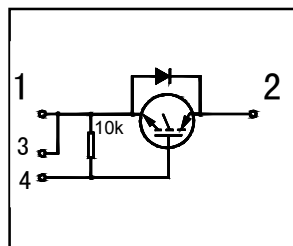


“ SINGLE SWITCH” IGBT DOUBLE INT-A -PAK

Features

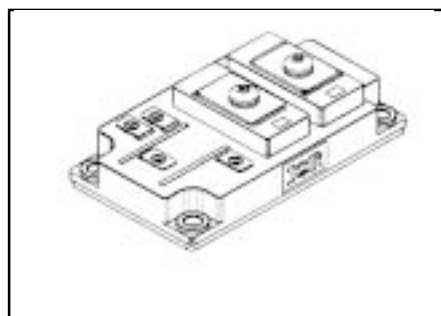
- Highly rugged SPT+ IGBT technology
- Low saturation voltage
- Very low conduction and switching losses
- Vce(sat) with positive temperature coefficient
- antiparallel diodes with ultra-soft recovery
- Industry standard package
- High short circuit capability



$V_{CES}=1200V$
 $V_{CE(on) \text{ typ.}}=1.9V$
 @ $V_{GE}=15V, I_c=600A$

Benefits

- Increased operating efficiency
- Direct mounting to heatsink
- Performance optimized for power conversion: UPS, SMPS, Motor Control
- Lower EMI, requires less snubbing



Absolute Maximum Ratings

	Parameter	Max.	Units
V_{CES}	Collector- to- Emitter Voltage	1200	V
$I_c @ T_c=25^\circ$	Continuous Collector Current	700	A
$I_c @ T_c=85^\circ$	Continuous Collector Current	460	
I_{CM}	Pulsed collector Current	1200	
I_{LM}	Peak switching Current	1200	
I_{FM}	Peak Diode Forward Current	900	
V_{GE}	Gate- to- Emitter Voltage	± 20	V
V_{ISOL}	RMS Isolation Voltage, Any Terminal To Case, $t=1 \text{ min}$	2500	
$P_D @ T_c=25^\circ C$	Maximum Power Dissipation	3125	W
$P_D @ T_c=85^\circ C$	Maximum Power Dissipation	1460	
T_J	Operating Junction Temperature Range	-40 to +150	$^\circ C$
T_{STG}	Storage Temperature Range	-40 to +125	

Thermal / Mechanical Characteristics

	Parameter	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction-to- Case- IGBT	-	0.04	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance, Junction-to- Case- Diode	-	0.09	
$R_{\theta CS}$	Thermal Resistance, Case-to- Sink- Module	0.035	-	
	Mouting Torque, Case-to-Heatsink	-	4.0	N.m
	Mouting Torque, Case-to-Terminal 1,2 & 3	-	3.0	
	Weight of Module	400	-	g

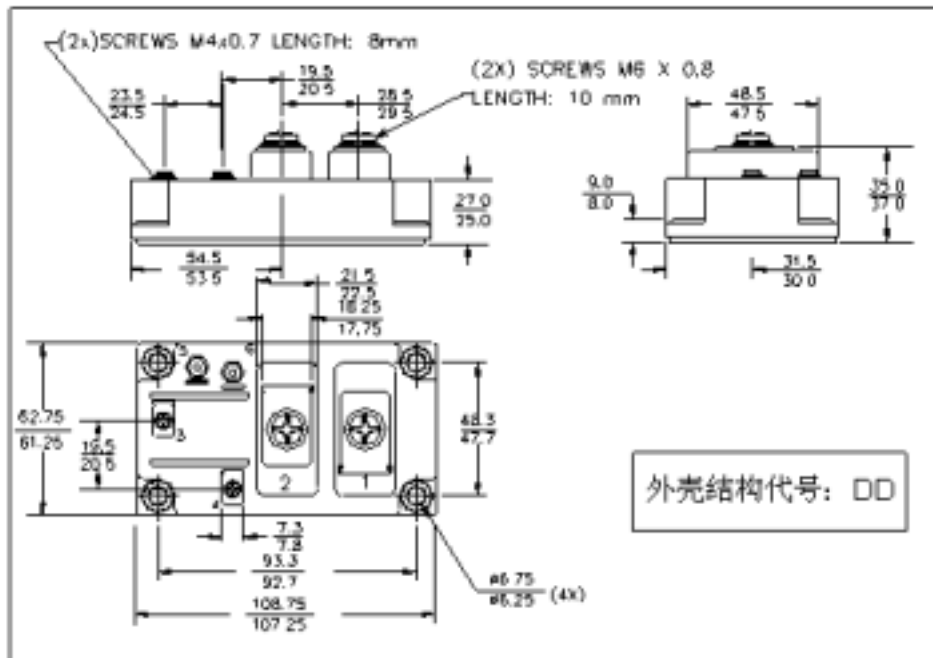
Electrical Characteristics @ T_J=25°C(unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
V _{(BR)CES}	Collector-to-Emitter Breakdown Voltage	1200	—	—	V	V _{GE} =0V, I _C =4mA
V _{CE(ON)}	Collector-to-Emitter Voltage	—	1.9	—		V _{GE} =15V, I _C =600A
		—	2.1	—		V _{GE} =15V, I _C =600A, T _J =125°C
V _{GE(th)}	Gate Threshold Voltage	5.0	—	7.0		I _C =24mA
DV _{GE(th)DT_J}	Temperature Coeff. of Threshold Voltage	—	—	—	mV/°C	V _{CE} =V _{GE} , I _C =2.5mA
g _{fe}	Forward Transconductance	—	—	—	S	V _{CE} =25V, I _C =600A
I _{CES}	Collector - to - Emitter Leaking Current	—	—	5mA		V _{GE} =0V, V _{CE} =1200V
		—	—	12mA		V _{GE} =0V, V _{CE} =1200V, T _J =125°C
V _{FM}	Diode Forward Voltage - Maximum	—	2.2	2.5	V	I _F =600A, V _{GE} =0V
		—	2.1	—		I _F =400A, V _{GE} =0V, T _J =125°C
I _{GES}	Gate - to - Emitter Leakage Current	—	—	500	nA	V _{GE} =± 20V

Dynamic Characteristics - T_J=125°C (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
Q _g	Total gate charge (turn - on)	—	3320	4900	nC	V _{CC} = 400V V _{GE} =15V
Q _{ge}	Gate - Emitter charge (turn - on)	—	560	840		I _C =600A
Q _{gc}	Gate - Collector charge (turn - on)	—	1100	1650		T _J =25°C
T _{d(on)}	Turn - On Delay Time	—	230	—	nS	R _G =6.8 Ω
t _r	Rise Time	—	60	—		I _C = 600A
T _{d(off)}	Turn - Off Delay Time	—	539	—		V _{CC} = 600V
t _f	Fall Time	—	80	—		V _{GE} =± 15V
E _{on}	Turn - On Switching Energy	—	65	—	mJ	
E _{off(1)}	Turn - Off Switching Energy	—	60	—		
E _{ts(1)}	Total Switching Energy	—	125	—		
C _{ies}	Input Capacitance	—	41	—	nf	V _{GE} = 0V
C _{oes}	Output Capacitance	—	3.2	—		V _{CC} = 25V
C _{res}	Reverse Transfer Capacitance	—	2.1	—		f=1MHZ
t _{rr}	Diode Reverse Recovery Time	—	196	—	nS	I _C = 400A
I _{rr}	Diode Peak Reverse Current	—	420	—	A	R _{G1} =15Ω
Q _{rr}	Diode Recovery Charge	—	12833	—	nC	R _{G2} =0Ω
di(rec)M/dt	Diode Peak Rate of Fall of Recovery During t _b	—	1740	—	A/μs	V _{CC} =720V di/dt=1294A/μs
T _{sc}	Short circuit withstand time	10	—	—	μs	V _{CC} =720V, V _{GE} =± 15V Min. R _{G1} =15Ω, V _{CEP} =1100V

Case Outline



Dimensions are shown in millimeters

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