

IGD1205W

Hybrid Integrated Isolated N-Channel IGBT Driver



Key Features:

- Internal DC/DC Converter
- Internal OptoCoupler
- 30 kV/ μ S CMR
- Viso = 3,750V
- TTL Compatible Input
- Short Circuit Protected
- Fault Signal Output
- Switching Freq. to 20 kHz
- Compact SIP Package

Recommended For:

- 600V Series IGBT (up to 600A)
- 1200V Series IGBT (up to 400A)
- 1700V Series IGBT (up to 200A)



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Electrical Specifications

Absolute Maximum Ratings, $T_A = 25^\circ\text{C}$, $V_D = 12\text{V}$ or 15V , $R_G = 5\Omega$, unless otherwise noted.

Parameter	Conditions	Min.	Typ.	Max.	Units
Supply Voltage	V_D IGD1205W-12			13	VDC
	V_D IGD1205W-15			16	
Input Voltage	V_{IN} See Note 3			50	VDC
Input Current	I_{IN} See Note 4			25	mA
Output Voltage	V_O When Output is "H"			V_{CC}	VDC
Output Current	I_{GON} Pulse Width $2\mu\text{s}$, Frequency $\leq 20\text{ kHz}$			+5.0	A
	I_{GOFF}			-5.0	
Isolation Voltage	V_{ISO} Sine Wave Voltage 50 Hz/ 60 Hz , 1 Min			3,750	VAC
Operating Temperature	T_{OP}	-40		+70	$^\circ\text{C}$
Storage Temperature	T_{ST}	-50		+125	$^\circ\text{C}$
Fault Output Current	I_{FO} See Note 5			20	mA

Electrical Characteristics, $T_A = 25^\circ\text{C}$, $V_{CC} = 15\text{ VDC}$, $V_{EE} = -10\text{ VDC}$ unless otherwise noted.

Parameter	Conditions	Min.	Typ.	Max.	Units
Supply Voltage	V_D IGD1205W-12 Recommended Range	11.6	12	12.4	VDC
	V_D IGD1205W-15 Recommended Range	14.5	15	15.5	
Switching Frequency	f Recommended Range	0		20	kHz
Gate Resistor	R_G	2			Ω
Gate Supply Voltage	V_{CC}	14.5		18.0	VDC
	V_{EE}	-7.0		-10.0	
Input CMR		15	30		kV/ μ S
"H" Input Current	I_{IH} Recommended Range	10	16	20	mA
"H" Output Voltage	V_{OH}	13.5	15.3	17.0	VDC
"L" Output Voltage	V_{OL}	-6		-10	VDC
"L-H" Propagation	T_{PLH} $I_{IH} = 16\text{ mA}$		0.5	1.0	μs
"L-H" Rise Time	T_R $I_{IH} = 16\text{ mA}$		0.3	1.0	μs
"H-L" Propagation	T_{PHL} $I_{IH} = 16\text{ mA}$		1.0	1.3	μs
"H-L" Fall Time	T_F $I_{IH} = 16\text{ mA}$		0.3	1.0	μs
Protection Threshold Voltage	V_{OCP}		9.5		
Protection Reset Time	T_{TIMER} Between Start & Cancel	1.0	1.4	2.0	mS
Fault Output Current	I_{FO} See Note 6		5.0		mA
Controlled Time Detect	T_{TRIP1} Short Circuit 1, See Note 7		1.6		μs
Soft Turn-Off Time	T_{CF} See Note 8		4.5		μs
SC Detect Voltage	V_{SC} Collector Voltage of Module	15			VDC

Notes:

1. Exceeding Absolute Maximum Ratings may damage the module. These are not continuous operating ratings.
2. "H" = high level signal. "L" = low level signal.
3. The voltage applied to pin 3.
4. The current measured between pins 3 and 4.
5. The current at pin 15.
6. The current at pin 15. R_f (on connection diagram) = 4.7 k Ω .
7. Pin 13 $\geq 15\text{ VDC}$. Pin 16 open.
8. Pin 13 $\geq 15\text{ VDC}$. Pin 14 open.

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