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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 Modules

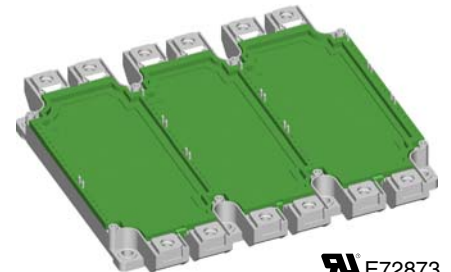
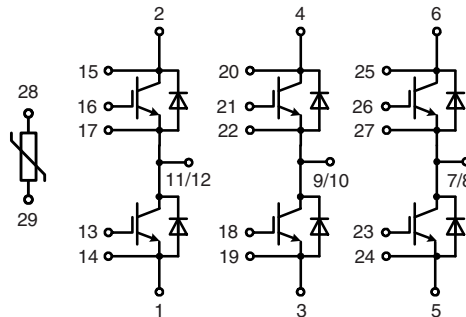
## Sixpack

 NPT<sup>3</sup> IGBT

$$I_{C80} = 235 \text{ A}$$

$$V_{CES} = 1700 \text{ V}$$

$$V_{CE(sat) \text{ typ.}} = 2.5 \text{ V}$$



See outline drawing for pin arrangement

### IGBTs

Symbol	Conditions	Maximum Ratings	
$V_{CES}$	$T_{VJ} = 25^{\circ}\text{C to } 125^{\circ}\text{C}$	1700	V
$V_{GES}$		$\pm 20$	V
$I_{C25}$	$T_C = 25^{\circ}\text{C}$	335	A
$I_{C80}$	$T_C = 80^{\circ}\text{C}$	235	A
<b>RBSOA</b>	$R_G = 5 \Omega$ ; $T_{VJ} = 125^{\circ}\text{C}$ Clamped inductive load; $L = 100 \mu\text{H}$	$I_{CM} = 470$ $V_{CEK} \leq V_{CES}$	A
<b>t<sub>SC</sub></b> <b>(SCSOA)</b>	$V_{CE} = 1200 \text{ V}$ ; $V_{GE} = \pm 15 \text{ V}$ ; $R_G = 5 \Omega$ ; $T_{VJ} = 125^{\circ}\text{C}$ ; non-repetitive; $V_{CEmax} \leq V_{CES}$	10	$\mu\text{s}$
<b>P<sub>tot</sub></b>	$T_C = 25^{\circ}\text{C}$	1.4	kW

### Features

- €NPT<sup>3</sup> IGBT technology
- €low saturation voltage
- €low switching losses
- €square RBSOA, no latch up
- €high short circuit capability
- €positive temperature coefficient for easy parallelling
- €MOS input, voltage controlled
- €ultra fast free wheeling diodes
- €solderable pins for PCB mounting
- €package with copper base plate

### Advantages

- €space savings
- €reduced protection circuits
- €package designed for wave soldering

### Typical Applications

- €AC motor control
- €AC servo and robot drives
- €power supplies

Symbol	Conditions	Characteristic Values ( $T_{VJ} = 25^{\circ}\text{C}$ , unless otherwise specified)			
		min.	typ.	max.	
$V_{CE(sat)}$	$I_C = 225 \text{ A}$ ; $V_{GE} = 15 \text{ V}$ ; $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		2.5 2.9	2.9 3.4 V	
$V_{GE(th)}$	$I_C = 20 \text{ mA}$ ; $V_{GE} = V_{CE}$	4.5		6.5 V	
$I_{CES}$	$V_{CE} = V_{CES}$ ; $V_{GE} = 0 \text{ V}$ ; $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		4.4	0.6 mA mA	
$I_{GES}$	$V_{CE} = 0 \text{ V}$ ; $V_{GE} = \pm 20 \text{ V}$			500 nA	
$t_{d(on)}$ $t_r$ $t_{d(off)}$ $t_f$ $E_{on}$ $E_{off}$	Inductive load, $T_{VJ} = 125^{\circ}\text{C}$ $V_{CE} = 900 \text{ V}$ ; $I_C = 200 \text{ A}$ $V_{GE} = \pm 15 \text{ V}$ ; $R_G = 5 \Omega$		180 110 500 110 66 54	ns ns ns ns mJ mJ	
$C_{ies}$		$V_{CE} = 25 \text{ V}$ ; $V_{GE} = 0 \text{ V}$ ; $f = 1 \text{ MHz}$		22	nF
$Q_{Gon}$		$V_{CE} = 700 \text{ V}$ ; $V_{GE} = 15 \text{ V}$ ; $I_C = 200 \text{ A}$		1.72	$\mu\text{C}$
$R_{thJC}$					0.085 K/W

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

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**Diodes**

Symbol	Conditions	Maximum Ratings	
$I_{F80}$	$T_C = 80^\circ\text{C}$	200	A
$I_{FRM}$	$t_p = 1 \text{ ms}$	400	A
$I^2t$	$T_{VJ} = 125^\circ\text{C}; t = 10 \text{ ms}; V_R = 0 \text{ V}$	5800	$\text{A}^2\text{s}$

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$V_F$	$I_F = 225 \text{ A}; V_{GE} = 0 \text{ V}; T_{VJ} = 25^\circ\text{C}$			2.4 V
$I_{RM}$	$I_F = 225 \text{ A}; di_F/dt = 1600 \text{ A}/\mu\text{s}; T_{VJ} = 125^\circ\text{C}; V_R = 1150 \text{ V}$		160	A
$R_{thJC}$		0.165		K/W

**Temperature Sensor NTC**

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$R_{25}$	$T = 25^\circ\text{C}$	4.75	5.0	5.25 $\text{k}\Omega$
$B_{25/50}$			3375	K

**Module**

Symbol	Conditions	Maximum Ratings	
$T_{VJ}$	operating	-40...+125	$^\circ\text{C}$
$T_{JM}$		+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 (M5)	3 - 6	Nm
	Terminal connection torque (M6)	3 - 6	Nm

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$R_{term-chip}^{*)}$	Resistance terminal to chip		0.55	$\text{m}\Omega$
$d_S$	Creepage distance on surface	12.7		mm
$d_A$	Strike distance in air	10		mm
$R_{thCH}$	with heatsink compound		0.01	K/W
<b>Weight</b>			900	g

\*)  $V = V_{CE(sat)} + 2x R_{term-chip} \cdot I_C$  resp.  $V = V_F + 2x R_{term-chip} \cdot I_F$

Dimensions in mm (1 mm = 0.0394")

