M3P75A-80 thru M3P75A-160

## Silicon Standard Recovery Diode

## Features

- Terminals and the mounting plate are electrically isolated
- Types up to 1600 V VRRM
- Modules can be installed in the same cooling fin as other modules, thus saving installation space
- Diode chips are coated with a glass of zinc oxide, making them highly resistant to temperature and huminity variation
- 6 diode chips are connected to the 3-phase bridge rectifying circuit inside the module; a cost effective feature


## Applications

- Inverters for AC motors
- Power supply units for DC motors
- DC power supply units for battery cl
- General purpose DC power supply

Maximum ratings, at $\mathrm{T}_{\mathrm{j}}=25^{\circ} \mathrm{C}$, unless otherwise specified

| Parameter | Symbol | Conditions | M3P75A-80 | M3P75A-160 | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Repetitive peak reverse voltage | $\mathrm{V}_{\text {RRM }}$ | $\mathrm{T}_{\mathrm{J}}=25^{\circ} \mathrm{C}, \mathrm{I}_{\mathrm{R}}=25 \mu \mathrm{~A}$ | 800 | 1600 | V |
| Non-repetitive peak reverse voltage | $\mathrm{V}_{\text {RSM }}$ | $\mathrm{T}_{\mathrm{J}}=25^{\circ} \mathrm{C}, \mathrm{I}_{\mathrm{R}}=25 \mu \mathrm{~A}$ | 880 | 1700 | V |
| Continuous forward current | $\mathrm{I}_{\mathrm{F}}$ | $\mathrm{T}_{\mathrm{C}} \leq 103^{\circ} \mathrm{C}$ | 75 | 75 | A |
| Surge non-repetitive forward current, Half Sine Wave | $\mathrm{I}_{\mathrm{F}, \mathrm{SM}}$ | $\mathrm{T}_{\mathrm{C}}=25^{\circ} \mathrm{C}, \mathrm{t}_{\mathrm{p}}=8.3 \mathrm{~ms}$ | 1000 | 1000 | A |
| $\mathrm{I}^{2} \mathrm{t}$ | $1^{2} \mathrm{t}$ |  | 4400 | 4400 | $A^{2} S$ |
| Operating temperature | $\mathrm{T}_{\mathrm{j}}$ |  | -40 to 150 | -40 to 150 | ${ }^{\circ} \mathrm{C}$ |
| Storage temperature | $\mathrm{T}_{\text {stg }}$ |  | -40 to 125 | -40 to 125 | ${ }^{\circ} \mathrm{C}$ |
| Tightening torque |  |  | $25 \pm 2$ | $25 \pm 2$ | kg-cm |
| Vibration resistance |  |  | 5 | 5 | G |
| Dielectric strength |  |  | 2000 VAC 1 min | 2000 VAC 1 min |  |
| Net weight |  |  | 133 | 133 | g |

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

| Parameter | Symbol | Conditions | M3P75A-80 | M3P75A-160 | Unit |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Diode forward voltage | $\mathrm{V}_{\mathrm{F}}$ | $\mathrm{I}_{\mathrm{F}}=75 \mathrm{~A}, \mathrm{~T}_{\mathrm{j}}=25^{\circ} \mathrm{C}$ |  |  | V |
| Reverse current |  | $\mathrm{V}_{\mathrm{R}}=\mathrm{V}_{\mathrm{RRM},} \mathrm{T}_{\mathrm{j}}=150^{\circ} \mathrm{C}$ | 10 | 10 | mA |
| Thermal characteristics |  |  |  |  |  |
| Thermal resistance, junction - case | $\mathrm{R}_{\text {thJc }}$ |  | 0.25 | 0.25 | ${ }^{\circ} \mathrm{C} / \mathrm{W}$ |



Surge Current


Forward Characteristics


