



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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IGBT Module

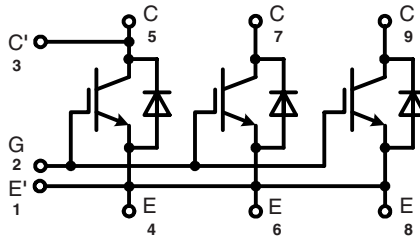
Single switch

Short Circuit SOA Capability
Square RBSOA

$$I_{C80} = 1200 \text{ A}$$

$$V_{CES} = 3300 \text{ V}$$

$$V_{CE(sat) \text{ typ.}} = 3.1 \text{ V}$$



IGBT

Symbol	Conditions	Maximum Ratings
V_{CES}	$V_{GE} = 0 \text{ V}$	3300 V
V_{GES}		$\pm 20 \text{ V}$
I_{C80}	$T_C = 80^\circ\text{C}$	1200 A
I_{CM}	$t_p = 1 \text{ ms}; T_C = 80^\circ\text{C}$	2400 A
t_{SC}	$V_{CC} = 2500 \text{ V}; V_{CEM \text{ CHIP}} = \leq 3300 \text{ V}; V_{GE} \leq 15 \text{ V}; T_{VJ} \leq 125^\circ\text{C}$	10 μs

Features

- NPT[®] IGBT
- Low-loss
- Smooth switching waveforms for good EMC
- Industry standard package
- High power density
- AISiC base-plate for high power cycling capacity
- AlN substrate for low thermal resistance

Typical Applications

- AC power converters for
 - industrial drives
 - windmills
 - traction
- LASER pulse generator

Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
$V_{CE(sat)} \text{ ①}$	$I_C = 1200 \text{ A}; V_{GE} = 15 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$		3.1 3.8	V V
$V_{GE(th)}$	$I_C = 240 \text{ mA}; V_{CE} = V_{GE}$	6		8 V
I_{CES}	$V_{CE} = 3300 \text{ V}; V_{GE} = 0 \text{ V}; T_{VJ} = 125^\circ\text{C}$			120 mA
I_{GES}	$V_{CE} = 0 \text{ V}; V_{GE} = \pm 20 \text{ V}; T_{VJ} = 125^\circ\text{C}$			500 nA
E_{on}	} Inductive load; $T_{VJ} = 125^\circ\text{C}; V_{GE} = \pm 15 \text{ V};$ $V_{CC} = 1800 \text{ V}; I_C = 1200 \text{ A}; R_G = 1 \Omega; L_e = 100 \text{ nH}$		1750	mJ
E_{off}			2000	mJ
R_{thJC}				0.0085 K/W

① Collector emitter saturation voltage is given at chip level

Diode

Symbol	Conditions	Maximum Ratings	
I_{F80}	$T_C = 80^\circ\text{C}$	1200	A
I_{FSM}	$V_R = 0\text{ V}; T_{VJ} = 125^\circ\text{C}; t_p = 10\text{ ms};$ half-sinewave	12000	A

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
V_F ②	$I_F = 1200\text{ A}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$	2.30		V
		2.35		V
I_{RM} t_{rr} Q_{RR} E_{rec}	$V_{CC} = 1800\text{ V}; I_C = 1200\text{ A};$ $V_{GE} = \pm 15\text{ V}; R_G = 1\ \Omega; T_{VJ} = 125^\circ\text{C}$ Inductive load; $L_\sigma = 100\text{ nH}$	1680		A
		800		ns
		1320		μC
		1740		mJ
R_{thJC}			0.017	K/W

② Forward voltage is given at chip level

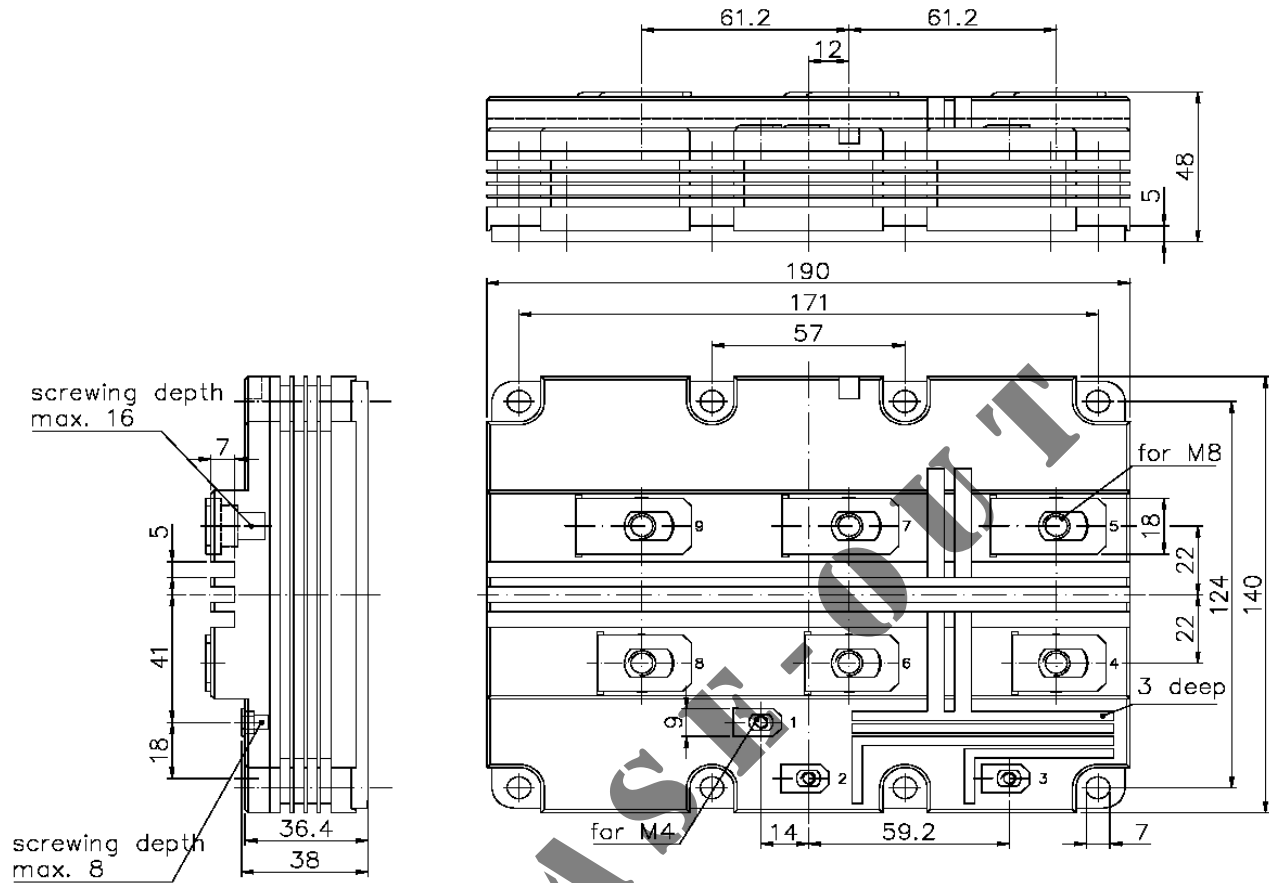
Module

Symbol	Conditions	Maximum Ratings	
T_{JM}	max junction temperature	+125	$^\circ\text{C}$
T_{VJ}	Operating temperature	-40...+125	$^\circ\text{C}$
T_{stg}	Storage temperature	-40...+125	$^\circ\text{C}$
M_d	Mounting torque	Base-heatsink, M6 screws	4 - 6 Nm
		Main terminals, M8 screws	8 - 10 Nm

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
d_A	Clearance distance	terminal to base	26	mm
		terminal to terminal	26	mm
d_s	Surface creepage distance	terminal to base	56	mm
		terminal to terminal	56	mm
V_{ISOL}	1 min, $f = 50\text{ Hz}$	10500		V~
V_E	Partial discharge extinction voltage $f = 50\text{ Hz}, Q_{PD} \leq 10\text{ pC}$	5100		V
CTI	Comperative tracking index	600		
L_σ	Module stray inductance, C to E terminal		18	nH
$R_{term-chip}^*$	Resistance terminal to chip		0.12	m Ω
R_{thCH}	per module; λ grease = 1 W/m \cdot K		0.006	K/W
Weight			1500	g

*) $V = V_{CE(sat)} + R_{term-chip} \cdot I_C$ resp. $V = V_F + R_{term-chip} \cdot I_F$

Outline drawing



Note: all dimensions are shown in mm