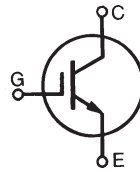


High Voltage IGBT

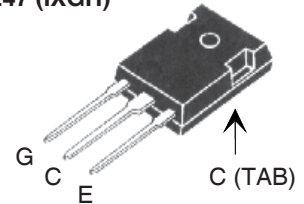
IXGH24N170 IXGT24N170



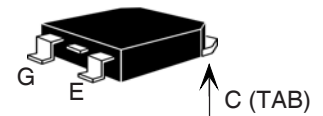
$$\begin{aligned} V_{CES} &= 1700V \\ I_{C25} &= 50A \\ V_{CE(sat)} &\leq 3.3V \\ t_{fi(typ)} &= 250ns \end{aligned}$$

Symbol	Test Conditions	Maximum Ratings	
V_{CES}	$T_C = 25^\circ C$ to $150^\circ C$	1700	V
V_{CGR}	$T_J = 25^\circ C$ to $150^\circ C$, $R_{GE} = 1M\Omega$	1700	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	$T_C = 25^\circ C$	50	A
I_{C90}	$T_C = 90^\circ C$	24	A
I_{CM}	$T_C = 25^\circ C$, 1ms	150	A
SSOA (RBSOA)	$V_{GE} = 15V$, $T_{VJ} = 125^\circ C$, $R_G = 5\Omega$ Clamped inductive load	$I_{CM} = 50$ @ $0.8 \cdot V_{CES}$	A
t_{sc} (SCSOA)	$V_{GE} = 15V$, $T_{VJ} = 125^\circ C$, $V_{CE} = 1000V$ $R_G = 5\Omega$, non repetitive	10	μs
P_C	$T_C = 25^\circ C$	250	W
T_J		-55 ... +150	$^\circ C$
T_{JM}		150	$^\circ C$
T_{stg}		-55 ... +150	$^\circ C$
T_L T_{SOLD}	1.6mm (0.062 in.) from case for 10s Plastic body for 10 seconds	300 260	$^\circ C$ $^\circ C$
M_d	Mounting torque (TO-247)	1.13/10	Nm/lb.in.
Weight	TO-247 TO-268	6 4	g g

TO-247 (IXGH)



TO-268 (IXGT)



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

Features

- International standard packages
JEDEC TO-268 and
JEDEC TO-247 AD
- High current handling capability
- MOS Gate turn-on
- drive simplicity
- Rugged NPT structure
- Molding epoxies meet UL 94 V-0
flammability classification

Applications

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

Advantages

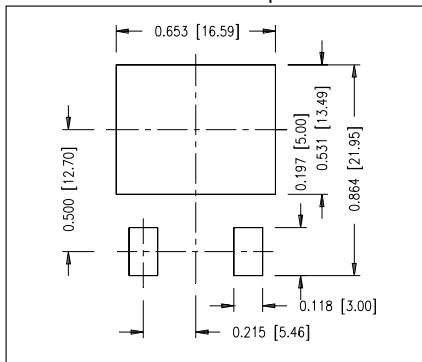
- High power density
- Suitable for surface mounting
- Easy to mount with 1 screw,
(isolated mounting screw hole)

Symbol	Test Conditions ($T_J = 25^\circ C$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{CES}	$I_C = 250\mu A$, $V_{GE} = 0V$	1700		V
$V_{GE(th)}$	$I_C = 250\mu A$, $V_{CE} = V_{GE}$	3.0		5.0 V
I_{CES}	$V_{CE} = 0.8 \cdot V_{CES}$ $V_{GE} = 0V$ $T_J = 125^\circ C$			50 μA 500 μA
I_{GES}	$V_{CE} = 0V$, $V_{GE} = \pm 20V$			± 100 nA
$V_{CE(sat)}$	$I_C = I_{C90}$, $V_{GE} = 15V$, Note 1 $T_J = 125^\circ C$		2.5 3.0	3.3 V

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$I_C = I_{C90}, V_{CE} = 10\text{V}$, Note 1	18	25	S
$I_{C(ON)}$	$V_{CE} = 10\text{V}$, $V_{GE} = 10\text{V}$		100	A
C_{ies}	$V_{CE} = 25\text{V}$, $V_{GE} = 0\text{V}$, $f = 1\text{MHz}$		2400	pF
C_{oes}			120	pF
C_{res}			33	pF
Q_g	$I_C = I_{C90}, V_{GE} = 15\text{V}$, $V_{CE} = 0.5 \cdot V_{CES}$		106	nC
Q_{ge}			18	nC
Q_{gc}			32	nC
$t_{d(on)}$	Inductive load, $T_J = 25^\circ\text{C}$ $I_C = I_{C25}, V_{GE} = 15\text{V}$ $V_{CE} = 0.8 \cdot V_{CES}, R_G = R_{off} = 5\Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8 \cdot V_{CES}$, higher T_J or increased R_G		42	ns
t_{ri}			39	ns
$t_{d(off)}$		200	400	ns
t_{fi}		250	500	ns
E_{off}		8	12	mJ
$t_{d(on)}$	Inductive load, $T_J = 125^\circ\text{C}$ $I_C = I_{C25}, V_{GE} = 15\text{V}$ $V_{CE} = 0.8 \cdot V_{CES}, R_G = R_{off} = 5\Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8 \cdot V_{CES}$, higher T_J or increased R_G		50	ns
t_{ri}			55	ns
E_{on}		2.0		mJ
$t_{d(off)}$		200		ns
t_{fi}		360		ns
E_{off}		12		mJ
R_{thJC}			0.50	$^\circ\text{C/W}$
R_{thCS}	(TO-247)		0.25	$^\circ\text{C/W}$

Note 1: Pulse test, $t \leq 300\mu\text{s}$, duty cycle, $d \leq 2\%$.

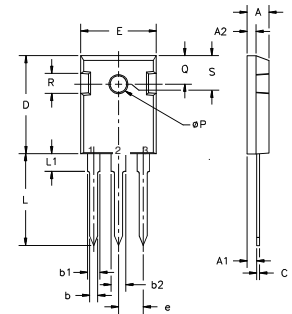
Min Recommended Footprint



ADVANCE TECHNICAL INFORMATION

The product presented herein is under development. The Technical Specifications offered are derived from a subjective evaluation of the design, based upon prior knowledge and experience, and constitute a "considered reflection" of the anticipated result. IXYS reserves the right to change limits, test conditions, and dimensions without notice.

TO-247 AD Outline





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