

**TECHNICAL DATA**  
**DATA SHEET 781, REV. -**

**Standard Three-Phase MOSFET/IGBT Bridge Driver**

**Absolute Maximum Rating**

Absolute Maximum Rating indicate sustained limits beyond which damage to the device may occur. All voltage parameters are absolute voltages referenced to COM. The thermal resistance is specified under board mounted and still air conditions.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
High Side Floating Supply Voltage	$V_{B1,2,3}$	-0.3	-	325	V
High Side Floating Supply Voltage	$V_{S1,2,3}$	$V_{B1,2,3} - 25$	-	$V_{B1,2,3} + 0.3$	V
Supply Voltage	$V_{CC}$	-0.3	-	25	V
Logic Ground	$V_{SS}$	- 0.3	-	$V_{CC} + 0.3$	V
Logic Input Voltage ( $\overline{HIN}$ , $\overline{LIN}$ , ITRIP FLT-CLR, SD)	$V_{IN}$	$V_{SS} - 0.3$	-	$V_{CC} + 0.3$	V
Op-Amp Input Voltage	$V_{IN-Amp}$	$V_{SS} - 0.3$	-	$V_{CC} + 0.3$	V
FAULT Output Voltage	$V_{FLT}$	$V_{SS} - 0.3$	-	$V_{CC} + 0.3$	V
Thermal Resistance	$R_{thJA}$		-	80	$^{\circ}C/W$
Junction Temperature	$T_j$	-55	-	150	$^{\circ}C$
Lead Soldering Temperature, 10 sec	$T_L$	-	-	250	$^{\circ}C$

**Recommended Operating Conditions**

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
High Side Floating Supply Voltage	$V_{B1,2,3}$	$V_{S1,2,3} + 10$	-	$V_{S1,2,3} + 20$	V
High Side Floating Supply Voltage	$V_{S1,2,3}$	-5	-	300	V
Supply Voltage	$V_{CC}$	10	-	20	V
Logic Ground	$V_{SS}$	- 5	-	5	V
Logic Input Voltage ( $\overline{HIN}$ , $\overline{LIN}$ , ITRIP FLT-CLR, SD)	$V_{IN}$	$V_{SS}$	-	$V_{SS} + 5$	V
Op-Amp Input Voltage	$V_{IN-Amp}$	$V_{SS}$	-	$V_{SS} + 5$	V
FAULT Output Voltage	$V_{FLT}$	$V_{SS}$	-	$V_{CC}$	V

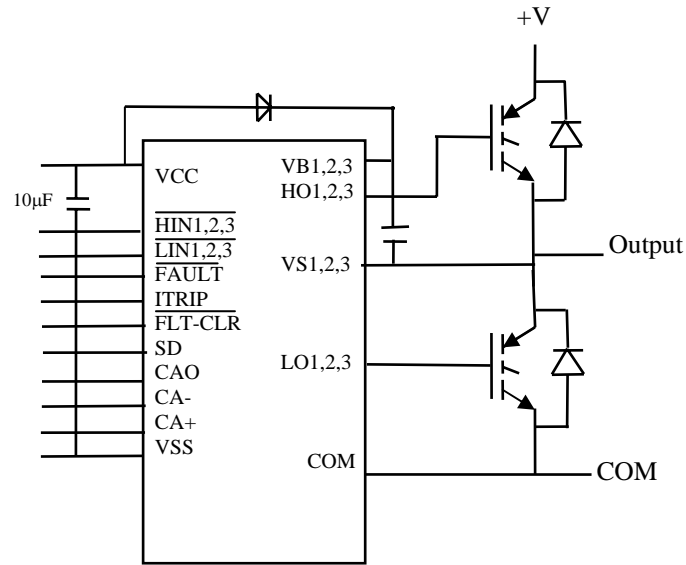
**Dynamic Characteristics** $V_{CC}=V_{BS1,2,3} = 15V, V_{S1,2,3} = V_{SS}, C_L = 1 \text{ nF}$ 

PARAMETER	TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Turn-On Propagation Delay	$V_{IN} = 0 \text{ \& } 5V$ $V_{S1,2,3} = 0 \text{ to } 300V$	$t_{on}$	-	700	-	nsec
Turn-Off Propagation Delay		$t_{off}$	-	700	-	nsec
Turn-On Rise Time		$t_r$	-	75	-	nsec
Turn-Off Fall Time		$t_f$	-	35	-	nsec
SD to Output Shutdown Propagation Delay	$V_{IN}, V_{ITRIP} = 0V,$ $V_{SD} = 0 \text{ \& } 5V$	$t_{sd}$	-	700	-	nsec
ITRIP to Output Shutdown Propagation Delay	$V_{IN} = 0V,$ $V_{ITRIP} = 0 \text{ \& } 5V$	$t_{itrip}$	-	700	-	nsec
ITRIP Blanking Time	$V_{ITRIP} = 1V$	$t_{bl}$	-	400	-	nsec
ITRIP to $\overline{\text{FAULT}}$ Shutdown Propagation Delay	$V_{IN} = 0V,$ $V_{ITRIP} = 0 \text{ \& } 5V$	$t_{flt}$	-	500	-	nsec
Input Filter Time ( $\overline{\text{HIN}}, \overline{\text{LIN}}, \text{ \& } SD$ )	$V_{IN} = 0 \text{ \& } 5V$	$t_{fil}$		310		nsec
Deadtime, LS Turn-Off to HS Turn-on & HS Turn-Off to LS Turn-On	$V_{IN} = 0 \text{ \& } 5V$	DT	-	200	-	nsec

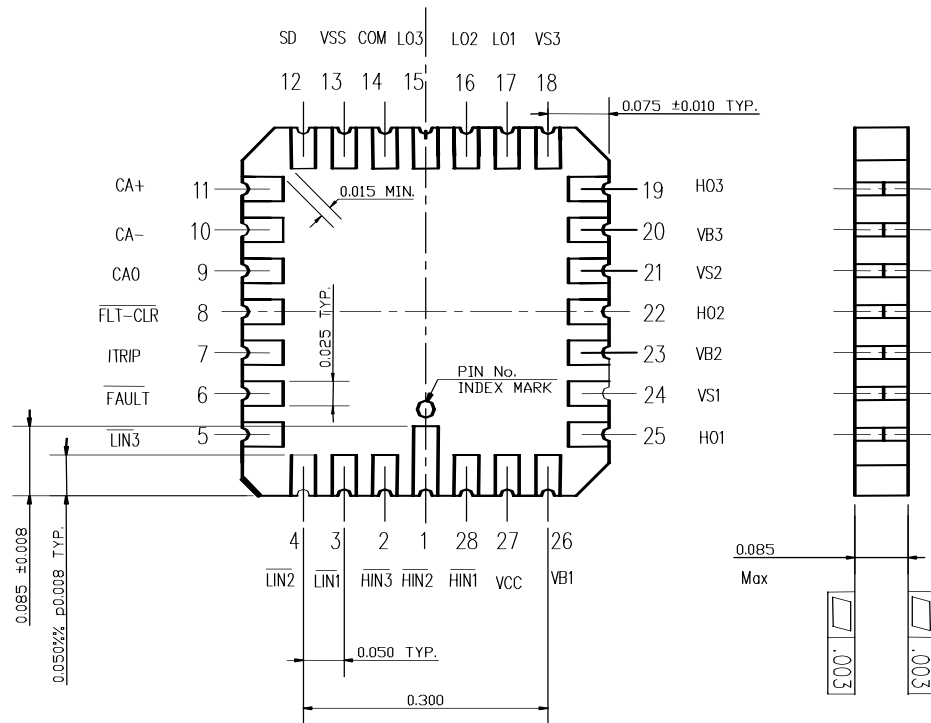
**Static Characteristics** $V_{CC}=V_{BS1,2,3} = 15V, V_{S1,2,3} = V_{SS}$ 

PARAMETER	TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Logic "0" Input Voltage (Output = LO)		$V_{IH}$	2.2	-	-	V
Logic "1" Input Voltage (Output = HI)		$V_{IL}$	-	-	0.8	V
Logic "0" Fault Clear Input Voltage		$V_{FCLR,IH}$	2.2	-	-	V
Logic "1" Fault Clear Input Voltage		$V_{FCLR,IL}$	-	-	0.8	V
SD Input Positive Going Threshold		$V_{SD,TH+}$	-	1.8	-	V
SD Input Negative Going Threshold		$V_{SD,TH-}$	-	1.5	-	V
ITRIP Input Positive Going Threshold		$V_{IT,TH+}$	-	0.485	-	V
ITRIP Input Negative Going Threshold		$V_{IT,TH-}$	-	0.400	-	V
Quiescent $V_{CC}$ Supply Current	$V_{IN} = 0V, \text{ or } 5V$	$I_{QCC}$	-	4	-	mA
Supply Under Voltage Positive Going Threshold		$V_{CCIUV+}$ $V_{BSIUUV+}$	-	10.4	-	V
Supply Under Voltage Negative Going Threshold		$V_{CCIUV-}$ $V_{BSIUUV-}$	-	9.4	-	V
Output High Short Circuit Pulsed Current	$V_{OUT} = 0V,$ $V_{IN} = 0V,$ $t_p < 10\mu\text{sec}$	$I_{O+}$	200	250	-	mA
Output Low Short Circuit Pulsed Current	$V_{OUT} = 0V,$ $V_{IN} = 0V,$ $t_p < 10\mu\text{sec}$	$I_{O-}$	420	500	-	mA

**SCHEMATIC DIAGRAM**



**PACKAGE LAYOUT**



**TECHNICAL DATA**

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