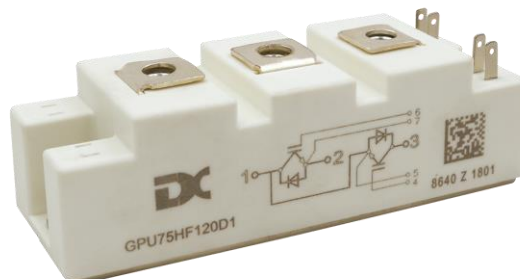


IGBT Module

1200V/75A 2 in one-package

Features

- 1200V75A, $V_{CE(sat)(typ.)}=3.2V@75A$
- Ultrafast switching speed
- Excellent short circuit ruggedness
- 34mm half bridge module



General Description

Daxin's IGBTs offer ultrafast switching speed for application such as welding, inductive-heating, UPS and other high frequency applications.

Absolute Maxinmun Ratings

Symbol	Parameter	Value	Units
V_{CES}	Collector-Emitter Voltage	1200	V
V_{GES}	Gate-Emitter Voltage	± 30	V
I_C	Continuous Collector Current ($T_C=25^{\circ}C$)	150	A
	Continuous Collector Current ($T_C=100^{\circ}C$)	75	A
I_{CM}	Pulsed Collector Current (Note 1)	150	A
I_F	Diode Continuous Forward Current ($T_C=100^{\circ}C$)	75	A
I_{FM}	Diode Maximum Forward Current (Note 1)	300	A
t_{sc}	Short Circuit Withstand Time	10	μs
$t_{sc (Max)}$	Maximum Short Circuit Withstand Time	>40	μs
I_{sc}	Short Circuit Current	730	A
P_D	Maximum Power Dissipation ($T_C=25^{\circ}C$)	357	W
	Maximum Power Dissipation ($T_C=100^{\circ}C$)	142	W
T_J	Operating Junction Temperature Range	-55 to +150	$^{\circ}C$
T_{STG}	Storage Temperature Range	-55 to +150	$^{\circ}C$

Thermal Characteristics

Symbol	Parameter	Max.	Units
$R_{th j-c}$	Thermal Resistance, Junction to case for IGBT	0.35	$^{\circ}C/W$
$R_{th j-c}$	Thermal Resistance, Junction to case for Diode	0.80	$^{\circ}C/W$
Weight	Weight of Module	150	g

Electrical Characteristics of IGBT (T_C=25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV _{CES}	Collector-Emitter Breakdown Voltage	V _{GE} =0V, I _C =250μA	1200	-	-	V
I _{CES}	Collector-Emitter Leakage Current	V _{CE} =1200V, V _{GE} =0V	-	-	250	μA
I _{GES}	Gate Leakage Current, Forward	V _{GE} =30V, V _{CE} =0V	-	-	100	nA
	Gate Leakage Current, Reverse	V _{GE} =-30V, V _{CE} =0V	-	-	-100	nA
V _{GE(th)}	Gate Threshold Voltage	V _{GE} =V _{CE} , I _C =250μA	4.5	-	5.7	V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	V _{GE} =15V, I _C =75A	-	3.2	3.6	V
Qg	Total Gate Charge	V _{CC} =960V, V _{GE} =15V I _C =75A		680		nC
t _{d(on)}	Turn-on Delay Time	V _{CC} =600V V _{GE} =±15V I _C =75A R _G =10Ω Inductive Load T _C =25°C	-	22	-	ns
t _r	Turn-on Rise Time		-	45	-	ns
t _{d(off)}	Turn-off Delay Time		-	295	-	ns
t _f	Turn-off Fall Time		-	98	-	ns
E _{on}	Turn-on Switching Loss		-	5.25	-	mJ
E _{off}	Turn-off Switching Loss		-	1.35	-	mJ
E _{ts}	Total Switching Loss		-	6.60	-	mJ
C _{ies}	Input Capacitance	V _{CE} =25V	-	5900	-	pF
C _{oes}	Output Capacitance	V _{GE} =0V	-	920	-	pF
C _{res}	Reverse Transfer Capacitance	f=1MHz	-	530	-	pF
R _{Gint}	Integrated gate resistor	f=1M; V _{pp} =1V		2.5		Ω

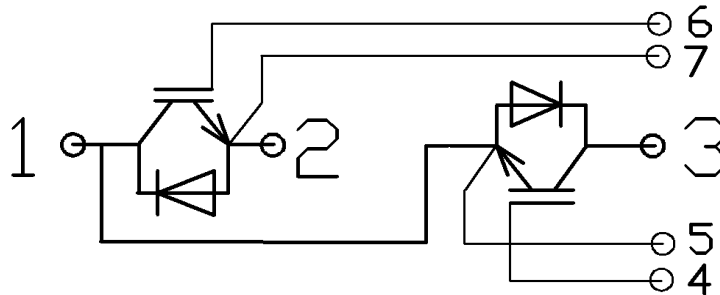
Electrical Characteristics of Diode (T_C=25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V _F	Diode Forward Voltage	I _F =75A	-	2.2		V
t _{rr}	Diode Reverse Recovery Time	V _{CE} =600V	-	135		ns
I _{rr}	Diode peak Reverse Recovery Current	I _F =75A	-	66		A
Q _{rr}	Diode Reverse Recovery Charge	dI _F /dt = 500A/μs	-	3600		nC

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature

Internal Circuit:



Package Dimension

Dimensions in Millimeters

