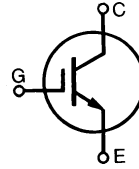


Low $V_{CE(sat)}$
High speed IGBT

IXGH/IXGM 25 N100
IXGH/IXGM 25 N100A

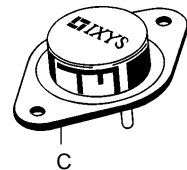
V_{CES}	I_{C25}	$V_{CE(sat)}$
1000 V	50 A	3.5 V
1000 V	50 A	4.0 V



Symbol	Test Conditions	Maximum Ratings
V_{CES}	$T_J = 25^\circ\text{C}$ to 150°C	1000 V
V_{CGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GE} = 1\ \text{M}\Omega$	1000 V
V_{GES}	Continuous	± 20 V
V_{GEM}	Transient	± 30 V
I_{C25}	$T_C = 25^\circ\text{C}$	50 A
I_{C90}	$T_C = 90^\circ\text{C}$	25 A
I_{CM}	$T_C = 25^\circ\text{C}$, 1 ms	100 A
SSOA (RBSOA)	$V_{GE} = 15\ \text{V}$, $T_{VJ} = 125^\circ\text{C}$, $R_G = 33\ \Omega$ Clamped inductive load, $L = 100\ \mu\text{H}$	$I_{CM} = 50$ @ $0.8\ V_{CES}$
P_c	$T_C = 25^\circ\text{C}$	200 W
T_J		$-55 \dots +150$ $^\circ\text{C}$
T_{JM}		150 $^\circ\text{C}$
T_{stg}		$-55 \dots +150$ $^\circ\text{C}$
M_d	Mounting torque (M3)	1.13/10 Nm/lb.in.
Weight		TO-204 = 18 g, TO-247 = 6 g
	Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s	300 $^\circ\text{C}$

TO-247 AD (IXGH)

TO-204 AE (IXGM)



G = Gate, E = Emitter, C = Collector, TAB = Collector

Features

- International standard packages
- 2nd generation HDMOS™ process
- Low $V_{CE(sat)}$
 - for low on-state conduction losses
- High current handling capability
- MOS Gate turn-on
 - drive simplicity
- Voltage rating guaranteed at high temperature (125°C)

Applications

- AC motor speed control
- DC servo and robot drives
- DC choppers
- Uninterruptible power supplies (UPS)
- Switch-mode and resonant-mode power supplies

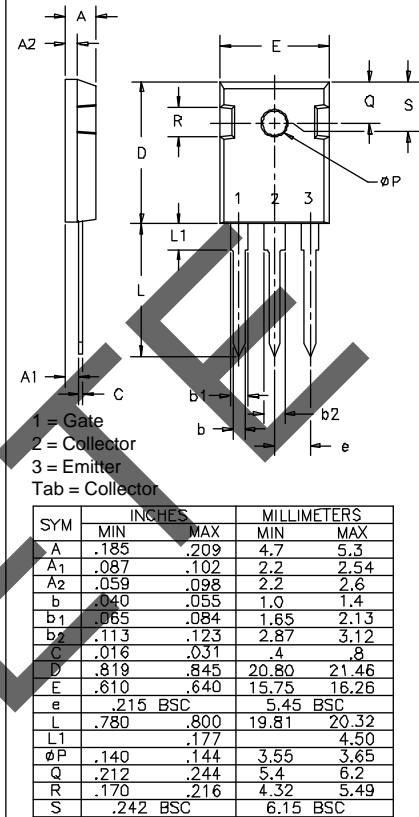
Advantages

- Easy to mount with 1 screw (TO-247) (isolated mounting screw hole)
- High power density

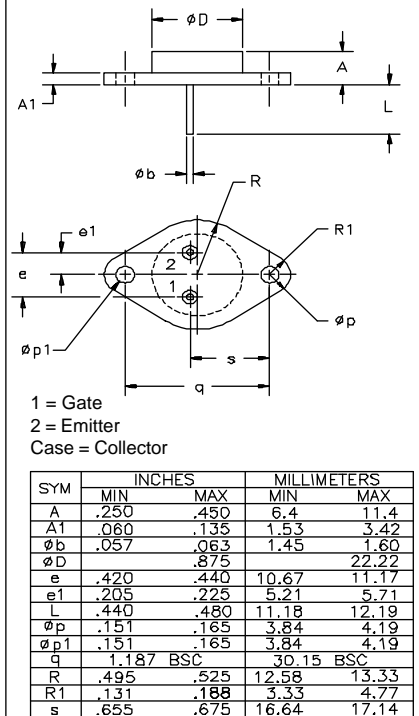
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
BV_{CES}	$I_C = 3\ \text{mA}$, $V_{GE} = 0\ \text{V}$	1000		V
$V_{GE(th)}$	$I_C = 250\ \mu\text{A}$, $V_{CE} = V_{GE}$	2.5		V
I_{CES}	$V_{CE} = 0.8 \cdot V_{CES}$, $V_{GE} = 0\ \text{V}$ $T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$			250 μA 1 mA
I_{GES}	$V_{CE} = 0\ \text{V}$, $V_{GE} = \pm 20\ \text{V}$			± 100 nA
$V_{CE(sat)}$	$I_C = I_{C90}$, $V_{GE} = 15\ \text{V}$ 25N100 25N100A			3.5 V 4.0 V

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
g_{fs}	$I_C = I_{C90}$; $V_{CE} = 10\text{ V}$, Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$	8	15	S
C_{ies}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		2750	pF
C_{oes}			200	pF
C_{res}			50	pF
Q_g	$I_C = I_{C90}$, $V_{GE} = 15\text{ V}$, $V_{CE} = 0.5 V_{CES}$		130	180 nC
Q_{ge}			25	60 nC
Q_{gc}			55	90 nC
$t_{d(on)}$	Inductive load, $T_J = 25^\circ\text{C}$ $I_C = I_{C90}$, $V_{GE} = 15\text{ V}$, $L = 300\ \mu\text{H}$, $V_{CE} = 0.8 V_{CES}$, $R_G = R_{off} = 33\ \Omega$ Remarks: Switching times may increase for $V_{CE}(\text{Clamp}) > 0.8 \cdot V_{CES}$, higher T_J or increased R_G		100	ns
t_{ri}			200	ns
$t_{d(off)}$			500	ns
t_{fi}		25N100A	500	ns
E_{off}		25N100A	5	mJ
$t_{d(on)}$	Inductive load, $T_J = 125^\circ\text{C}$ $I_C = I_{C90}$, $V_{GE} = 15\text{ V}$, $L = 300\ \mu\text{H}$, $V_{CE} = 0.8 V_{CES}$, $R_G = R_{off} = 33\ \Omega$ Remarks: Switching times may increase for $V_{CE}(\text{Clamp}) > 0.8 \cdot V_{CES}$, higher T_J or increased R_G		100	ns
t_{ri}			250	ns
E_{on}			3.5	mJ
$t_{d(off)}$		25N100	720	1000 ns
t_{fi}		25N100A	950	3000 ns
E_{off}	25N100	800	1500 ns	
E_{off}	25N100A	10	mJ	
R_{thJC}				0.62 K/W
R_{thCK}			0.25	K/W

TO-247 AD Outline



TO-204AE Outline



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

IXYS MOSFETS and IGBTs are covered by one or more of the following U.S. patents: 4,835,592 4,881,106 5,017,508 5,049,961 5,187,117 5,486,715
4,850,072 4,931,844 5,034,796 5,063,307 5,237,481 5,381,025

Fig. 1 Saturation Characteristics

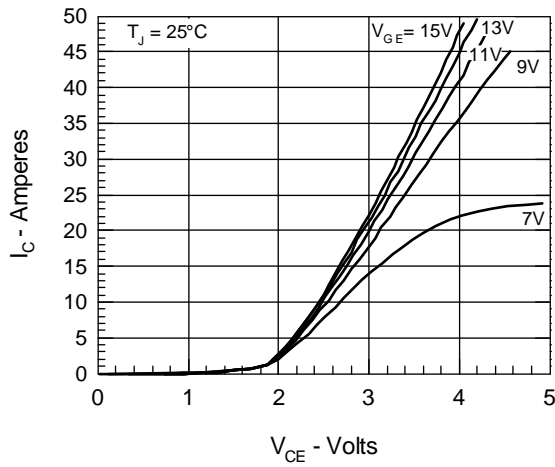


Fig. 2 Output Characteristics

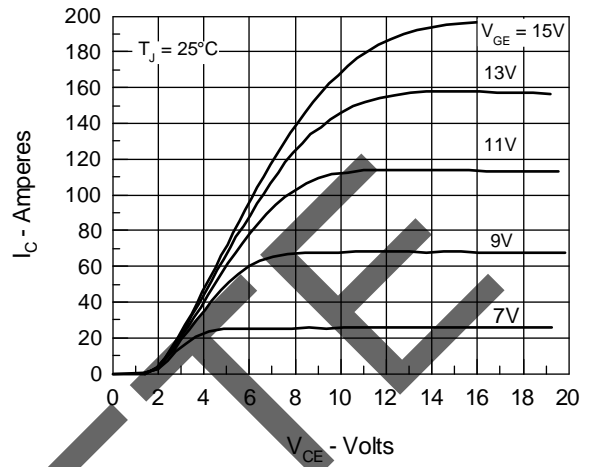


Fig. 3 Collector-Emitter Voltage vs. Gate-Emitter Voltage

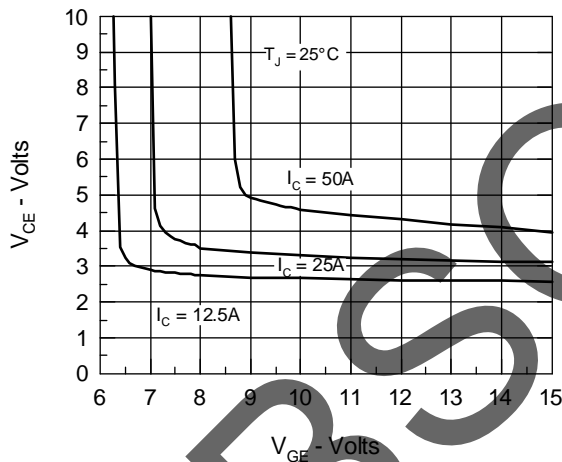


Fig. 4 Temperature Dependence of Output Saturation Voltage

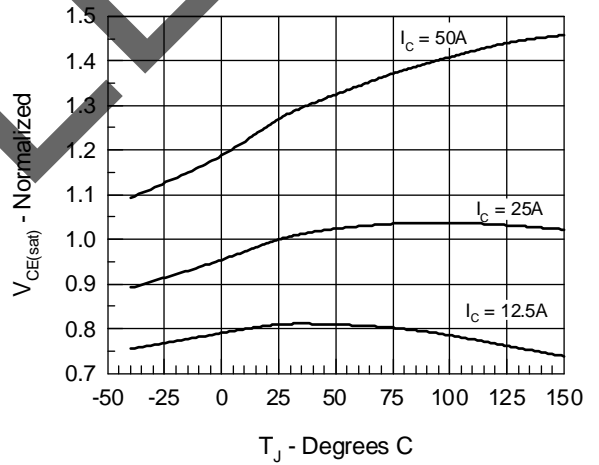


Fig. 5 Input Admittance

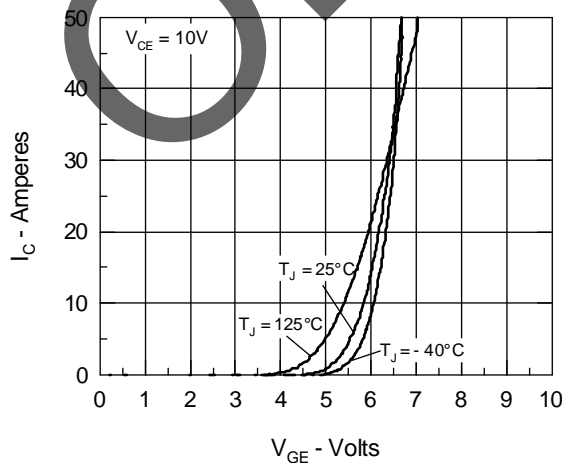


Fig. 6 Temperature Dependence of Breakdown and Threshold Voltage

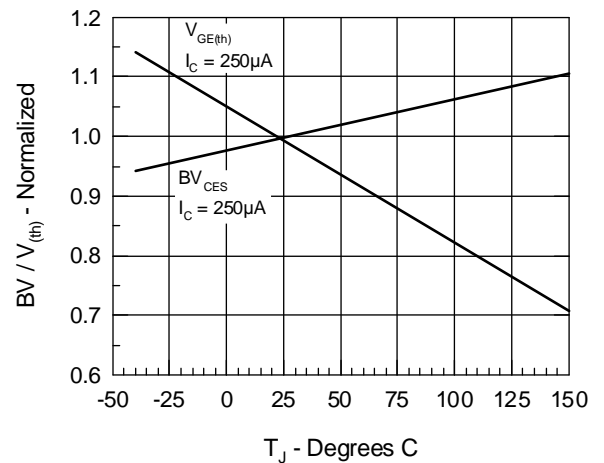


Fig.7 Gate Charge

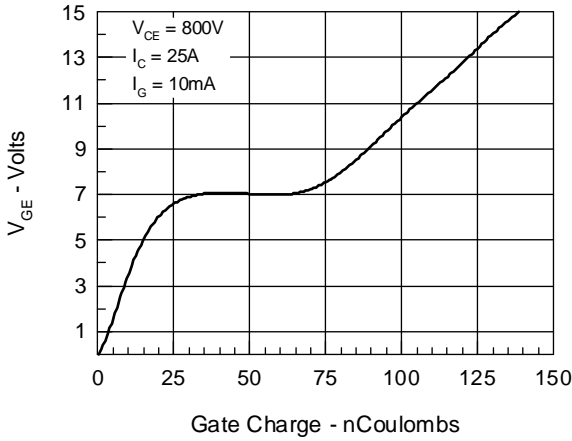


Fig.8 Turn-Off Safe Operating Area

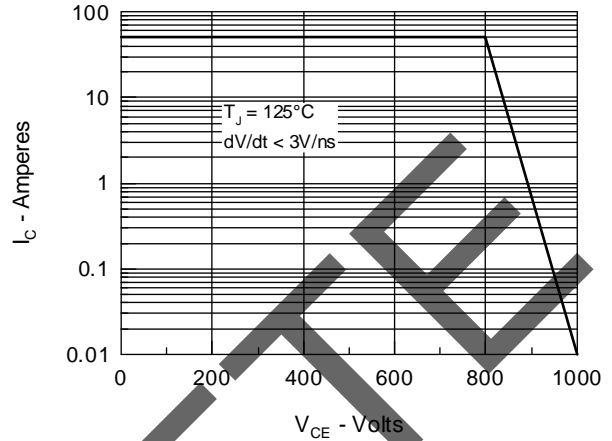


Fig.9 Capacitance Curves

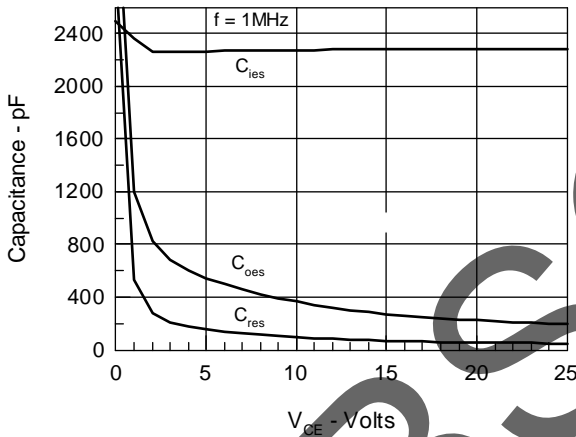
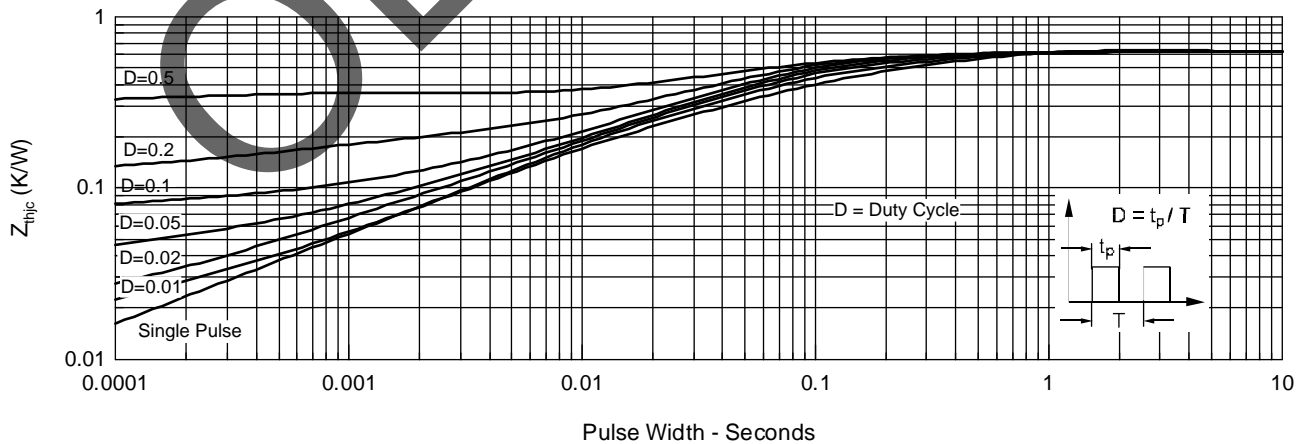


Fig.10 Transient Thermal Impedance



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4,850,072 4,931,844 5,034,796 5,063,307 5,237,481 5,381,025



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