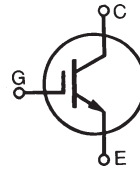


IGBT

IXGA 8N100
IXGP 8N100

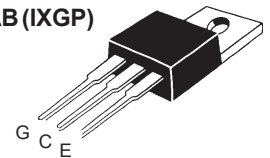
$V_{CES} = 1000\text{ V}$
 $I_{C25} = 16\text{ A}$
 $V_{CE(sat)} = 2.7\text{ V}$

Preliminary data sheet

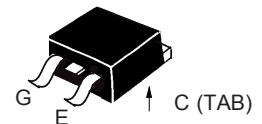


Symbol	Test Conditions	Maximum Ratings	
V_{CES}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	1000	V
V_{CGR}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GE} = 1\text{ M}\Omega$	1000	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	$T_C = 25^\circ\text{C}$	16	A
I_{C90}	$T_C = 90^\circ\text{C}$	8	A
I_{CM}	$T_C = 25^\circ\text{C}, 1\text{ ms}$	32	A
SSOA (RBSOA)	$V_{GE} = 15\text{ V}, T_{VJ} = 125^\circ\text{C}, R_G = 120\ \Omega$ Clamped inductive load	$I_{CM} = 16$ @ $0.8 V_{CES}$	A
P_C	$T_C = 25^\circ\text{C}$	54	W
T_J		-55 ... +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-55 ... +150	$^\circ\text{C}$
Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s		300	$^\circ\text{C}$
M_d	Mounting torque with screw M3 Mounting torque with screw M3.5	0.45/4 Nm/lb.in. 0.55/5 Nm/lb.in.	
Weight	TO-220	4	g
	TO-263	2	g

TO-220AB (IXGP)



TO-263 AA (IXGA)



Features

- International standard packages
JEDEC TO-220AB and TO-263AA
- Low $V_{CE(sat)}$
- for minimum on-state conduction losses
- MOS Gate turn-on
- drive simplicity

Applications

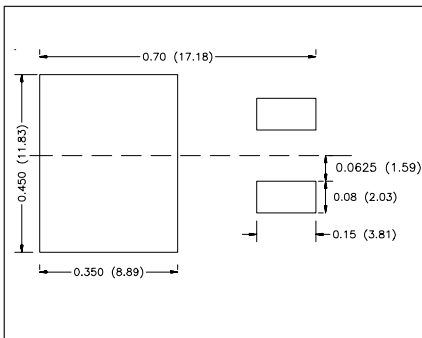
- AC motor speed control
- DC servo and robot drives
- DC choppers
- Uninterruptible power supplies (UPS)
- Switch-mode and resonant-mode power supplies
- Capacitor discharge

Advantages

- Easy to mount with one screw
- Reduces assembly time and cost
- High power density

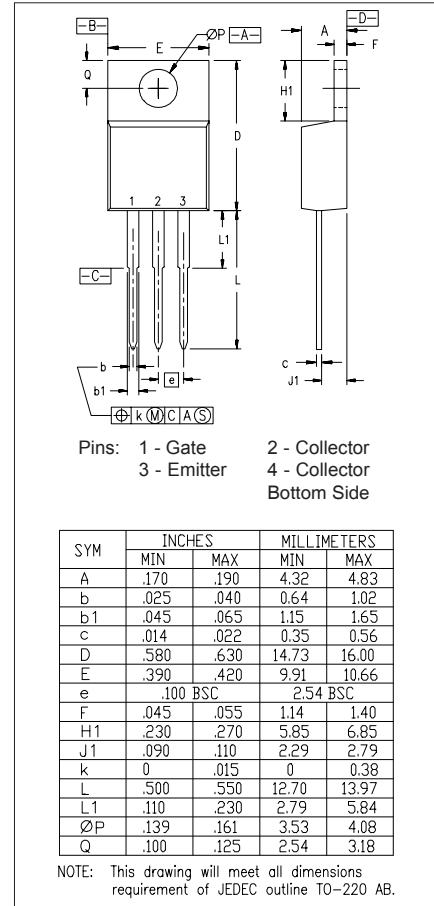
Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{CES}	$I_C = 1\text{ mA}, V_{GE} = 0\text{ V}$	1000		V
$V_{GE(th)}$	$I_C = 250\ \mu\text{A}, V_{CE} = V_{GE}$	2.5		V
I_{CES}	$V_{CE} = 0.8 V_{CES}$			25 μA
	$V_{GE} = 0\text{ V}$			250 μA
I_{GES}	$V_{CE} = 0\text{ V}, V_{GE} = \pm 20\text{ V}$			$\pm 100\text{ nA}$
$V_{CE(sat)}$	$I_C = I_{CE90}, V_{GE} = 15\text{ V}$		2.2	2.7 V

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values			
		Min.	Typ.	Max.	
g_{fs}	$I_C = I_{C90}$, $V_{CE} = 10\text{ V}$ Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$	4	7.6	S	
$I_{C(on)}$	$V_{GE} = 10\text{ V}$, $V_{CE} = 10\text{ V}$		40	A	
C_{ies}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		595	pF	
C_{oes}			34	pF	
C_{res}			10	pF	
Q_g	$I_C = I_{C90}$, $V_{GE} = 15\text{ V}$, $V_{CE} = 0.5\text{ V}_{CES}$		26.5	nC	
Q_{ge}			4.8	nC	
Q_{gc}			8.5	nC	
$t_{d(on)}$	Inductive load, $T_J = 25^\circ\text{C}$ $I_C = I_{C90}$, $V_{GE} = 15\text{ V}$ $V_{CE} = 800\text{ V}$, $R_G = R_{off} = 120\ \Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8\text{ V}_{CES}$, higher T_J or increased R_G		15	ns	
t_{ri}			30	ns	
$t_{d(off)}$			600	1000	ns
t_{fi}			390	900	ns
E_{off}			2.3	5.0	mJ
$t_{d(on)}$	Inductive load, $T_J = 125^\circ\text{C}$ $I_C = I_{C90}$, $V_{GE} = 15\text{ V}$ $V_{CE} = 800\text{ V}$, $R_G = R_{off} = 120\ \Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8\text{ V}_{CES}$, higher T_J or increased R_G		15	ns	
t_{ri}			30	ns	
E_{on}			0.5	mJ	
$t_{d(off)}$			800	ns	
t_{fi}			630	ns	
E_{off}		3.7	mJ		
R_{thJC}			2.3	KW	
R_{thCK}	TO-220		0.5	KW	

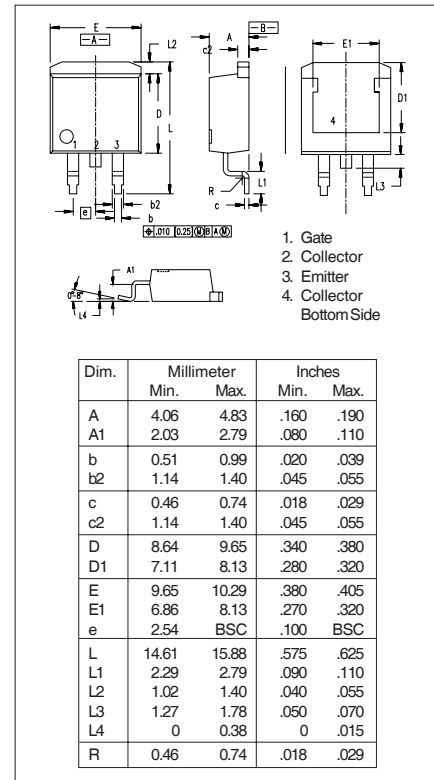


Min. Recommended Footprint
(Dimensions in inches and mm)

TO-220 AB Dimensions



TO-263 AA 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 6,306,728B1 6,259,123B1 6,306,728B1
4,850,072 4,931,844 5,034,796 5,063,307 5,237,481 5,381,025 6,404,065B1 6,162,665 6,534,343 6,583,505

Fig. 1. Output Characteristics
@ 25 Deg. C

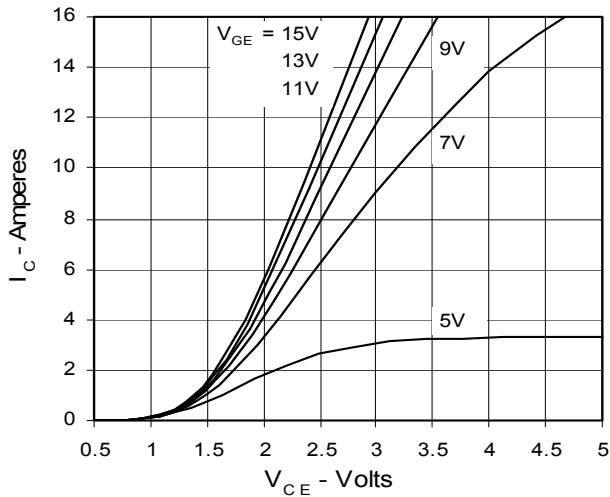


Fig. 2. Extended Output Characteristics
@ 25 deg. C

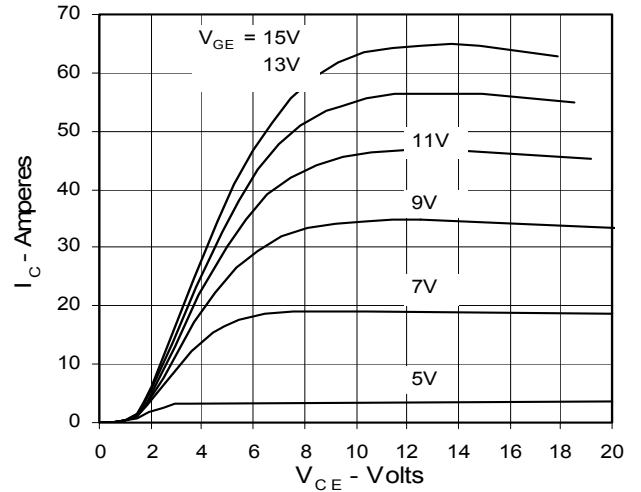


Fig. 3. Output Characteristics
@ 125 Deg. C

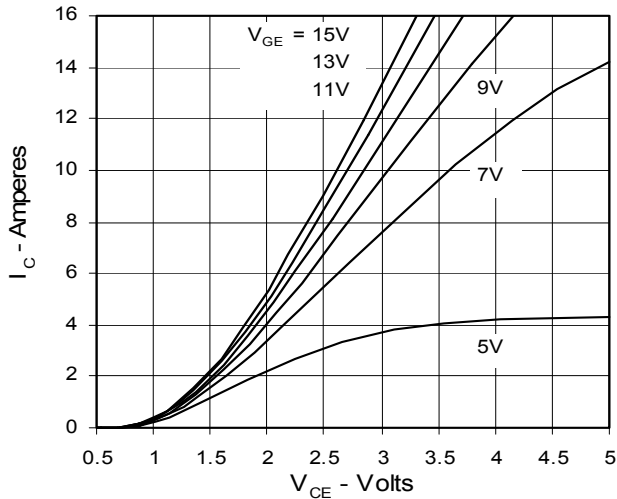


Fig. 4. Dependence of $V_{CE(sat)}$ on Temperature

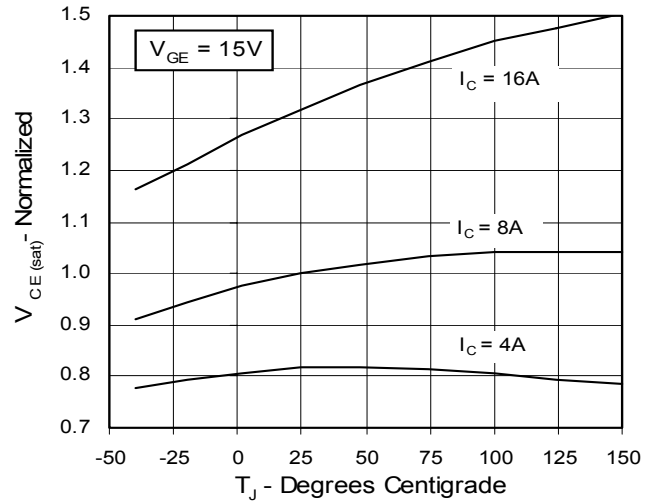


Fig. 5. Collector-to-Emitter Voltage vs. Gate-to-Emitter voltage

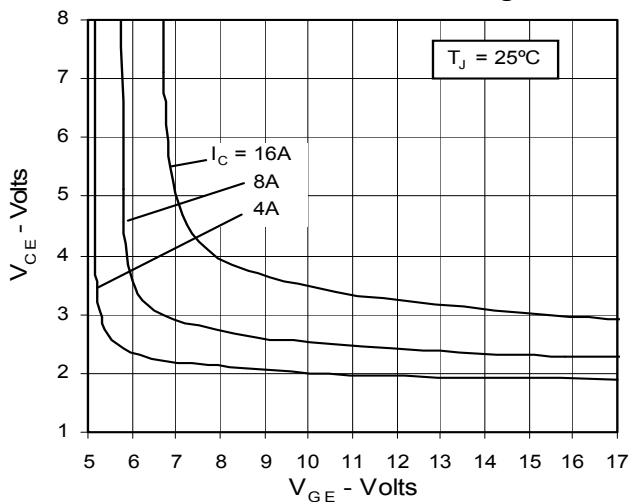


Fig. 6. Input Admittance

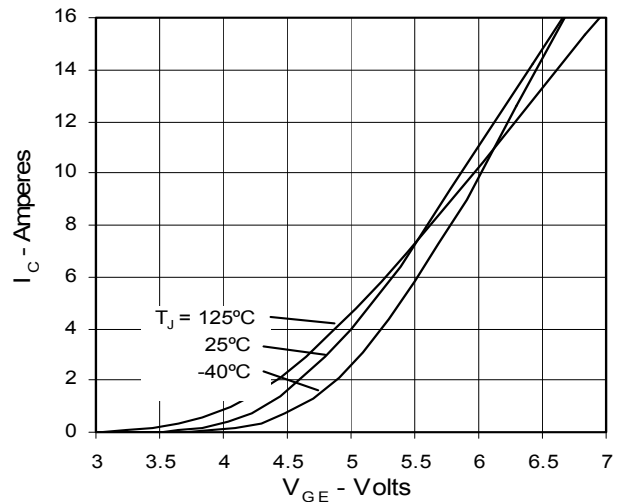


Fig. 7. Transconductance

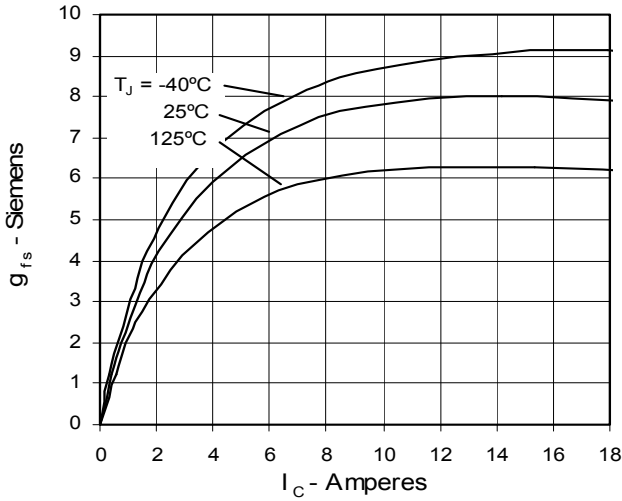


Fig. 8. Gate Charge

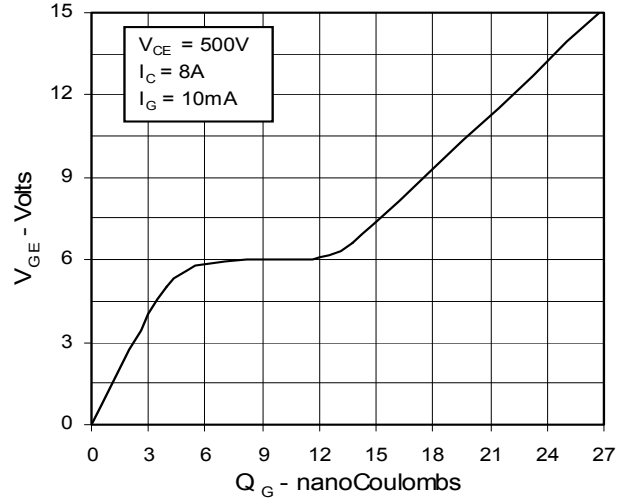


Fig. 9. Capacitance

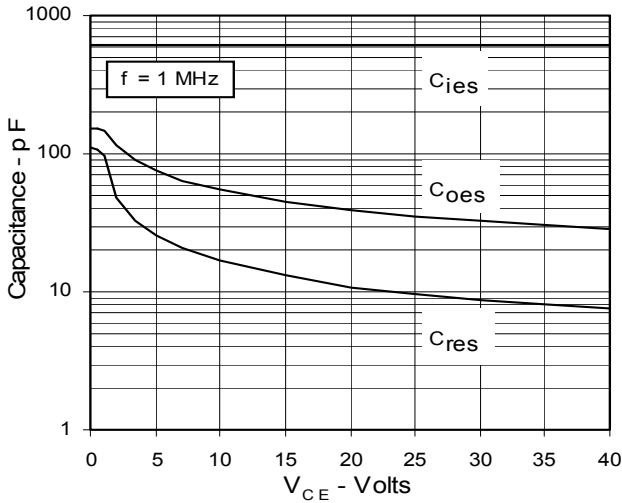
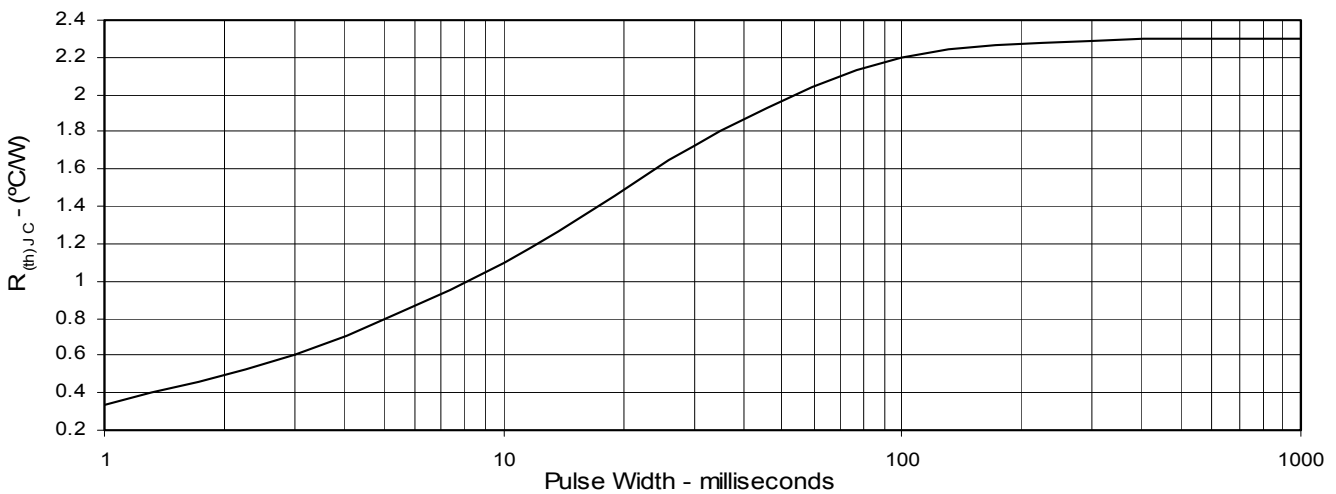


Fig. 10. Maximum Transient Thermal Resistance



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