



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

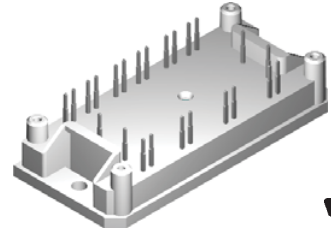
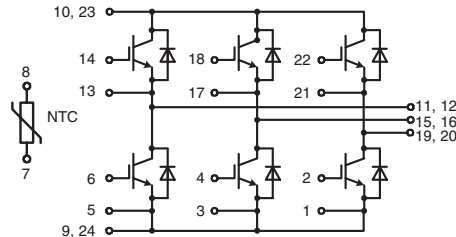
Sixpack

Square RBSOA

$$I_{C25} = 60 \text{ A}$$

$$V_{CES} = 600 \text{ V}$$

$$V_{CE(sat) \text{ typ.}} = 2.3 \text{ V}$$



IGBTs

Symbol	Conditions	Maximum Ratings	
V_{CES}	$T_{VJ} = 25^{\circ}\text{C to } 150^{\circ}\text{C}$	600	V
V_{GES}		± 20	V
I_{C25}	$T_C = 25^{\circ}\text{C}$	60	A
I_{C80}	$T_C = 80^{\circ}\text{C}$	41	A
I_{CM}	$V_{GE} = \pm 15 \text{ V}; R_G = 10 \Omega; T_{VJ} = 125^{\circ}\text{C}$	80	A
V_{CEK}	RBSOA; clamped inductive load; $L = 100 \mu\text{H}$	V_{CES}	
P_{tot}	$T_C = 25^{\circ}\text{C}$	180	W

Features

- IGBTs
 - low saturation voltage
 - fast switching
 - short tail current for optimized performance also in resonant circuits
- HiPerFRED™ diode:
 - fast reverse recovery
 - low operating forward voltage
 - low leakage current
- Industry Standard Package
 - solderable pins for PCB mounting
 - isolated copper base plate
- UL registered E72873

Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)		
		min.	typ.	max.
$V_{CE(sat)}$	$I_C = 30 \text{ A}; V_{GE} = 15 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		2.3 2.0	V V
$V_{GE(th)}$	$I_C = 0.25 \text{ mA}; V_{GE} = V_{CE}$	3		5 V
I_{CES}	$V_{CE} = V_{CES}; V_{GE} = 0 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		1.2	0.2 mA mA
I_{GES}	$V_{CE} = 0 \text{ V}; V_{GE} = \pm 20 \text{ V}$			100 nA
$t_{d(on)}$ t_r $t_{d(off)}$ t_f E_{on} E_{off}	Inductive load, $T_{VJ} = 125^{\circ}\text{C}$ $V_{CE} = 400 \text{ V}; I_C = 30 \text{ A}$ $V_{GE} = \pm 15 \text{ V}; R_G = 3 \Omega$		20 20 130 80 0.6 0.5	ns ns ns ns mJ mJ
C_{ies}		$V_{CE} = 25 \text{ V}; V_{GE} = 0 \text{ V}; f = 1 \text{ MHz}$	2500	pF
Q_{Gon}		$V_{CE} = 300 \text{ V}; V_{GE} = 15 \text{ V}; I_C = 30 \text{ A}$	95	nC
R_{thJC} R_{thCH}		(per IGBT)	0.25	0.7 K/W K/W

Typical Applications

- AC drives

Diodes

Symbol	Conditions	Maximum Ratings	
I_{F25}	$T_C = 25^\circ\text{C}$	48	A
I_{F80}	$T_C = 80^\circ\text{C}$	33	A

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
V_F	$I_F = 30\text{ A}; V_{GE} = 0\text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$	2.2	2.6	V
		1.7		V
I_{RM} t_{tr}	$I_F = 30\text{ A}; di_F/dt = -400\text{ A}/\mu\text{s}; T_{VJ} = 100^\circ\text{C}$ $V_R = 300\text{ V}; V_{GE} = 0\text{ V}$	5		A
		65		ns
R_{thJC}	(per Diode)		0.9	K/W
R_{thCH}		0.3		K/W

Temperature Sensor NTC

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
R_{25}	$T = 25^\circ\text{C}$	4.45	4.7	5.0 k Ω
$B_{25/85}$			3510	K

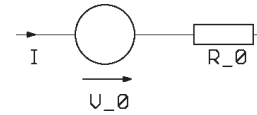
Module

Symbol	Conditions	Maximum Ratings	
T_{VJ}	operating	-40...+125	$^\circ\text{C}$
T_{VJM}		-40...+150	$^\circ\text{C}$
T_{stg}		-40...+125	$^\circ\text{C}$
V_{ISOL}	$I_{ISOL} \leq 1\text{ mA}; 50/60\text{ Hz}$	2500	V~
M_d	Mounting torque (M4)	2.0 - 2.2	Nm

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
d_S	Creepage distance on surface	12.7		mm
d_A	Strike distance in air	12.7		mm
Weight		40		g

Equivalent Circuits for Simulation

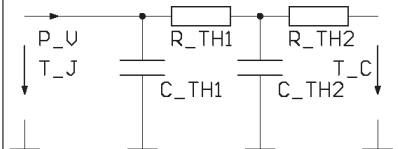
Conduction



IGBT (typ. at $V_{GE} = 15\text{ V}; T_J = 125^\circ\text{C}$)
 $V_0 = 1.1\text{ V}; R_0 = 21.5\text{ m}\Omega$

Free Wheeling Diode (typ. at $T_J = 125^\circ\text{C}$)
 $V_0 = 1.20\text{ V}; R_0 = 19\text{ m}\Omega$

Thermal Response



IGBT (typ.)

$$C_{th1} = tbd\text{ J/K}; R_{th1} = tbd\text{ K/W}$$

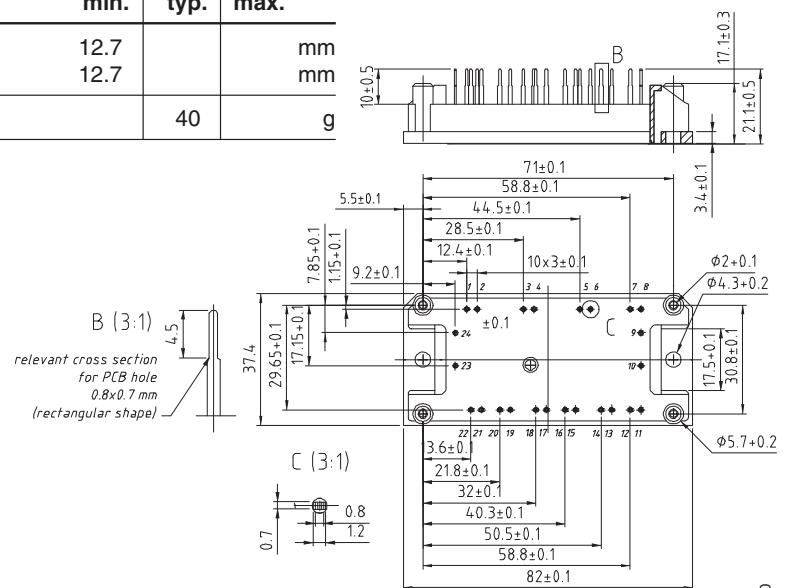
$$C_{th2} = tbd\text{ J/K}; R_{th2} = tbd\text{ K/W}$$

Free Wheeling Diode (typ.)

$$C_{th1} = tbd\text{ J/K}; R_{th1} = tbd\text{ K/W}$$

$$C_{th2} = tbd\text{ J/K}; R_{th2} = tbd\text{ K/W}$$

Dimensions in mm (1 mm = 0.0394")



IXYS reserves the right to change limits, test conditions and dimensions.

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