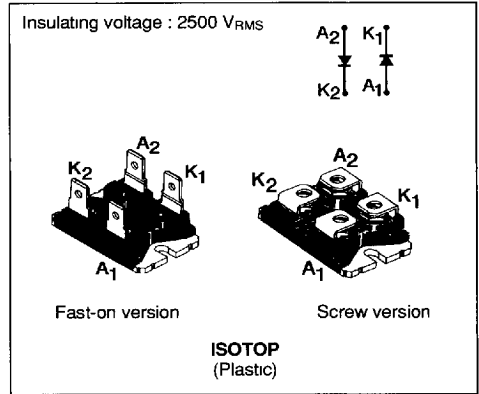


FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 45pF



DESCRIPTION

Double rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS

| Symbol | Parameter | | Value | Unit |
|------------------------------------|--|---|---------------|------|
| V _{RRM} | Repetitive Peak Reverse Voltage | | 1200 | V |
| V _{RSM} | Non Repetitive Peak Reverse Voltage | | 1200 | V |
| I _{FRM} | Repetitive Peak Forward Current | t _p ≤ 10μs | 375 | A |
| I _{F(RMS)} | RMS Forward Current | per leg | 70 | A |
| I _{F(AV)} | Average Forward Current | T _{case} = 55°C δ = 0.5 per leg | 30 | A |
| I _{FSM} | Surge Non Repetitive Forward Current | t _p = 10ms Sinusoidal | 200 | A |
| P | Power Dissipation | T _{case} = 55°C per leg | 60 | W |
| T _{stg} T _J | Storage and Junction Temperature Range | | - 40 to + 150 | °C |

THERMAL RESISTANCES

| Symbol | Parameter | | Value | Unit |
|-----------------------|---------------|------------------|------------|------|
| R _{th (j-c)} | Junction-case | per leg total | 1.5 0.8 | °C/W |
| R _{th (c)} | Coupling | | 0.1 | °C/W |

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ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

| Symbol | Test Conditions | | Min. | Typ. | Max. | Unit |
|--------|---------------------------|--------------------|------|------|------|---------------|
| I_R | $T_J = 25^\circ\text{C}$ | $V_R = V_{RRM}$ | | | 100 | μA |
| | $T_J = 100^\circ\text{C}$ | | | | 5 | mA |
| V_F | $T_J = 25^\circ\text{C}$ | $I_F = 30\text{A}$ | | | 1.9 | V |
| | $T_J = 100^\circ\text{C}$ | | | | 1.8 | |

RECOVERY CHARACTERISTICS

| Symbol | Test Conditions | | | Min. | Typ. | Max. | Unit |
|----------|--------------------------|---------------------|-------------------------------------|-------------------------|------|------|------|
| t_{rr} | $T_J = 25^\circ\text{C}$ | $I_F = 1\text{A}$ | $di_F/dt = -15\text{A}/\mu\text{s}$ | $V_R = 30\text{V}$ | | 165 | ns |
| | | $I_F = 0.5\text{A}$ | $I_R = 1\text{A}$ | $I_{rr} = 0.25\text{A}$ | | 70 | |

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

| Symbol | Test Conditions | | | Min. | Typ. | Max. | Unit |
|-----------|--------------------------------------|---|--|------|------|------|------|
| t_{IRM} | $di_F/dt = -120\text{A}/\mu\text{s}$ | $V_{CC} = 200\text{V}$ $I_F = 30\text{A}$ $L_p \leq 0.05\mu\text{H}$ $T_J = 100^\circ\text{C}$ See figure 1 | | | | 200 | ns |
| | $di_F/dt = -240\text{A}/\mu\text{s}$ | | | | 120 | | |
| I_{RM} | $di_F/dt = -120\text{A}/\mu\text{s}$ | | | | | 20 | A |
| | $di_F/dt = -240\text{A}/\mu\text{s}$ | | | | 22 | | |

TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

| Symbol | Test Conditions | | | Min. | Typ. | Max. | Unit |
|-----------------------------|-------------------------------------|------------------------|-------------------|------|------|------|------|
| $C = \frac{V_{RP}}{V_{CC}}$ | $T_J = 100^\circ\text{C}$ | $V_{CC} = 200\text{V}$ | $I_F = I_{F(AV)}$ | | 3.3 | 4.5 | |
| | $di_F/dt = -30\text{A}/\mu\text{s}$ | $L_p = 5\mu\text{H}$ | See figure 2 | | | | |

To evaluate the conduction losses use the following equations :

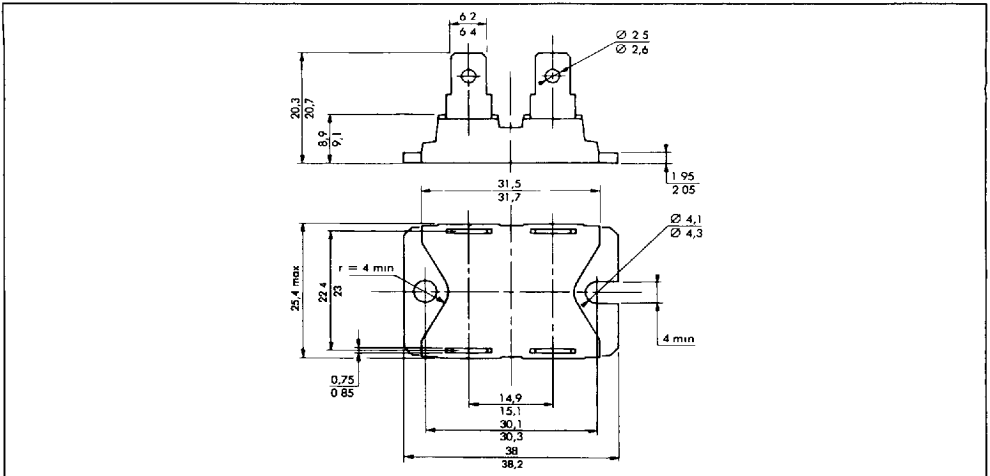
$$V_F = 1.47 + 0.010 I_F$$

$$P = 1.47 \times I_{F(AV)} + 0.010 I_{F(RMS)}^2$$

PACKAGE MECHANICAL DATA

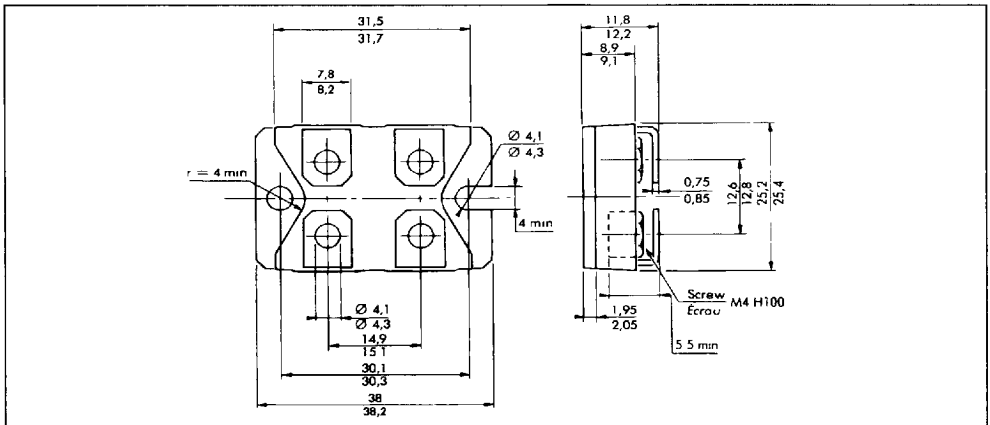
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ISOTOP Plastic : FAST-ON VERSION



Marking : type number

ISOTOP Plastic : SCREW VERSION



Marking type number + Suffix V

Recommended screw torque value 13 ± 2 kg cm
 Maximum screw torque value : 15kg.cm.

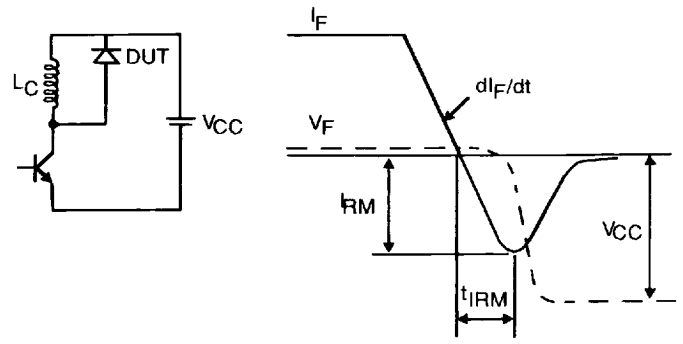


Figure 1 : Turn-off switching characteristics (without series inductance).

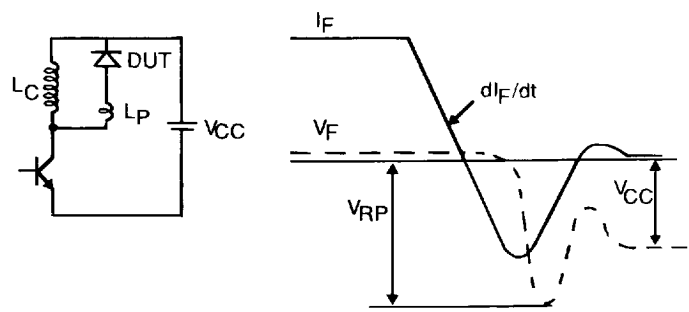


Figure 2 : Turn-off switching characteristics (with series inductance).