

Electrical Features

- Trench/Fieldstop IGBT
- Half-bridge
- Standard package
- High short circuit capability
- Including anti-parallel FWD



Typical Applications

- High Power Converters
- Motor Drives
- UPS System

IGBT, Inverter

Maximum Rated Values							
Symbol	Item	Conditions	Rating	Unit			
IGBT							
V_{CES}	Collector-emitter voltage	$T_{vj}=25^{\circ}\text{C}$	1700	V			
V_{GES}	Gate-emitter voltage	-	± 20	V			
I_C	Collector current,DC	$T_C=100^{\circ}\text{C}, T_{vj}=175^{\circ}\text{C}$	75	A			
I_{CRM}	Repetitive peak collector current	$t_p=1\text{ms}$	150	A			
P_{tot}	Total power dissipation	$T_C=25^{\circ}\text{C}, T_{vj}=175^{\circ}\text{C}$	-	W			
Characteristics Values							
Symbol	Item	Conditions	Values			Unit	
IGBT			Min.	Typ.	Max.		
I_{CES}	Collector-emitter cut-off current	$V_{CE}=1700\text{V}, V_{GE}=0\text{V}, T_{vj}=25^{\circ}\text{C}$	-	-	1	mA	
I_{GES}	Gate leakage current	$V_{CE}=0\text{V}, V_{GE}=20\text{V}, T_{vj}=25^{\circ}\text{C}$	-	-	250	nA	
$V_{GE(th)}$	Gate-emitter threshold voltage	$I_C=3\text{mA}, V_{CE}=V_{GE}, T_{vj}=25^{\circ}\text{C}$	5.2	5.9	6.4	V	
V_{CESat}	Collector-emitter saturation voltage	$I_C=75\text{A}$ $V_{GE}=15\text{V}$	$T_{vj}=25^{\circ}\text{C}$	-	2.0		3.0
			$T_{vj}=125^{\circ}\text{C}$	-	2.3		-
			$T_{vj}=150^{\circ}\text{C}$	-	-	-	
C_{ies}	Input capacitance	$V_{CE}=25\text{V}, V_{GE}=0\text{V}$ $f=1\text{MHz}, T_{vj}=25^{\circ}\text{C}$	-	5.30	-	nF	
C_{oes}	Output capacitance		-	0.35	-		
C_{res}	Reverse transfer capacitance		-	0.18	-		
Q_G	Gate charge	$V_{GE}=-15\text{V}\dots+15\text{V}$	-	1.47	-	uC	
R_g	Internal gate resistance	$T_{vj}=25^{\circ}\text{C}$		7.6		Ω	

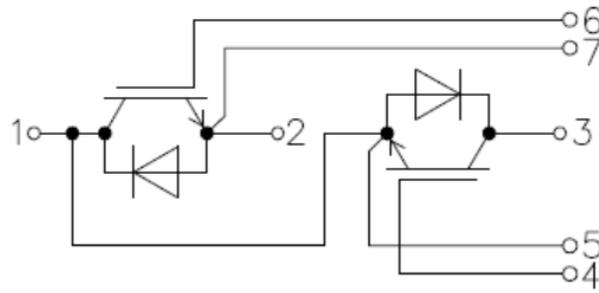
$t_{d(on)}$	Turn-on delay time	$V_{CC}=900V,$ $I_C=75A,$ $V_{GE}=\pm 15V,$ $R_{G(on)}=10\ \Omega,$ $R_{G(off)}=10\ \Omega,$ Inductive load	$T_{vj}=25^\circ C$	-	262	-	ns
			$T_{vj}=125^\circ C$	-	265	-	
			$T_{vj}=150^\circ C$	-	-	-	
t_r	Rise time		$T_{vj}=25^\circ C$	-	105	-	
			$T_{vj}=125^\circ C$	-	121	-	
			$T_{vj}=150^\circ C$	-	-	-	
$t_{d(off)}$	Turn-off delay time		$T_{vj}=25^\circ C$	-	322	-	
			$T_{vj}=125^\circ C$	-	360	-	
			$T_{vj}=150^\circ C$	-	-	-	
t_f	Fall time		$T_{vj}=25^\circ C$	-	682	-	
			$T_{vj}=125^\circ C$	-	1012	-	
			$T_{vj}=150^\circ C$	-	-	-	
E_{on}	Turn-on energy (per pulse)	$T_{vj}=25^\circ C$	-	21.1	-	mJ	
		$T_{vj}=125^\circ C$	-	28.8	-		
		$T_{vj}=150^\circ C$	-	-	-		
E_{off}	Turn-off energy (per pulse)	$T_{vj}=25^\circ C$	-	20.5	-		
		$T_{vj}=125^\circ C$	-	26.2	-		
		$T_{vj}=150^\circ C$	-	-	-		
R_{thJC}	Thermal resistance, junction to case	per IGBT	-	-	-	K/W	
R_{thCH}	Thermal resistance, case to heatsink	per IGBT/ $\lambda_{grease}=1W/(m \cdot K)$	-	-	-	K/W	
T_{vjop}	Temperature under switching conditions		-40	-	150	$^\circ C$	
Diode, Inverter							
Maximum Rated Values							
Symbol	Item	Conditions			Rating	Unit	
V_{RRM}	Repetitive peak reverse voltage	$T_{vj}=25^\circ C$			1700	V	
I_F	Forward current, DC	$T_C=100^\circ C, T_{vj}=175^\circ C$			75	A	
I_{FRM}	Repetitive peak forward current	$t_p=1ms$			150	A	
Characteristic Values							
V_F	Continuous forward voltage	$I_F=75A$ $V_{GE}=0V$	$T_{vj}=25^\circ C$	-	2.1	3	V
			$T_{vj}=125^\circ C$	-	1.8	-	
			$T_{vj}=150^\circ C$	-	-	-	
I_{RM}	Peak reverse recovery current		$T_{vj}=25^\circ C$	-	58.0	-	A
			$T_{vj}=125^\circ C$	-	78.5	-	
			$T_{vj}=150^\circ C$	-	-	-	
t_{rr}	Reverse recovery time	$V_R=900V$ $I_F=75A$	$T_{vj}=25^\circ C$	-	112	-	ns
			$T_{vj}=125^\circ C$	-	758	-	
			$T_{vj}=150^\circ C$	-	-	-	
Q_f	Repetitive peak forward current		$T_{vj}=25^\circ C$	-	10.1	-	μC
			$T_{vj}=125^\circ C$	-	22.3	-	
			$T_{vj}=150^\circ C$	-	-	-	
E_{rec}	Recovered charge	$T_{vj}=25^\circ C$	-	5.28	-	mJ	
		$T_{vj}=125^\circ C$	-	12.1	-		
		$T_{vj}=150^\circ C$	-	-	-		

R_{thJC}	Thermal resistance, junction to case	per diode	-	-	-	K/W
R_{thCH}	Thermal resistance, case to heatsink	per diode / $\lambda_{grease}=1W/(m \cdot K)$	-	-	-	K/W
T_{vjop}	Temperature under switching conditions		-40		150	°C

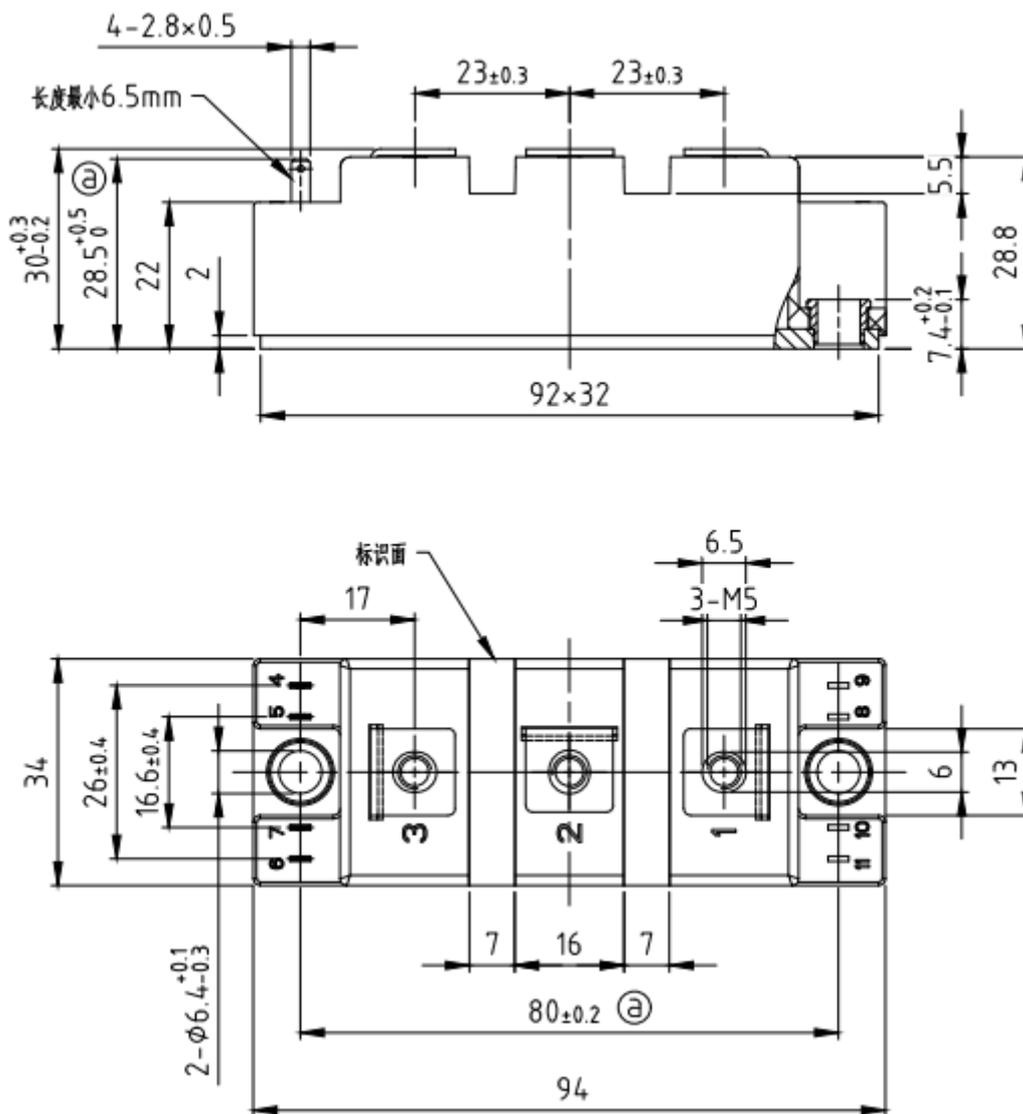
Module

Symbol	Item	Conditions	Rating			Unit
V_{ISOL}	Isolation voltage	Terminals to baseplate, RMS, $f=50Hz, t=1min$	2500			V
-	Material of module baseplate	-	Cu			-
-	Internal isolation	Basic insulation(class 1, IEC 61140)	Al ₂ O ₃			-
T_{stg}	Storage temperature	-	-40~125			°C
Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
M	Mounting torque for module mounting	Screw M6	3.0	-	5.0	Nm
	Terminal connection torque	Screw M5	2.5	-	5.0	Nm
ds	Creepage distance	Terminal to terminal	-	23	-	mm
		Terminal to base plate	-	29	-	
da	Clearance	Terminal to terminal	-	11	-	mm
		Terminal to base plate	-	23	-	
m	Weight	-	-	150	-	g

Circuit diagram headline



Package outlines (Unit: mm)



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