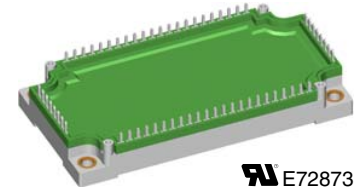
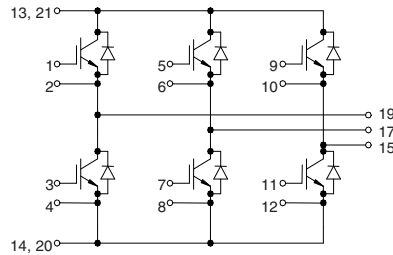


IGBT Modules Sixpack

Short Circuit SOA Capability
Square RBSOA

I_{C25} = 160 A
 V_{CES} = 1200 V
 $V_{CE(sat)}$ typ. = 2.2 V



E72873

See outline drawing for pin arrangement

IGBTs			
Symbol	Conditions	Maximum Ratings	
V_{CES}	$T_{VJ} = 25^{\circ}\text{C}$ to 150°C	1200	V
V_{GES}		± 20	V
I_{C25}	$T_C = 25^{\circ}\text{C}$	160	A
I_{C80}	$T_C = 80^{\circ}\text{C}$	110	A
RBSOA	$V_{GE} = \pm 15\text{ V}$; $R_G = 6.8\ \Omega$; $T_{VJ} = 125^{\circ}\text{C}$ Clamped inductive load; $L = 100\ \mu\text{H}$	$I_{CM} = 200$ $V_{CEK} \leq V_{CES}$	A
t_{SC} (SCSOA)	$V_{CE} = V_{CES}$; $V_{GE} = \pm 15\text{ V}$; $R_G = 6.8\ \Omega$; $T_{VJ} = 125^{\circ}\text{C}$ non-repetitive	10	μs
P_{tot}	$T_C = 25^{\circ}\text{C}$	640	W

Features

- €NPT IGBT technology
- €low saturation voltage
- €low switching losses
- €switching frequency up to 30 kHz
- €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.
$V_{CE(sat)}$	$I_C = 100\text{ A}$; $V_{GE} = 15\text{ V}$; $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		2.2 2.5	2.6 V
$V_{GE(th)}$	$I_C = 4\text{ mA}$; $V_{GE} = V_{CE}$	4.5		6.5 V
I_{CES}	$V_{CE} = V_{CES}$; $V_{GE} = 0\text{ V}$; $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		4	6.3 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, $T_{VJ} = 125^{\circ}\text{C}$ $V_{CE} = 600\text{ V}$; $I_C = 100\text{ A}$ $V_{GE} = \pm 15\text{ V}$; $R_G = 6.8\ \Omega$		100 60 600 90 16.1 14.6	ns ns ns ns mJ mJ
C_{ies} Q_{Gon}		$V_{CE} = 25\text{ V}$; $V_{GE} = 0\text{ V}$; $f = 1\text{ MHz}$ $V_{CE} = 600\text{ V}$; $V_{GE} = 15\text{ V}$; $I_C = 100\text{ A}$		6.5 475
R_{thJC}	(per IGBT)			0.19 K/W

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

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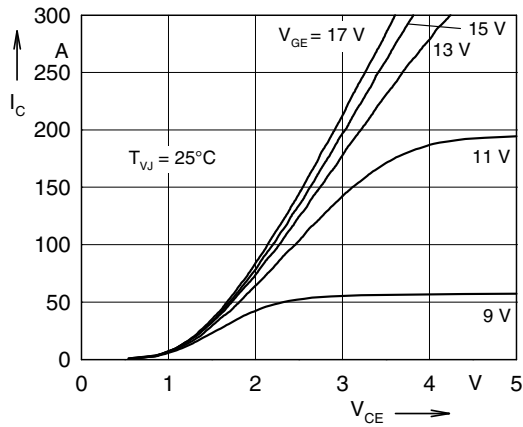


Fig. 1 Typ. output characteristics

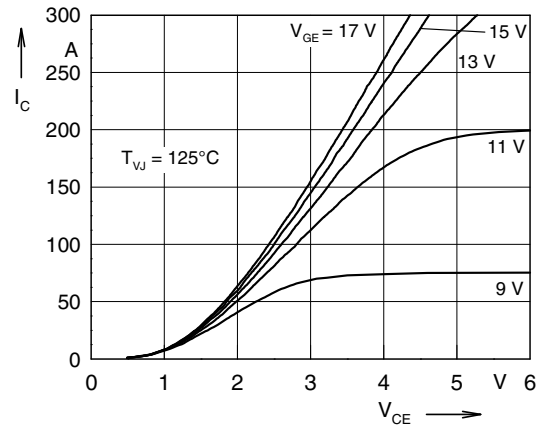


Fig. 2 Typ. output characteristics

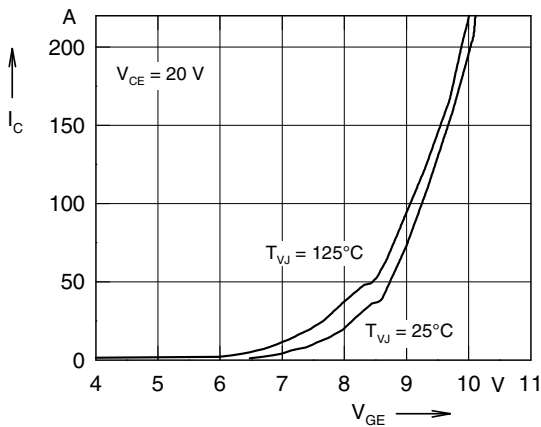


Fig. 3 Typ. transfer characteristics

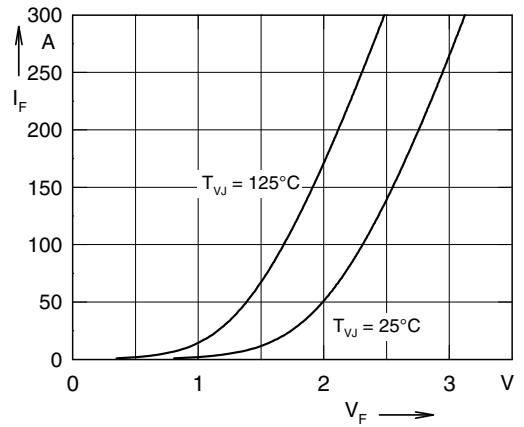


Fig. 4 Typ. forward characteristics of free wheeling diode

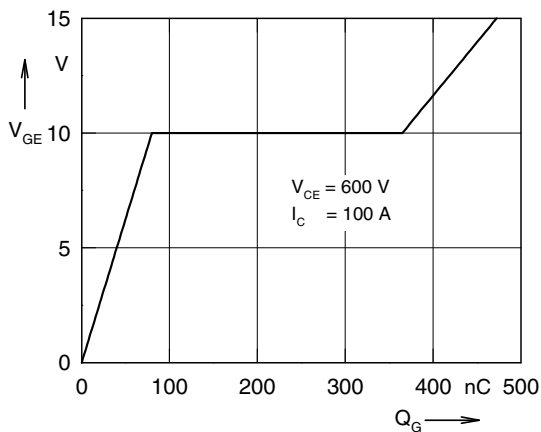


Fig. 5 Typ. turn on gate charge

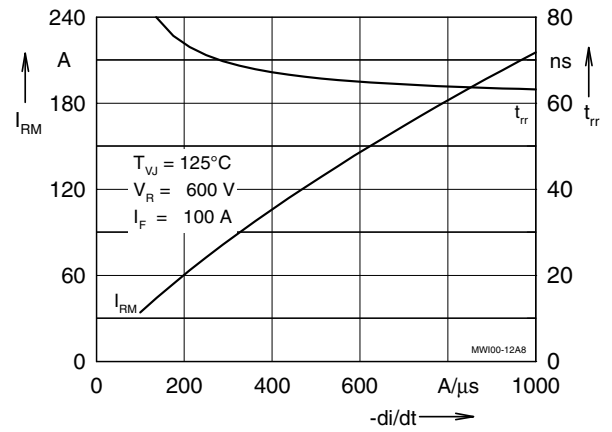


Fig. 6 Typ. turn off characteristics of free wheeling diode

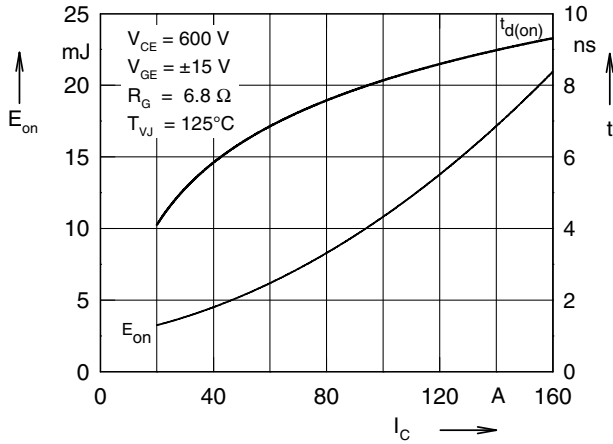


Fig. 7 Typ. turn on energy and switching times versus collector current

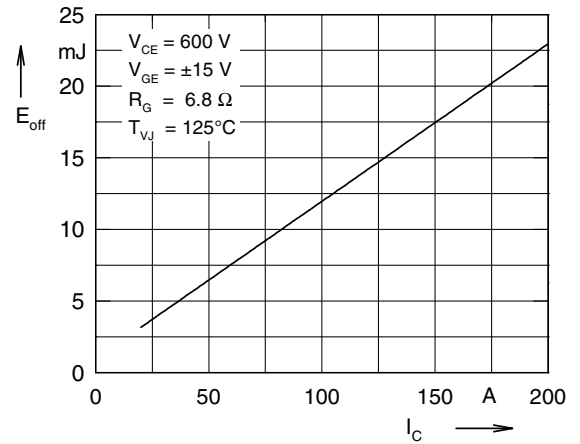


Fig. 8 Typ. turn off energy and switching times versus collector current

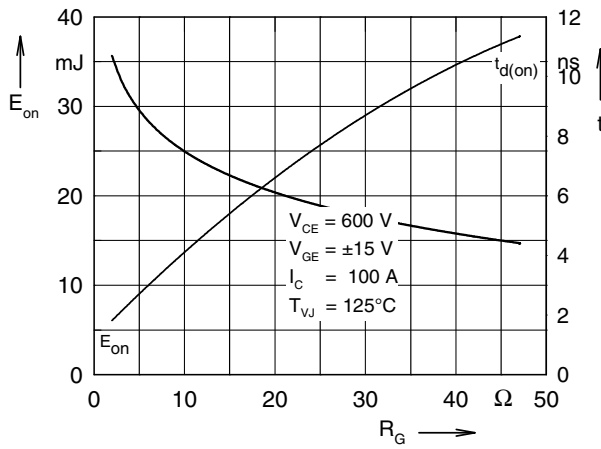


Fig. 9 Typ. turn on energy and switching times versus gate resistor

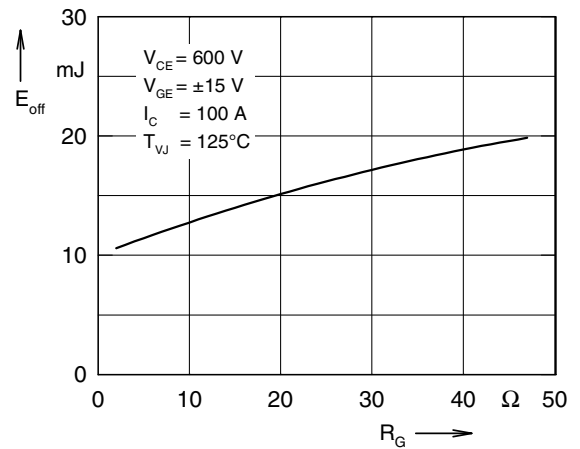


Fig. 10 Typ. turn off energy and switching times versus gate resistor

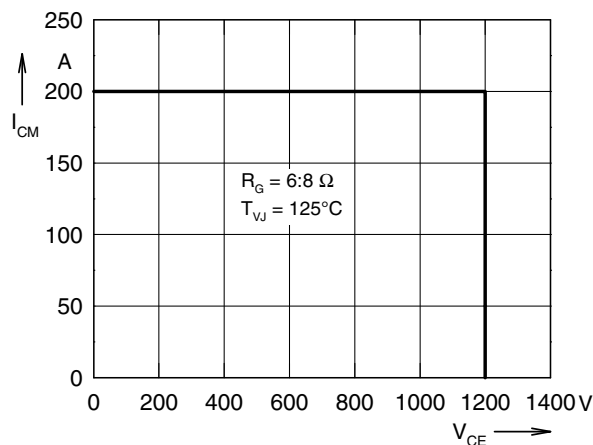


Fig. 11 Reverse biased safe operating area RBSOA

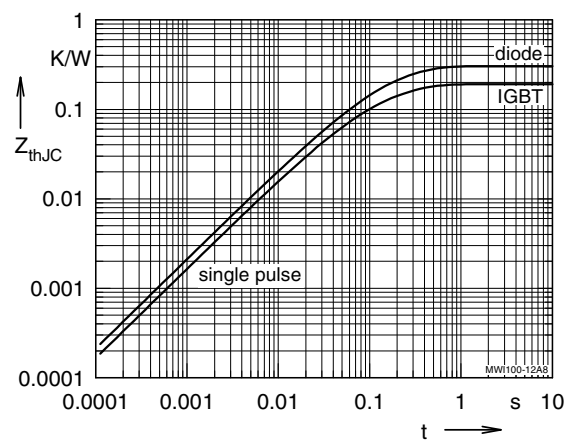


Fig. 12 Typ. transient thermal impedance