



Table 1 – Absolute Maximum Rated Values

	Parameter		Units
IGBT			
V_{CES}	Collector-to-Emitter Voltage	1700	V
V_{GES}	Gate-to-Emitter Voltage	±20	V
$I_C, T_C=25\text{ °C}$	Collector Current	210	A
$I_{CM}, T_C=25\text{ °C}$	Pulsed Collector Current	420	
$I_C, T_C=80\text{ °C}$	Collector Current	150	
$I_{CM}, T_C=80\text{ °C}$	Pulsed Collector Current	300	
$P_D, T_C=25\text{ °C}$	Maximum Dissipation	1000	W
Inverse diode			
$I_F, T_C=25\text{ °C}$	Forward Current	155	A
$I_{FM}, T_C=25\text{ °C}$	Pulsed Forward Current	310	
$I_F, T_C=80\text{ °C}$	Forward Current	110	
$I_{FM}, T_C=80\text{ °C}$	Pulsed Emitter Current	220	
Free-Wheeling diode			
$I_F, T_C=25\text{ °C}$	Forward Current	155	A
$I_{FM}, T_C=25\text{ °C}$	Pulsed Forward Current	310	
$I_F, T_C=80\text{ °C}$	Forward Current	110	
$I_{FM}, T_C=80\text{ °C}$	Pulsed Emitter Current	220	
T_j	Operating Temperature	–55 to +150	°C
T_{stg}	Storage Temperature	–55 to +125	
	Mounting Torque, M6	3.0 to 5.0	N * m
	Weight	450	g
V_{is}	Insulation Test Voltage (t=1 min.)	4000	Vrms

Table 2 – Thermal Resistance

Symbol	Parameter	Min	Max	Units	Test Conditions
R_{thJC}	Thermal Resistance, Junction-to-Case	–	0.12	°C/W	Per IGBT
R_{thJCD}	Thermal Resistance, Junction-to-Case	–	0.25		Per FWD



Table 3 – Electrical Characteristics @ $T_j=25\text{ °C}$ (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
IGBT						
$V_{CE(sat)}$	Collector-to-Emitter Saturation Voltage	–	2.8	3.5	V	$V_{GE}=15\text{ V}, I_C=150\text{ A}^{(3)}$
		–	3.2	4.0		$V_{GE}=15\text{ V}, I_C=150\text{ A}^{(3)}, T_j=125\text{ °C}$
$V_{GE(th)}$	Gate Threshold Voltage	4.0	4.9	7.0	V	$V_{GE}=V_{GES}, I_C=5.0\text{ mA}$
I_{CES}	Zero Gate Voltage Collector Current	–	0.05	1.0	mA	$V_{CE}=1700\text{ V}, V_{GE}=0\text{ V}$
		–	1.0	10		$V_{CE}=1700\text{ V}, V_{GE}=0\text{ V}, T_j=125\text{ °C}$
$I_{GES(F)}$	Gate-to-Source Leakage Forward	–	10	100	nA	$V_{GE}=20\text{ V}$
		–	20	150		$V_{GE}=20\text{ V}, T_j=125\text{ °C}$
$I_{GES(R)}$	Gate-to-Source Leakage Reverse	–100	–10	–		$V_{GE}=-20\text{ V}$
		–150	–20	–		$V_{GE}=-20\text{ V}, T_j=125\text{ °C}$
C_{ies}	Input Capacitance	–	tbd	–	nF	$V_{GE}=0\text{ V}, V_{CE}=25\text{ V}, f=1\text{ MHz}$
C_{oes}	Output Capacitance	–	tbd	–		
C_{res}	Reverse Transfer Capacitance	–	tbd	–		
$t_{d(on)}$	Turn-On Delay Time	–	tbd	–	ns	$V_{CC}=850\text{V}, I_C=150\text{A}, V_{GE}=\pm 15\text{V}, R_G=10\Omega, T_j=125\text{°C},$ Inductive Load
t_r	Rise Time	–	tbd	–		
$t_{d(off)}$	Turn-Off Delay Time	–	tbd	–		
t_f	Fall Time	–	tbd	–		
E_{on}	Turn-On Energy	–	tbd	–	mJ	$V_{CC}=850\text{V}, I_C=150\text{A}, V_{GE}=\pm 15\text{V}, R_G=10\Omega, T_j=125\text{°C},$ Inductive Load
E_{off}	Turn-Off Energy	–	tbd	–		
E_{tot}	Total Energy	–	tbd	–		
I_{sc}	Short circuit collector current	–	600	–	A	$t_p \leq 10\mu\text{sec}, V_{GE} \leq 15\text{V}, R_G=10\Omega, T_j=125\text{°C}, V_{CC}=1000\text{V}, V_{CEmax}=V_{CES}-L_{sCE} \cdot di/dt$

**Inverse and Free-Wheeling Diode**

V_F	Forward Voltage	–	2.2	3.0	V	$I_F=150A, V_{GE}=0V$
I_{rrm}	Maximum Reverse Recovery Current	–	85	–	A	$I_F=150A,$ $di_F/dt=0.5A/ns,$ $V_{GE}=0V,$ $T_j=25^\circ C$
t_{rr}	Diode Reverse Recovery Time	–	230	300	ns	
Q_{rr}	Diode Reverse Recovery Charge	–	14	–	μC	

Precious metal content into 1000 pieces:

Gold _____ g;

Silver _____g.



Table 4 – Revision history

Date	Revision	Changes
30-Sep-2016	1	Complete version. Preliminary.