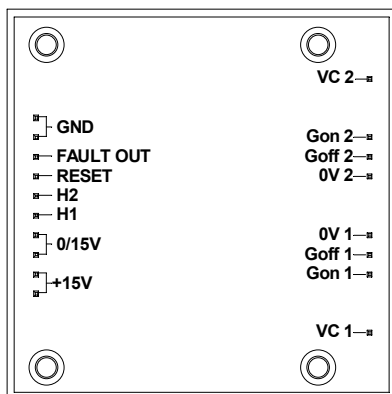
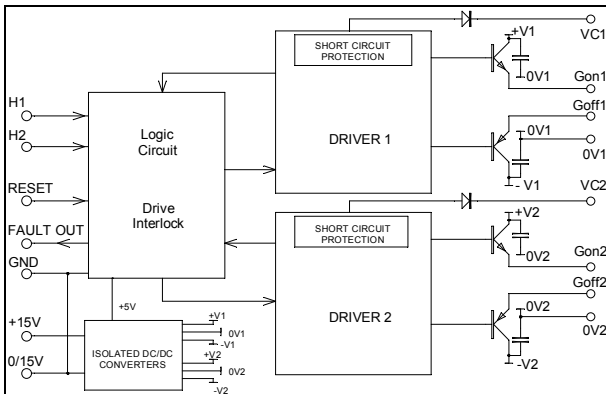


## Dual IGBT Isolated Driver (Non Inverting)

$$V_{Cmax} = 1200V$$

$$I_{OUTpeak} = 8A @ T_c = 25^{\circ}C$$



### Application

- Driver dedicated to IGBT Power modules in :
  - Motor Control
  - Uninterruptible Power Supplies
  - Switched Mode Power Supplies
  - Welding converters
  - Automotive

### Features

- Drive IGBTs up to  $I_C=300A$ ,  $V_{CE}=1200V$
- Short circuit protection by  $V_{CEsat}$  monitoring
- Low speed overcurrent cut off to limit over voltage
- Under voltage Lockout with hysteresis
- Top Bottom input signals Interlock
- Switching frequency up to 50 kHz
- Low stray inductance
- High level of integration
- Isolated driver

### Benefits

- Outstanding performance at high frequency operation
- Rugged
- Stable temperature behavior
- Very high noise immunity (common mode rejection  $> 10kV/\mu s$ )
- 2500V Galvanic Isolation primary/secondary
- 5V logic level with Schmitt-trigger Input
- Single  $V_{DD}=15V$  supply required
- Positive & Negative Secondary auxiliary power supplies internally generated
- Separate sink & Source output for easy Gate drive (optimized turn on & turn off operation)
- Mounting with screws for good vibration withstand
- Solderable pins
- RoHS Compliant

**CAUTION:** These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed.

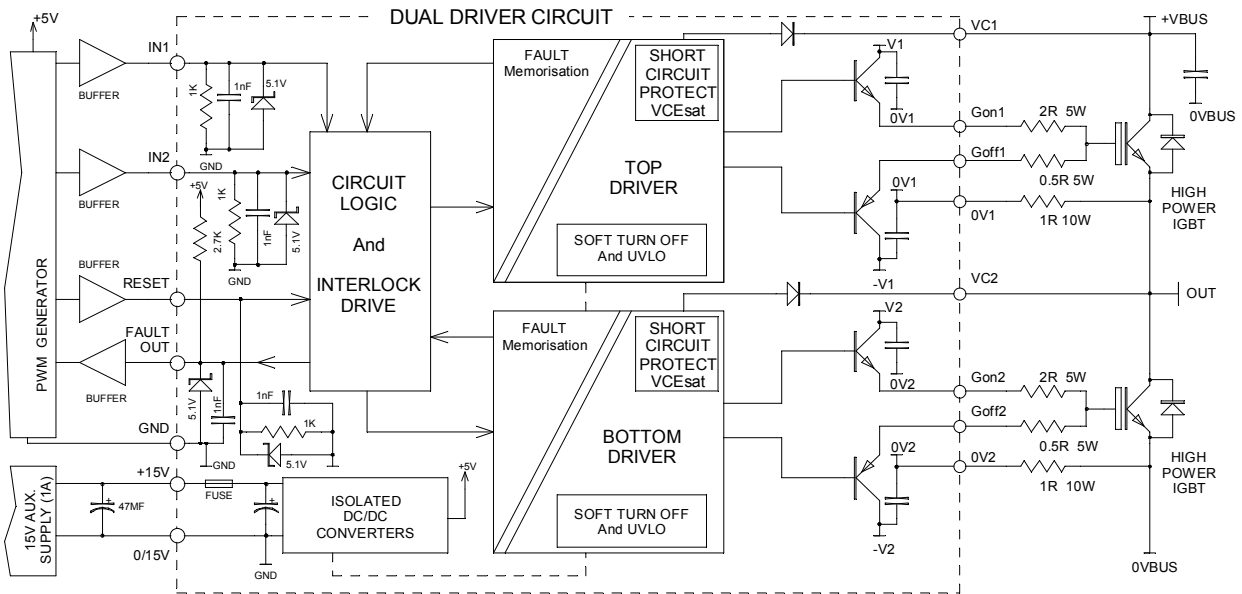


fig 1:Typical phase leg Operation Block Diagram

All ratings @  $T_j = 25^\circ\text{C}$  unless otherwise specified

### Absolute maximum ratings

Symbol	Parameter	Max ratings	Unit
$V_{DD}$	Supply Voltage	16	V
$V_{Hi}$	Input signal voltage $i=1, 2$	5.5	V
$I_{VDDmax}$	Maximum Supply current	$V_{Hi} = 0V, i = 1, 2$	0.3
		$V_{DD} = 15V, F_{out} = 25 \text{ kHz}, C_{eff} = 150nF$	1
$f_{max}$	Maximum Switching Frequency @ $T_{amb} = 85^\circ\text{C}$	50	kHz
$V_C$	Collector Voltage short circuit protection pin	1200	V
$I_{outAVmax}$	Output Average Current	Per Output	270
$R_{Gonmin}$	Minimum resistance for $R_{Gon}$	2	$\Omega$
$R_{Goffmin}$	Minimum resistance for $R_{Goff}$	1	$\Omega$
$P_{out}$	Output Power DC/DC converter	Per Output	4
$I_{out peak}$	Sink and Source	8	A

**Driver Electrical Characteristics**

<i>Symbol</i>	<i>Characteristic</i>	<i>Test Conditions</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>	
V <sub>DD</sub>	Operating Supply Voltage		14.5	15	15.5	V	
I <sub>VDD</sub>	Operating Supply Current	F <sub>out</sub> =25kHz, V <sub>DD</sub> =15V, V <sub>Bus</sub> =600V C <sub>eff</sub> =150nF on Channel 1&2		0.75		A	
V <sub>UVLO</sub>	Under Voltage lockout threshold		11.6	12.3	13.5	V	
V <sub>Hi(max)</sub>	Maximum Input Voltage	i = 1, 2	-0.5	5	5.5	V	
V <sub>Hi(th+)</sub>	Positive Going Threshold Voltage		2				
V <sub>Hi(th-)</sub>	Negative Going Threshold Voltage				0.8		
C <sub>Hi</sub>	Input Capacitance *			1			nF
R <sub>Hi</sub>	Input Resistance *			1			kΩ
V <sub>G(on)</sub>	Turn on Gate Voltage Output	No Load R <sub>Gon</sub> =2Ω, F <sub>out</sub> = 25kHz, C <sub>eff</sub> =150nF	14	15	16	V	
V <sub>G(off)</sub>	Turn off Gate Voltage Output	No Load R <sub>Goff</sub> =1Ω, F <sub>out</sub> = 25kHz, C <sub>eff</sub> =150nF	-7	-6	-5		
T <sub>d(on)</sub>	Turn On delay time	C <sub>eff</sub> = 150nF ①	200	400	500	ns	
T <sub>d(off)</sub>	Turn Off delay time	C <sub>eff</sub> = 150nF ①	220	420	520		
PWD	Pulse Width Distortion		-0.3	0.02	0.3	μs	
PDD	Propagation Delay Difference between any two driver	T <sub>d(on)</sub> - T <sub>d(off)</sub>	-0.35		0.35		
I <sub>fault</sub>	Output fault current	Fault condition			7	mA	
V <sub>faultH</sub>	High Output Fault Voltage	No fault		5			
V <sub>faultL</sub>	Low Output Fault Voltage	Fault condition			0.5	V	
T <sub>dfault</sub>	Desat Fault Output Delay Time	V <sub>DD</sub> =15V			5		
T <sub>SC</sub>	Total Short Circuit Duration				6	μs	
I <sub>SC</sub>	Short Circuit Current	T <sub>sc</sub> =6μs, V <sub>Bus</sub> =600V, V <sub>GE</sub> =15V		950		A	
C <sub>PS</sub>	Coupling Capacitance Primary Secondary			20		pF	
R <sub>PW</sub>	Reset Pulse Width	Logic high for reset	20			μs	
R <sub>R</sub>	Reset Input Resistance			1		kΩ	
F <sub>R</sub>	Fault output pull-up resistance			2.7			

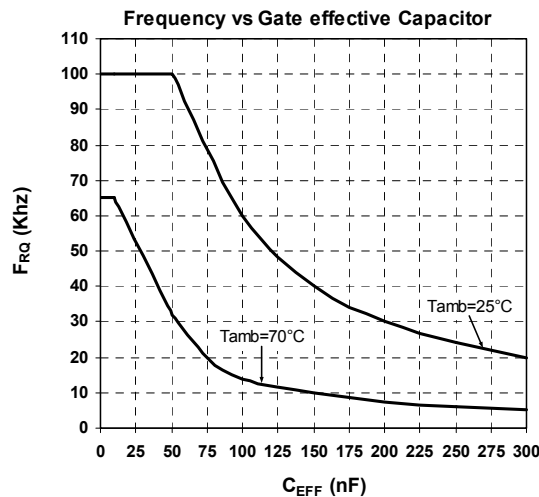
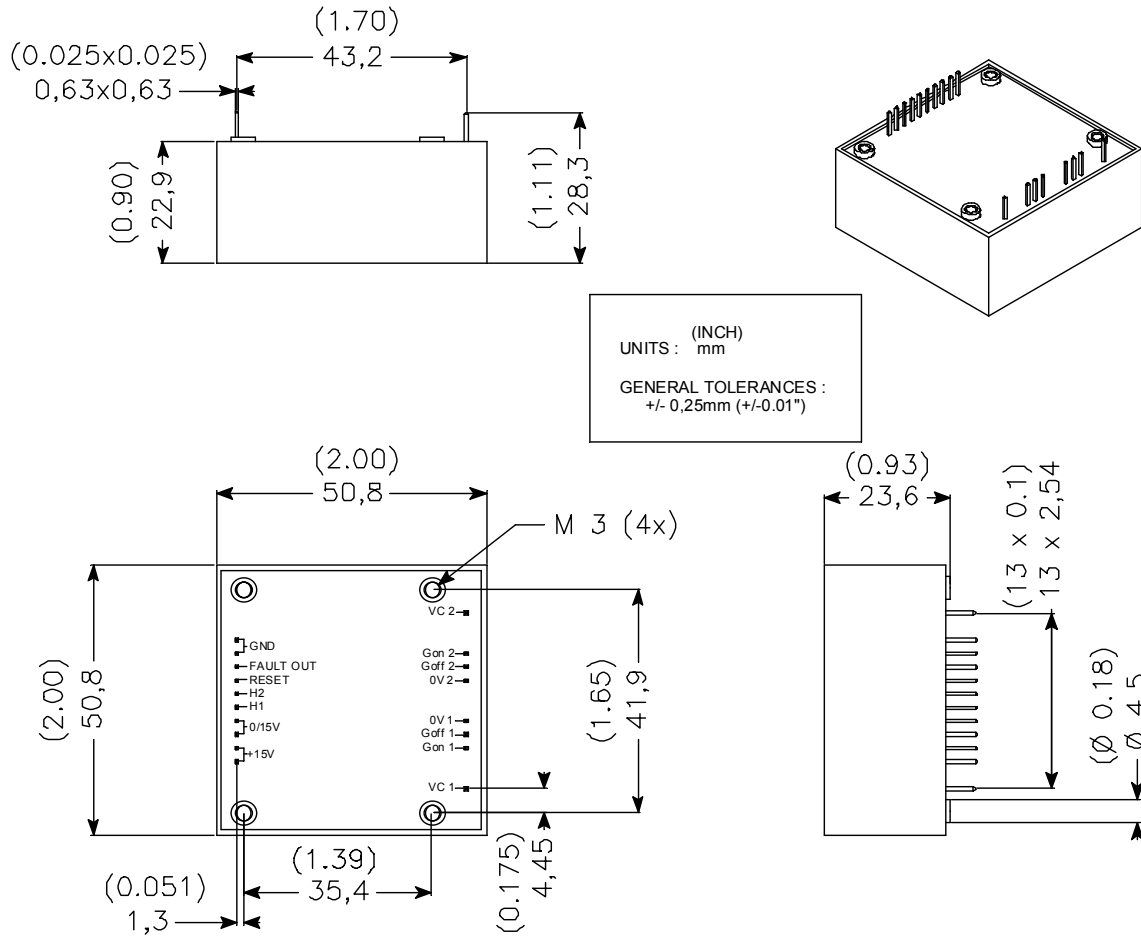
\* Low impedance guarantees good noise immunity.

① Dead time between top and bottom inputs signals must be generated externally in case of phase leg operation

**Thermal and package characteristics**

<i>Symbol</i>	<i>Characteristic</i>		<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>
V <sub>ISOL</sub>	Primary to Secondary Isolation		2500			V
T <sub>OP</sub>	Operating Ambient Temperature		-40		85	°C
T <sub>STG</sub>	Storage Temperature Range		-55		100	
Torque	Mounting torque	M3		0.5		N.m
Wt	Package Weight				120	g

## Driver Package outline



Microsemi reserves the right to change, without notice, the specifications and information contained herein

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