

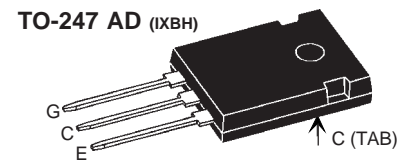
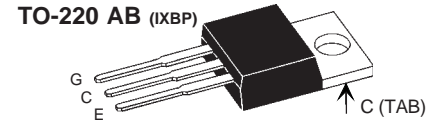
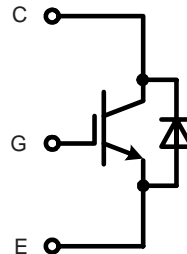
High Voltage BIMOSFET™

IXBP 5N160 G
IXBH 5N160 G

I_{C25} = 5.7 A
 V_{CES} = 1600 V
 $V_{CE(sat)}$ = 4.9 V
 t_f = 70 ns

Monolithic Bipolar MOS Transistor

Preliminary data sheet



A = Anode, C = Cathode, TAB = Cathode

| IGBT | | |
|-----------------------|---|-----------------|
| Symbol | Conditions | Maximum Ratings |
| V_{CES} | $T_{VJ} = 25^{\circ}\text{C}$ to 150°C | 1600 V |
| V_{GES} | | ± 20 V |
| I_{C25} | $T_C = 25^{\circ}\text{C}$ | 5.7 A |
| I_{C90} | $T_C = 90^{\circ}\text{C}$ | 3.5 A |
| I_{CM} V_{CEK} | $V_{GE} = 10/0$ V; $R_G = 47 \Omega$; $T_{VJ} = 125^{\circ}\text{C}$ RBSOA, Clamped inductive load; $L = 100 \mu\text{H}$ | 6 A |
| | | $0.8V_{CES}$ |
| P_{tot} | $T_C = 25^{\circ}\text{C}$ | 68 W |

Features

- High Voltage BIMOSFET™
 - substitute for high voltage MOSFETs with significantly lower voltage drop
 - MOSFET compatible control 10 V turn on gate voltage
 - fast switching for high frequency operation
 - reverse conduction capability
- industry standard package
 - TO-220AB
 - TO-247AD
- epoxy meets UL94V-0

| Symbol | Conditions | Characteristic Values ($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified) | | | |
|---|--|--|-------------------------|------------------------------------|----|
| | | min. | typ. | max. | |
| $V_{CE(sat)}$ | $I_C = 3$ A; $V_{GE} = 15$ V; $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$ | | 4.9 5.6 | V V | |
| $V_{GE(th)}$ | $I_C = 0.3$ mA; $V_{GE} = V_{CE}$ | 3.5 | | 5.5 V | |
| I_{CES} | $V_{GE} = 0$ V; $V_{CE} = V_{CES}$; $T_{VJ} = 25^{\circ}\text{C}$ $V_{CE} = 0.8V_{CES}$; $T_{VJ} = 125^{\circ}\text{C}$ | | 50 | 150 μA μA | |
| I_{GES} | $V_{CE} = 0$ V; $V_{GE} = \pm 20$ V | | | 100 nA | |
| $t_{d(on)}$ t_r $t_{d(off)}$ t_f | Inductive load, $T_{VJ} = 125^{\circ}\text{C}$ $V_{CE} = 960$ V; $I_C = 3$ A $V_{GE} = 10/0$ V; $R_G = 47 \Omega$ | | 140 200 120 70 | ns ns ns ns | |
| C_{ies} | | $V_{CE} = 25$ V; $V_{GE} = 0$ V; $f = 1$ MHz | | 325 | pF |
| Q_{Gon} | | $V_{CE} = 600$ V; $V_{GE} = 10$ V; $I_C = 3$ A | | 26 | nC |
| V_F | | (reverse conduction); $I_F = 3$ A | | 6 | V |
| R_{thJC} | | | | 1.85 K/W | |

Applications

- switched mode power supplies
- DC-DC converters
- resonant converters
- lamp ballasts
- laser generators, x ray generators

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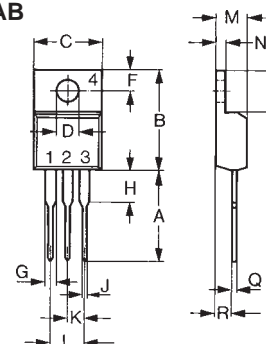
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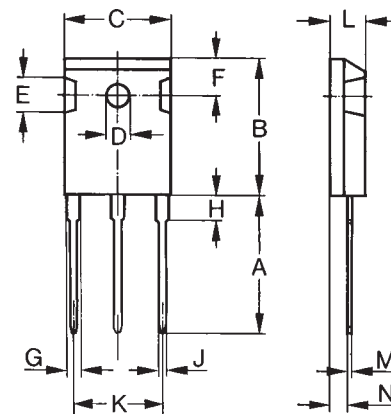
Component

| Symbol | Conditions | Maximum Ratings | |
|-----------|-----------------|-----------------|--------|
| T_{VJ} | | -55...+150 | °C |
| T_{stg} | | -55...+125 | °C |
| M_D | mounting torque | (TO-220) | 0.6 Nm |
| | | (TO-247) | 1.2 Nm |

| Symbol | Conditions | Characteristic Values | | |
|------------|------------------------|-----------------------|------|------|
| | | min. | typ. | max. |
| R_{thCH} | with heatsink compound | | 0.25 | K/W |
| Weight | (TO-220) | | 2 | g |
| | (TO-247) | | 6 | g |

Dimensions
TO-220 AB


| Dim. | Millimeter | | Inches | |
|------|------------|-------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 12.70 | 13.97 | 0.500 | 0.550 |
| B | 14.73 | 16.00 | 0.580 | 0.630 |
| C | 9.91 | 10.66 | 0.390 | 0.420 |
| D | 3.54 | 4.08 | 0.139 | 0.161 |
| E | 5.85 | 6.85 | 0.230 | 0.270 |
| F | 2.54 | 3.18 | 0.100 | 0.125 |
| G | 1.15 | 1.65 | 0.045 | 0.065 |
| H | 2.79 | 5.84 | 0.110 | 0.230 |
| J | 0.64 | 1.01 | 0.025 | 0.040 |
| K | 2.54 | BSC | 0.100 | BSC |
| M | 4.32 | 4.82 | 0.170 | 0.190 |
| N | 1.14 | 1.39 | 0.045 | 0.055 |
| Q | 0.35 | 0.56 | 0.014 | 0.022 |
| R | 2.29 | 2.79 | 0.090 | 0.110 |

TO-247 AD


| Dim. | Millimeter | | Inches | |
|------|------------|-------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 19.81 | 20.32 | 0.780 | 0.800 |
| B | 20.80 | 21.46 | 0.819 | 0.845 |
| C | 15.75 | 16.26 | 0.610 | 0.640 |
| D* | 3.55 | 3.65 | 0.140 | 0.144 |
| E | 4.32 | 5.49 | 0.170 | 0.216 |
| F | 5.4 | 6.2 | 0.212 | 0.244 |
| G | 1.65 | 2.13 | 0.065 | 0.084 |
| H | - | 4.5 | - | 0.177 |
| J | 1.0 | 1.4 | 0.040 | 0.055 |
| K | 10.8 | 11.0 | 0.426 | 0.433 |
| L | 4.7 | 5.3 | 0.185 | 0.209 |
| M | 0.4 | 0.8 | 0.016 | 0.031 |
| N | 1.5 | 2.49 | 0.087 | 0.102 |



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