## BT136

Marking
TO-220AB

## BT136 <br> XYY

Part No.: BT136
Year Code: X(2019---A,2020---B...2030---L)
Month Code: $\mathrm{YY}(01 \sim 12)$

PIN CONFIGURATION:
1.MAIN TERMINAL 1
2.MAIN TERMINAL 2
3.GATE

Absolute maximum ratings

| Parameter | Symbol | Value | Unit | Test condition |
| :--- | :---: | :---: | :---: | :---: |
| peak repetitive off-stage voltage | $\mathrm{V}_{\mathrm{DRM}}, \mathrm{V}_{\mathrm{RRM}}$ | 600 | V |  |
| on-state RMS current | $\mathrm{I}_{\mathrm{T}}(\mathrm{RMS})$ | 4 | A | $\mathrm{TL} \leq 660 \mathrm{C}$ |
| NON repetitive surge peak on-state current | $\mathrm{I}_{\mathrm{TSM}}$ | 25 | A | $\mathrm{Tp}=20 \mathrm{~ms}, \mathrm{Tj}=25{ }^{\circ} \mathrm{C}$ |
| critical rate of rise on-state current | $\mathrm{dl} / \mathrm{dt}\left(\mathrm{Q}_{1-3}\right)$ | 50 | $\mathrm{~A} / \mu \mathrm{s}$ | $\mathrm{I}_{\mathrm{TM}}=20 \mathrm{~A}, \mathrm{~T}_{\mathrm{G}}=0.2 \mathrm{~A}$ |
| peak gate current | I | GM | 2 | A |
| average gate power dissipation | $\mathrm{PG}_{\mathrm{G}}(\mathrm{AV})$ | 0.5 | W |  |
| storage temperature range | Tstg | -40 to +150 | ${ }^{\circ}{ }^{\circ} \mathrm{C}$ |  |
| operating junction temperature range | Tj | 125 | ${ }^{\circ} \mathrm{C}$ |  |

Electrical characteristics ( $\mathrm{Tj}=25^{\circ} \mathrm{C}$ ) unless otherwise specified

| Parameter | Symbol | Value | Unit | Test condition |
| :---: | :---: | :---: | :---: | :---: |
| gate trigger current | $\mathrm{I}_{\text {GT }}$ | $\leq 10$ | mA | $\mathrm{T} 2+\mathrm{G}+\mathrm{V}_{\mathrm{D}}=12 \mathrm{~V}, \mathrm{I}_{\mathrm{T}}=0.1 \mathrm{~A}$ |
|  |  | $\leq 10$ | mA | T2+G- $\mathrm{V}_{\mathrm{D}}=12 \mathrm{~V}, \mathrm{I}_{\mathrm{T}}=0.1 \mathrm{~A}$ |
|  |  | $\leq 10$ | mA | T2-G- $\mathrm{V}_{\mathrm{D}}=12 \mathrm{~V}, \mathrm{I}_{\mathrm{T}}=0.1 \mathrm{~A}$ |
|  |  | $\leq 25$ | mA | T2-G+ $\mathrm{V}_{\mathrm{D}}=12 \mathrm{~V}, \mathrm{I}_{\mathrm{T}}=0.1 \mathrm{~A}$ |
| gate trigger voltage | $\mathrm{V}_{\mathrm{GT}}$ | $\leq 1.5$ | V | $\mathrm{V}_{\mathrm{D}}=12 \mathrm{~V}, \mathrm{I}_{\mathrm{T}}=0.1 \mathrm{~A}$ |
| hold current | $\mathrm{I}_{\mathrm{H}}$ | $\leq 30$ | mA | $\mathrm{V}_{\mathrm{D}}=12 \mathrm{~V}, \mathrm{I}_{\mathrm{T}}=0.1 \mathrm{~A}$ |
| critical rate of rise off-state voltage | $\mathrm{dv} / \mathrm{dt}$ | $\geq 50$ | $\mathrm{V} / \mu \mathrm{s}$ | $\mathrm{V}_{\mathrm{D}}=67 \% \mathrm{~V}_{\text {DRM }}$ |
| on-state voltage | $\mathrm{V}_{\text {TM }}$ | $\leq 1.7$ | V | $\mathrm{I}_{\mathrm{T}}=5 \mathrm{~A}$ |
| off-state leakage current | IDRM | $\leq 0.5$ | mA | $\mathrm{V}_{\mathrm{D}}=\mathrm{V}_{\text {DRM }} ; \mathrm{Tj}=125^{\circ} \mathrm{C}$ |
| thermal resistance | Rth(j-a) | 60 | ${ }^{\circ} \mathrm{C} / \mathrm{W}$ |  |
|  | Rth(j-c) | $\leq 3.7$ |  |  |

## PACKAGE TO-220 AB



| Unit (mm) | MIN | MAX |
| :---: | :---: | :---: |
| A | 10.15 | 10.2 |
| B | 14.9 | 15.5 |
| C | 4.5 | 4.7 |
| D | 1.27 | 1.35 |
| E | 0.65 | 0.85 |
| F | 0.4 | 0.5 |
| G | 1.26 | 1.29 |
| H | 3.32 | 3.78 |
| L | 13.67 | 14.67 |
| N | 2.24 | 2.54 |
| $\Phi \mathrm{P}$ | 3.84 | 3.87 |

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