

TECHNICAL DATA

Datasheet 5024, Preliminary



Dual MOSFET BRIDGE, With Gate Driver

DESCRIPTION: A 60 VOLT, 12 AMP, DUAL MOSFET BRIDGE

A high density Dual H-Bridge capable of driving 12A peak at 60V. 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
MOSFET SPECIFICATIONS (Per Device)					
Drain-to-Source Breakdown Voltage	BV_{DSS}	60	-	-	V
Continuos Drain Current $T_C = 25^{\circ}C$ $T_C = 100^{\circ}C$	I_D	-	-	12 8.7	A
Pulsed Drain Current, Pulse Width limited to 1 msec	I_{DM}	-	-	97	A
Zero Gate Voltage Drain Current $V_{DS} = 60V, V_{GS}=0V T_j=25^{\circ}C$ $V_{DS}= 60 V, V_{GS}=0V T_j=125^{\circ}C$	I_{CSS}	-	-	20 250	μA μA
Static Drain-to-Source On Resistance, $I_D= 7.5A, V_{GS} = 10V,$ $T_j = 25^{\circ}C$ $T_j = 150^{\circ}C$	R_{DSon}	-	7.4 14.8	9.4 18.8	$m\Omega$
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	t_r		20		ns
Fall Time	t_f		20		ns

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DIODES CHARACTERISTICS (Per Device)					
Continuous Source Current	I_S	-	-	2.3	A
Diode Forward Voltage, $I_S = 7.2A, T_j = 25^\circ C$	V_{SD}	-		1.3	V
Diode Reverse Recovery Time ($I_S=7.5A, di/dt=100 A/\mu s$)	t_{rr}	-	33	50	nsec
Reverse Recovery Charge ($I_{sd}=7.5A, dI_{sd}/dt=100A/\mu s$)	Q_{rr}		38	57	nC
Gate Driver					
Supply Voltage	VCC	10	12	15	V
Supply Input Current (Without PWM Switching)			2		mA
Input Drive, On Current				10	uA
Input Drive, Off Current	I_{th}	1		-	uA
Boost Capacitor Value	Cboost		.33		uF
Boost Charging Resistor	Rboost		10		Ohm

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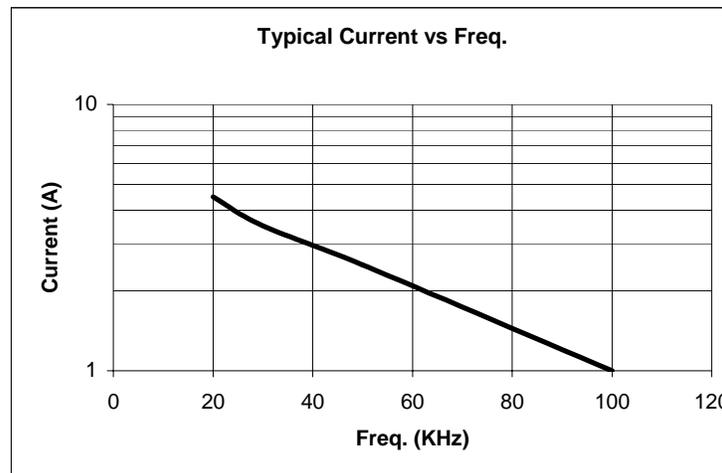
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Under Voltage Lockout	VCCUV+ VCCUV-	8 7.4	8.9 8.2	9.8 9.0	V
Input-to-Output Turn On Delay	t_{ond}		680	820	nsec
Output Turn On Rise Time	t_r	-	100	170	
Input-to-Output Turn Off Delay	t_{offd}	-	150	220	
Output Turn Off Fall Time	t_f		50	90	
Dead Time		400	520	650	nsec

DC Bus Current Sensor

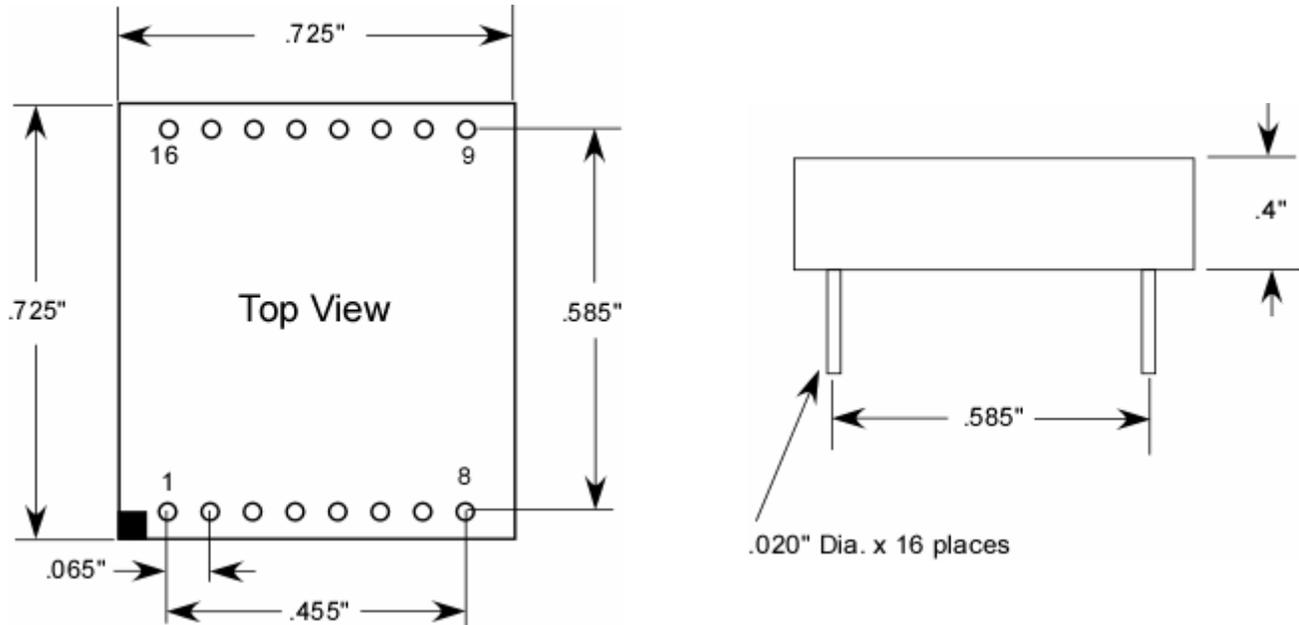
Shunt Resistor Value	-	-	.01	-	Ohm
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Average Switching Current vs. Frequency for each bridge, with both bridges switching, at $T_c=100C$, $V_{in}=50V_{dc}$.



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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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