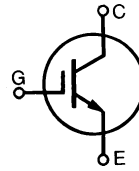


Low $V_{CE(sat)}$
High speed IGBT

IXGH/IXGM 25 N100
IXGH/IXGM 25 N100A

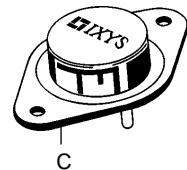
V_{CES}	I_{C25}	$V_{CE(sat)}$
1000 V	50 A	3.5 V
1000 V	50 A	4.0 V



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

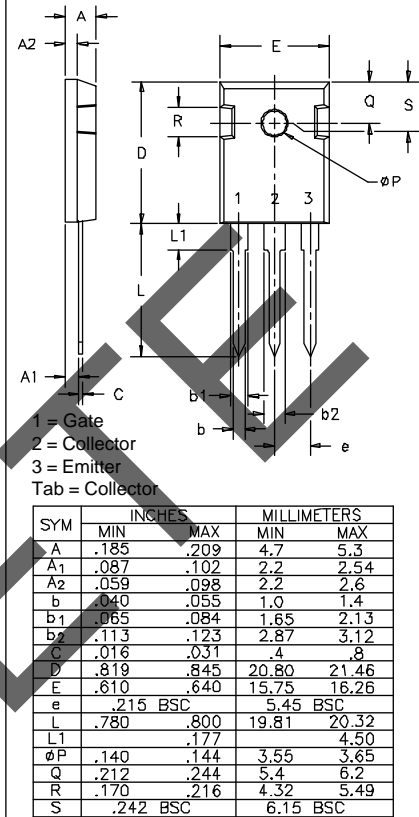
Advantages

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

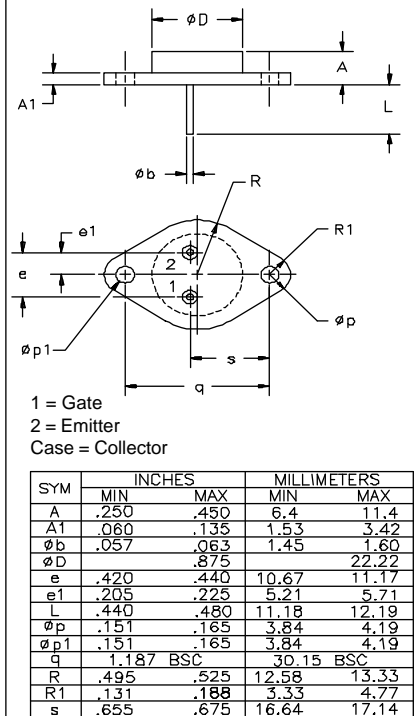
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
BV_{CES}	$I_C = 3\text{ mA}$, $V_{GE} = 0\text{ V}$	1000		V
$V_{GE(th)}$	$I_C = 250\ \mu\text{A}$, $V_{CE} = V_{GE}$	2.5		V
I_{CES}	$V_{CE} = 0.8 \cdot V_{CES}$, $V_{GE} = 0\text{ V}$ $T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$			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: 3.5 V 25N100A: 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	nC	
Q_{ge}			25	nC	
Q_{gc}			55	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	
	25N100A	10	mJ		
	25N100A	8	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

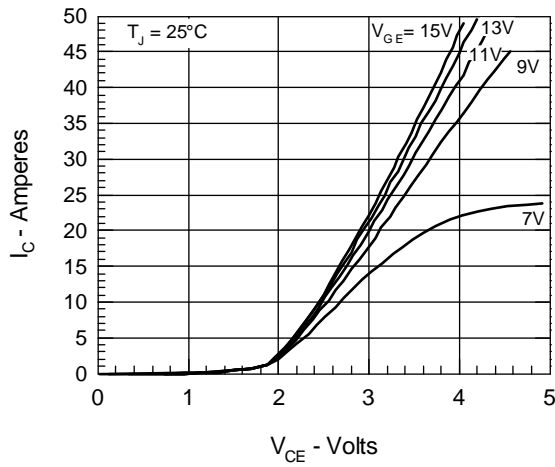


Fig. 2 Output Characteristics

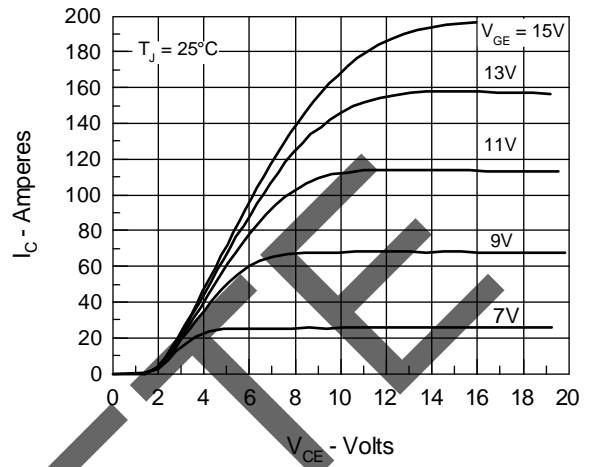


Fig. 3 Collector-Emitter Voltage vs. Gate-Emitter Voltage

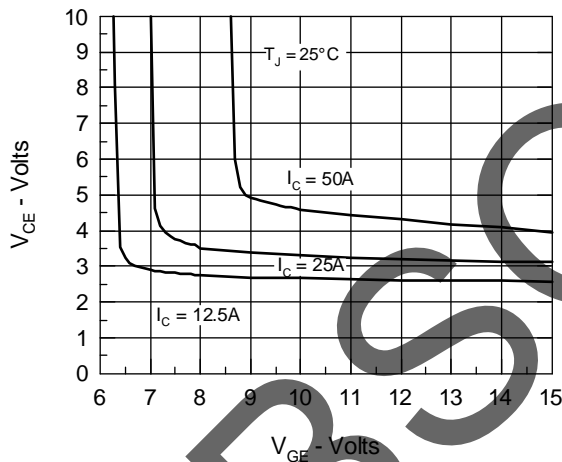


Fig. 4 Temperature Dependence of Output Saturation Voltage

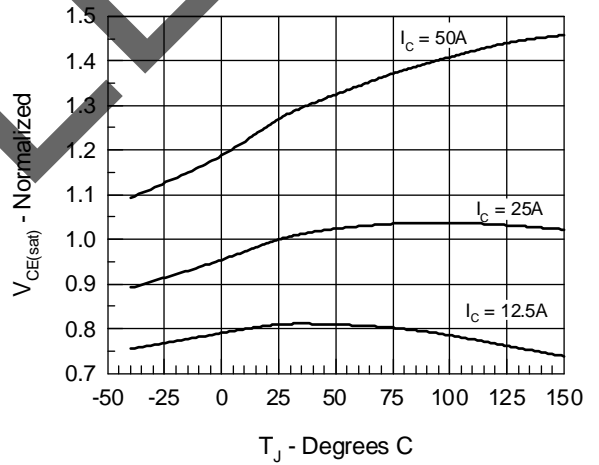


Fig. 5 Input Admittance

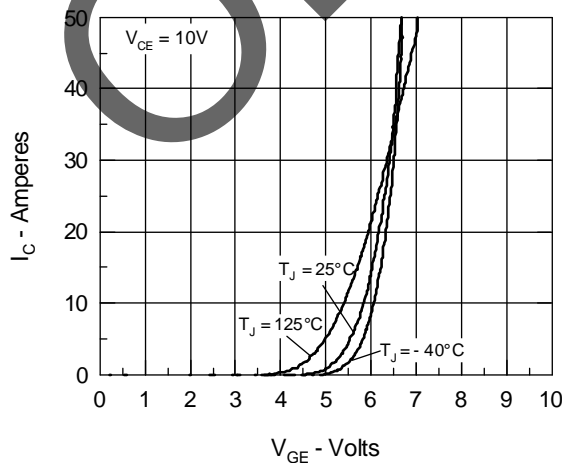


Fig. 6 Temperature Dependence of Breakdown and Threshold Voltage

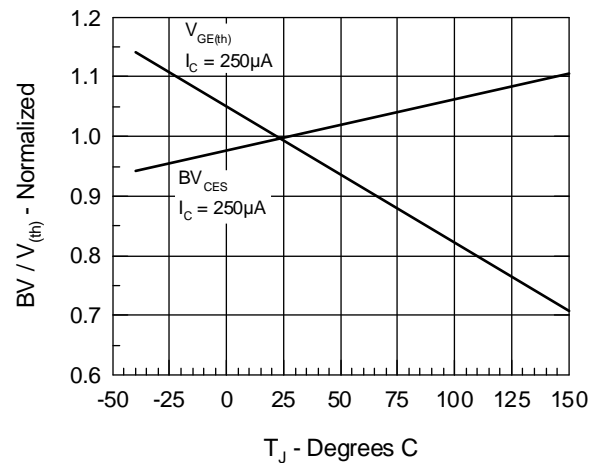


Fig.7 Gate Charge

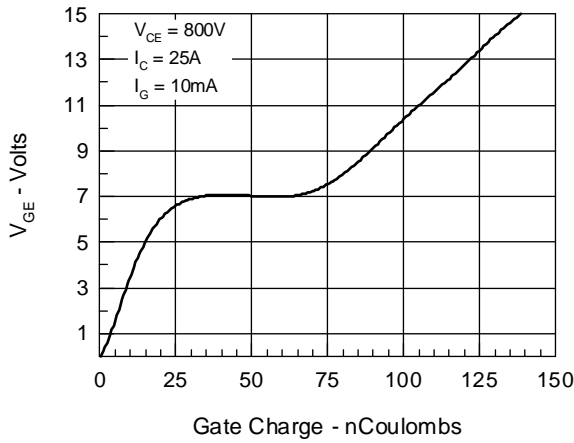


Fig.8 Turn-Off Safe Operating Area

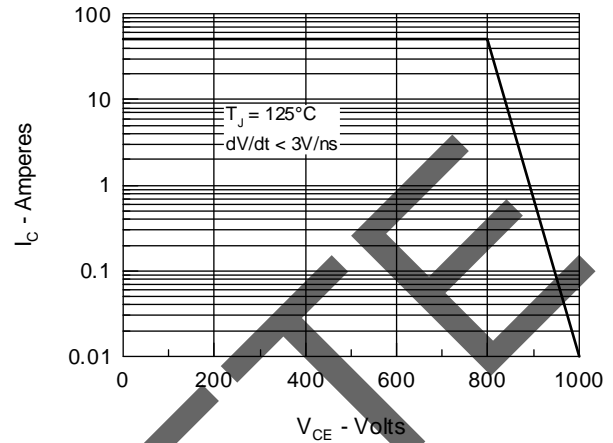


Fig.9 Capacitance Curves

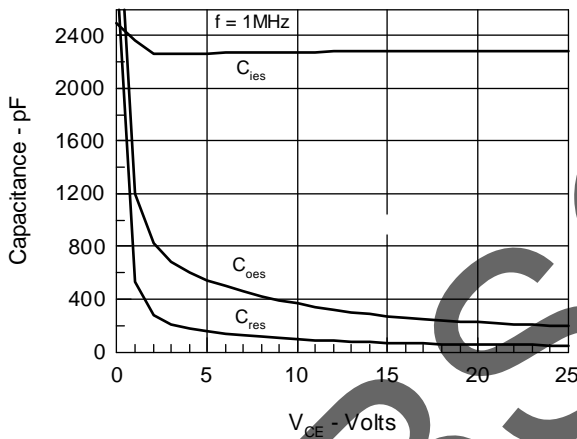
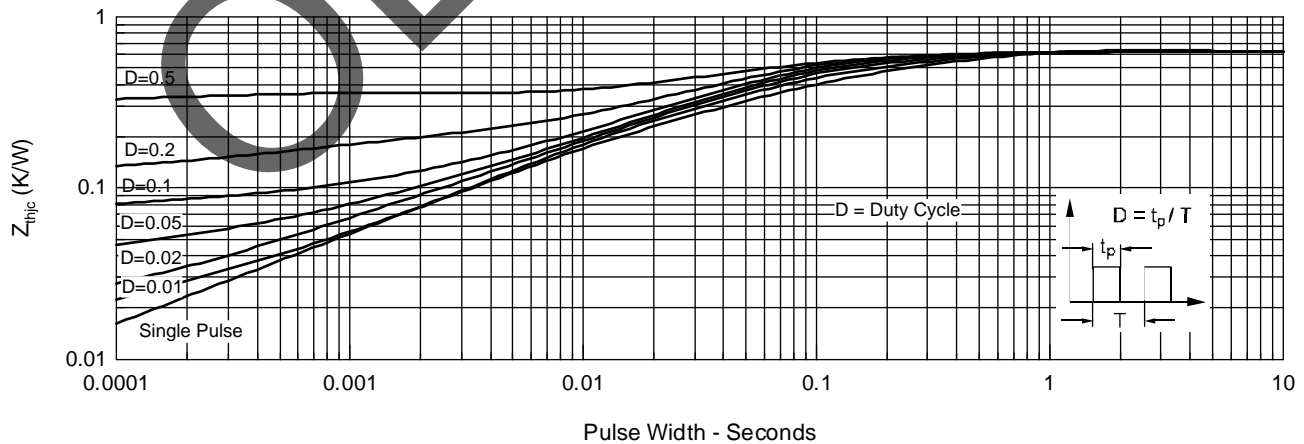


Fig.10 Transient Thermal Impedance



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



Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.