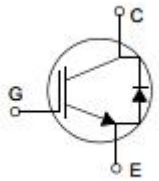
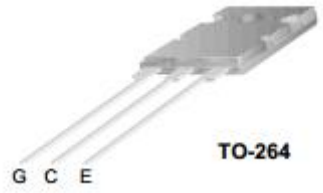
IGBT



Features

- 1200V,75A ,$V_{CE(sat)(typ.)}$=2.2V@V_{GE}=15V
- Lower losses
- Higher system efficiency
- Excellent short-circuit capability
- Square RBSOA



General Description

DAXIN's IGBTs offer lower losses and higher energy
for application such as motor drive , inverter and other soft switching 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 ℃)	150	A
	Continuous Collector Current (T_C=100℃)	75	A
I_{CM}	Pulsed Collector Current (Note 1)	300	A
I_F	Diode Continuous Forward Current (T_C=100 ℃)	75	A
I_{FM}	Diode Maximum Forward Current (Note 1)	300	A
t_{sc}	Short Circuit Withstand Time	10	us
Isc	Short Circuit Current	360	A
P_D	Maximum Power Dissipation (T_C=25 ℃)	833	W
	Maximum Power Dissipation (T_C=100℃)	333	W
T_J	Operating Junction Temperature Range	-55 to +150	℃
T_{STG}	Storage Temperature Range	-55 to +150	℃

Thermal Characteristics

Symbol	Parameter	Max.	Units
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to case for IGBT	0.15	℃/ W
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to case for Diode	0.74	℃/ W
$R_{th\ j\text{-}a}$	Thermal Resistance, Junction to Ambient	40	℃/ W

Electrical Characteristics (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV_{CES}	Collector-Emitter Breakdown Voltage	V_{GE}= 0V, I_C= 250uA	1200	-	-	V
I_{CES}	Collector-Emitter Leakage Current	V_{CE}= 1200V, V_{GE}= 0V	-	-	250	uA
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= 250uA	4.5	-	5.7	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	V_{GE}=15V, I_C= 75A	-	2.2	2.5	V
Qg	Total Gate Charge	V_{CC}=960V V_{GE}=15V I_C=75A	-	490		nC
Qge	Gate-Emitter Charge		-	36		nC
Qgc	Gate-Collector Charge		-	300		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 ℃	-	52	-	ns
t_r	Turn-on Rise Time		-	154	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	538	-	ns
t_f	Turn-off Fall Time		-	82	-	ns
Eon	Turn-on Switching Loss		-	10.0	-	mJ
Eoff	Turn-off Switching Loss		-	6.2	-	mJ
Ets	Total Switching Loss		-	16.20	-	mJ
C_{ies}	Input Capacitance	V_{CE}=25V V_{GE}=0V f = 1MHz	-	3600	-	pF
C_{oes}	Output Capacitance		-	480	-	pF
C_{res}	Reverse Transfer Capacitance		-	313	-	pF
R_{Gint}	Integrated gate resistor	f=1M;Vpp=1V		3.75		Ω

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_F	Diode Forward Voltage	I_F=75A	-	1.9	2.2	V
t_{rr}	Diode Reverse Recovery Time	V_{CE} = 600V I_F= 75A dI_F/dt = 500A/us	-	239		ns
I_{rr}	Diode peak Reverse Recovery Current		-	27	-	A
Q_{rr}	Diode Reverse Recovery Charge		-	2399	-	nC

Notes:

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