse Recovery Charge ( $I_{sd} = 7.5\text{A}, dI_{sd}/dt = 100\text{A}/\mu\text{s}$ )	$Q_{rr}$			90	nC
<b>Gate Driver</b>					
Supply Voltage	VCC	10	12	15	V
Supply Input Current (Without PWM Switching)			2		mA
Input Drive, On Current				10	$\mu\text{A}$
Input Drive, Off Current	$I_{th}$	1		-	$\mu\text{A}$
Boost Capacitor Value	Cboost		.33		$\mu\text{F}$
Boost Charging Resistor	Rboost		10		Ohm

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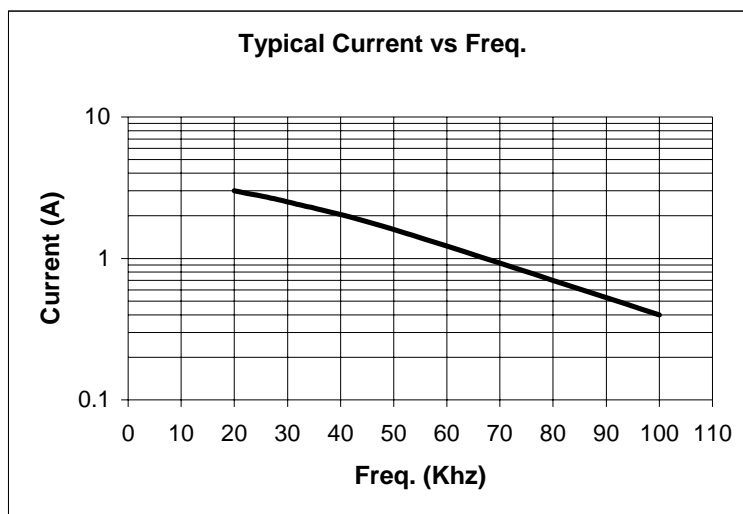
Datasheet 5030, Preliminary

Under Voltage Lockout	VCCUV+ VCCUV-	8 7.4	8.9 8.2	9.8 9.0	V
Input-to-Output Turn On Delay	$t_{ond}$		680	820	nsec
Output Turn On Rise Time	$t_r$	-	100	170	
Input-to-Output Turn Off Delay	$t_{offd}$	-	150	220	
Output Turn Off Fall Time	$t_f$	-	50	90	
@ VCC=50V, ID=4A, T <sub>C</sub> = 25					
Dead Time		400	520	650	nsec

**DC Bus Current Sensor**

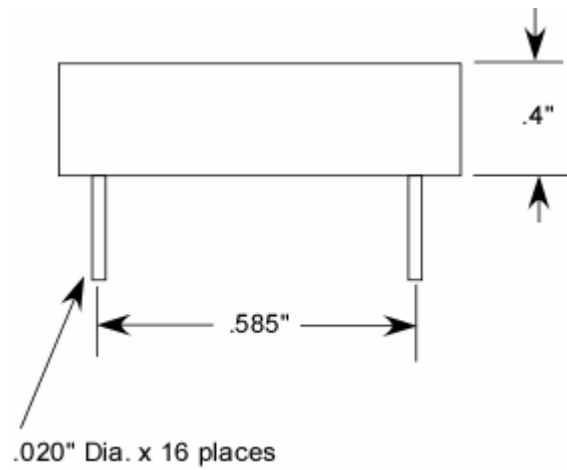
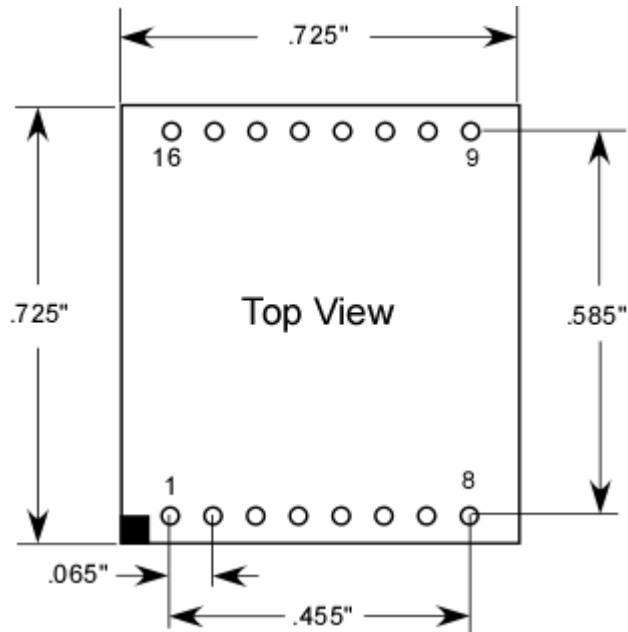
Shunt Resistor Value	-	-	.0165	-	Ohm
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Average Switching Current vs. Frequency for each bridge, with both bridges switching, at T<sub>c</sub>=100C, V<sub>in</sub>=50Vdc.



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Datasheet 5030, Preliminary



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Datasheet 5030, Preliminary

**PIN OUT**

Pin #	Name	Description
1 (16)	+DC_BUS	Positive Power Supply Bus
2 (15)	DRV_A	Logic Level Drive for Side A
3 (14)	OUT_B	Output of Bridge, Side B
4 (13)	+15_VCC	Bias Supply Voltage for Internal Drivers
5 (12)	ISEN	Current Sense Resistor Output
6 (11)	DRV_B	Logic level Drive for Side B
7 (10)	OUT_A	Output of Bridge, Side A
8 (9)	GND	Drive and Power Ground Return

**() Pin numbers in parenthesis are for the second H-Bridge**

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