

IGBT Modules

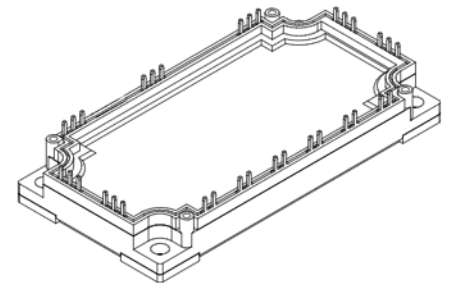
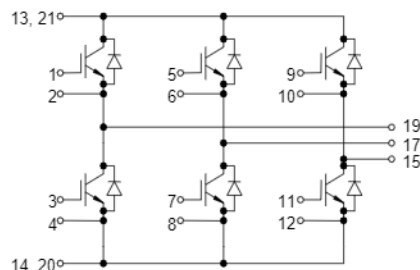
Sixpack

Short Circuit SOA Capability
Square RBSOA

$$I_{C25} = 165 \text{ A}$$

$$V_{CES} = 1200 \text{ V}$$

$$V_{CE(sat) \text{ typ.}} = 2.0 \text{ V}$$



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}	$T_C = 25^{\circ}\text{C}$	165 A
I_{C80}	$T_C = 80^{\circ}\text{C}$	115 A
RBSOA	$V_{GE} = \pm 15 \text{ V}; R_G = 10 \Omega; T_{VJ} = 125^{\circ}\text{C}$ Clamped inductive load; $L = 100 \mu\text{H}$	$I_{CM} = 200$ A $V_{CEK} \leq V_{CES}$
t_{SC} (SCSOA)	$V_{CE} = 900 \text{ V}; V_{GE} = \pm 15 \text{ V}; R_G = 10 \Omega; T_{VJ} = 125^{\circ}\text{C}$ non-repetitive	10 μs
P_{tot}	$T_C = 25^{\circ}\text{C}$	640 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.	
$V_{CE(sat)}$	$I_C = 100 \text{ A}; V_{GE} = 15 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		2.0 2.2	V V	
$V_{GE(th)}$	$I_C = 4 \text{ mA}; V_{GE} = V_{CE}$	4.5		6.5 V	
I_{CES}	$V_{CE} = V_{CES}; V_{GE} = 0 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		1.4	1.4 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	Inductive load, $T_{VJ} = 125^{\circ}\text{C}$ $V_{CE} = 600 \text{ V}; I_C = 100 \text{ A}$ $V_{GE} = \pm 15 \text{ V}; R_G = 10 \Omega$		150 60 680 50	ns ns ns ns	
E_{on}			12	mJ	
E_{off}			10	mJ	
C_{ies}		$V_{CE} = 25 \text{ V}; V_{GE} = 0 \text{ V}; f = 1 \text{ MHz}$		7.4	nF
Q_{Gon}		$V_{CE} = 600 \text{ V}; V_{GE} = 15 \text{ V}; I_C = 100 \text{ A}$		1	μC
R_{thJC}	(per IGBT)			0.19 K/W	

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

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