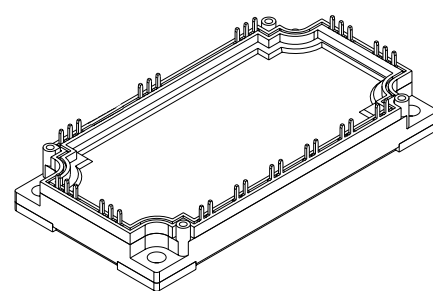
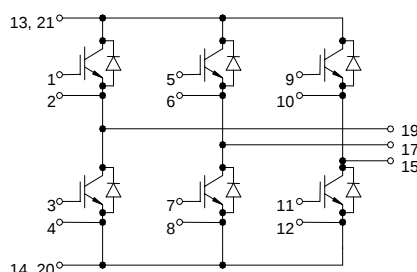


IGBT Modules

Sixpack

Short Circuit SOA Capability
Square RBSOA

$$\begin{aligned} I_{C25} &= 130 \text{ A} \\ V_{CES} &= 1200 \text{ V} \\ V_{CE(sat) \text{ typ.}} &= 2.0 \text{ V} \end{aligned}$$



IGBTs

Symbol	Conditions	Maximum Ratings	
V_{CES}	$T_{VJ} = 25^{\circ}\text{C to } 150^{\circ}\text{C}$	1200	V
V_{GES}		± 20	V
I_{C25}	$T_C = 25^{\circ}\text{C}$	130	A
I_{C80}	$T_C = 80^{\circ}\text{C}$	90	A
RBSOA	$V_{GE} = \pm 15 \text{ V}$; $R_G = 15 \Omega$; $T_{VJ} = 125^{\circ}\text{C}$ Clamped inductive load; $L = 100 \mu\text{H}$	$I_{CM} = 150$ $V_{CEK} \leq V_{CES}$	A
t_{SC} (SCSOA)	$V_{CE} = 900 \text{ V}$; $V_{GE} = \pm 15 \text{ V}$; $R_G = 15 \Omega$; $T_{VJ} = 125^{\circ}\text{C}$ non-repetitive	10	μs
P_{tot}	$T_C = 25^{\circ}\text{C}$	500	W

Features

- IGBTs
 - low saturation voltage
 - positive temperature coefficient
 - 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

Typical Applications

- AC drives
- power supplies with power factor correction

Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)		
		min.	typ.	max.
$V_{CE(sat)}$	$I_C = 75 \text{ A}$; $V_{GE} = 15 \text{ V}$; $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		2.0 2.2	2.5 V
$V_{GE(th)}$	$I_C = 3 \text{ mA}$; $V_{GE} = V_{CE}$	4.5		6.5 V
I_{CES}	$V_{CE} = V_{CES}$; $V_{GE} = 0 \text{ V}$; $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		1.1	1.1 mA mA
I_{GES}	$V_{CE} = 0 \text{ V}$; $V_{GE} = \pm 20 \text{ V}$			400 nA
$t_{d(on)}$ t_r $t_{d(off)}$ t_f E_{on} E_{off}	Inductive load, $T_{VJ} = 125^{\circ}\text{C}$ $V_{CE} = 600 \text{ V}$; $I_C = 75 \text{ A}$ $V_{GE} = \pm 15 \text{ V}$; $R_G = 15 \Omega$		150 60 680 50 9.0 7.5	ns ns ns ns mJ mJ
C_{ies}			5.7	nF
Q_{Gon}			0.75	μC
R_{thJC}	(per IGBT)			0.25 K/W

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

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Diodes

Symbol	Conditions	Maximum Ratings	
I_{F25}	$T_C = 25^\circ\text{C}$	150	A
I_{F80}	$T_C = 80^\circ\text{C}$	100	A

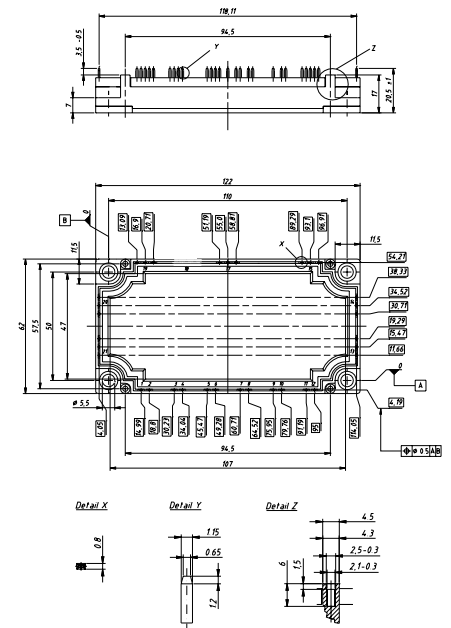
Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
V_F	$I_F = 75\text{ A}; V_{GE} = 0\text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$		2.2 1.6	V V
I_{RM} t_{rr}	$I_F = 75\text{ A}; di_F/dt = -500\text{ A}/\mu\text{s}; T_{VJ} = 125^\circ\text{C}$ $V_R = 600\text{ V}; V_{GE} = 0\text{ V}$		79 220	A ns
R_{thJC}	(per diode)			0.41 K/W

Module

Symbol	Conditions	Maximum Ratings	
T_{VJ}		-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 (M5)	3 - 6	Nm

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$R_{pin-chip}$			1.8	m Ω
d_s	Creepage distance on surface	10		mm
d_A	Strike distance in air	10		mm
R_{thCH}	with heatsink compound		0.01	K/W
Weight			300	g

Dimensions in mm (1 mm = 0.0394")



Higher magnification on page B3 - 72