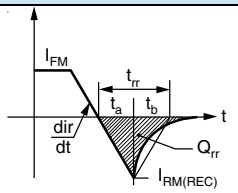
## ELECTRICAL SPECIFICATIONS

| PARAMETER | SYMBOL | TEST CONDITIONS | | VALUES | UNITS |
|---|---|---|---|---|---|
| Maximum forward voltage drop | $V_{FM}$ | 20 A, $T_J$ = 25 °C | | 1.30 | V |
| | | 60 A, $T_J$ = 25 °C | | 1.67 | |
| Forward slope resistance | $r_t$ | | | 12.5 | mΩ |
| Threshold voltage | $V_{F(TO)}$ | $T_J$ = 150 °C | | 0.9 | V |
| Maximum reverse leakage current | $I_{RM}$ | $T_J$ = 25 °C | $V_R$ = Rated $V_{RRM}$ | 0.1 | mA |
| | | $T_J$ = 150 °C | | 5.0 | |

## RECOVERY CHARACTERISTICS

| PARAMETER | SYMBOL | TEST CONDITIONS | VALUES | UNITS | |
|---|---|---|---|---|---|
| Reverse recovery time | $t_{rr}$ | $I_F$ at 20 Apk<br>100 A/µs<br>25 °C | 160 | ns |  |
| Reverse recovery current | $I_{rr}$ | | 10 | A | |
| Reverse recovery charge | $Q_{rr}$ | | 1.25 | µC | |
| Snap factor | S | Typical | 0.6 | | |



## THERMAL - MECHANICAL SPECIFICATIONS

| PARAMETER | | SYMBOL | TEST CONDITIONS | VALUES | UNITS |
|---|---|---|---|---|---|
| Maximum junction and storage temperature range | | $T_J$, $T_{Stg}$ | | - 40 to 150 | °C |
| Maximum thermal resistance, junction to case | | $R_{thJC}$ | DC operation | 1.5 | °C/W |
| Maximum thermal resistance, junction to ambient | | $R_{thJA}$ | | 62 | |
| Typical thermal resistance, case to heatsink | | $R_{thCS}$ | Mounting surface, smooth and greased | 1.5 | |
| Approximate weight | | | | 2 | g |
| | | | | 0.07 | oz. |
| Mounting torque | minimum | | | 6 (5) | kgf · cm (lbf · in) |
| | maximum | | | 12 (10) | |
| Marking device | | | Case style TO-220 FULL-PAK | 20ETF02FP | |
| | | | | 20ETF04FP | |
| | | | | 20ETF06FP | |

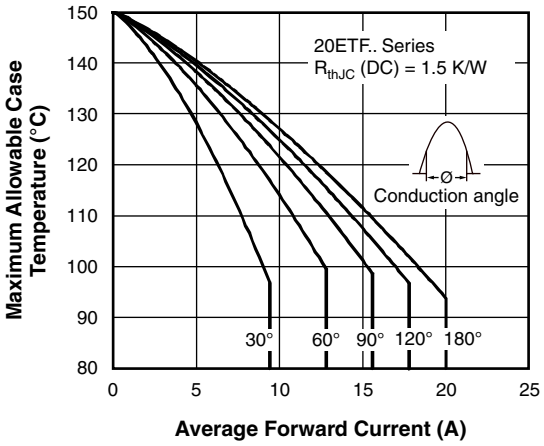



Fig. 1 - Current Rating Characteristics

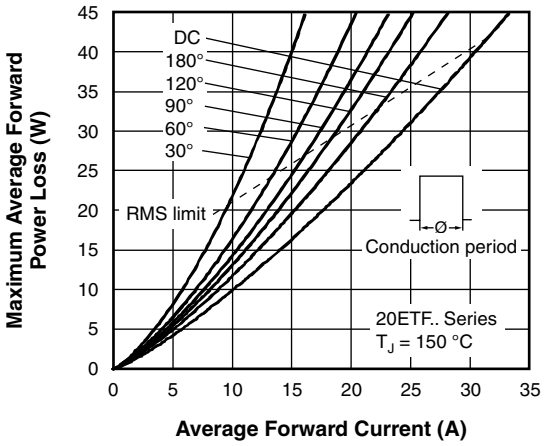



Fig. 4 - Forward Power Loss Characteristics

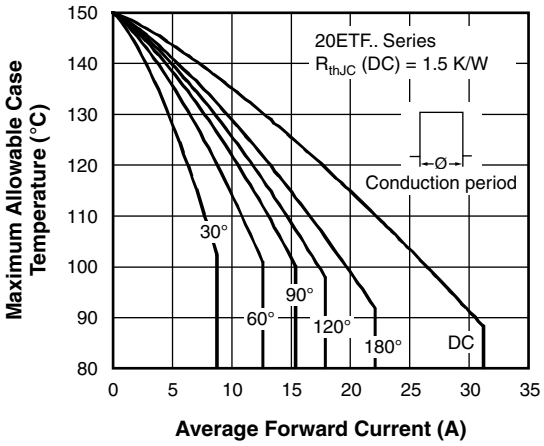



Fig. 2 - Current Rating Characteristics

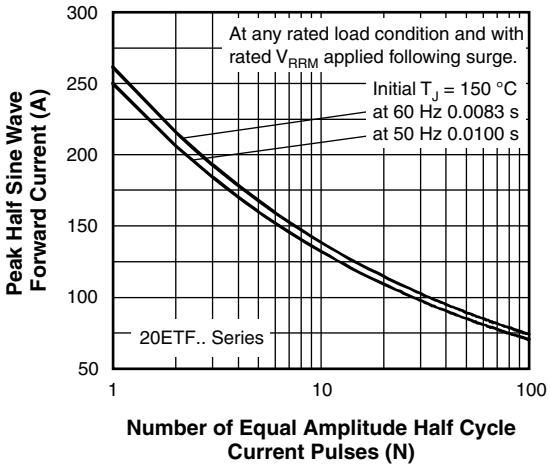



Fig. 5 - Maximum Non-Repetitive Surge Current

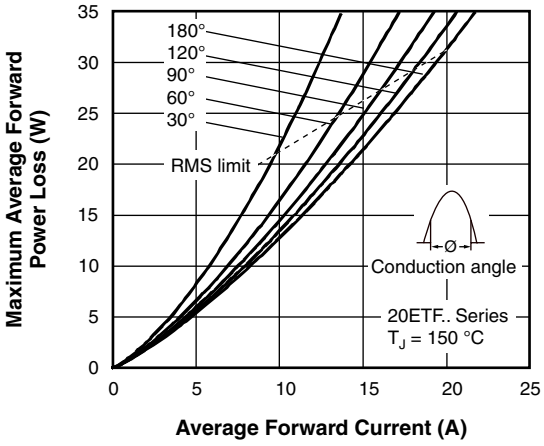



Fig. 3 - Forward Power Loss Characteristics

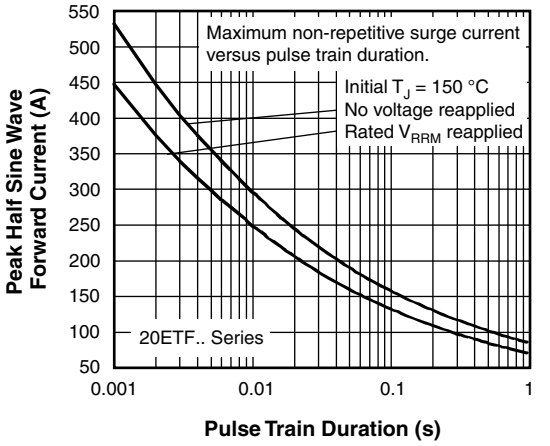



Fig. 6 - Maximum Non-Repetitive Surge Current

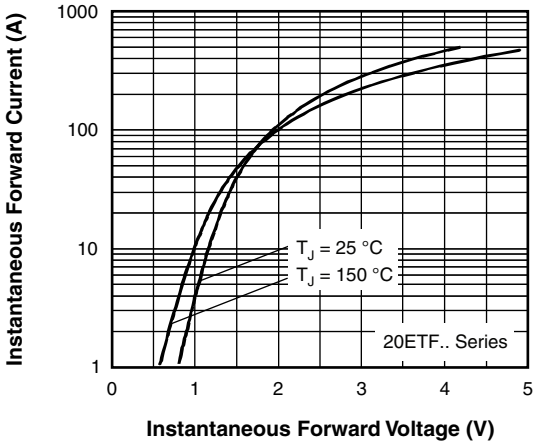



Fig. 7 - Forward Voltage Drop Characteristics

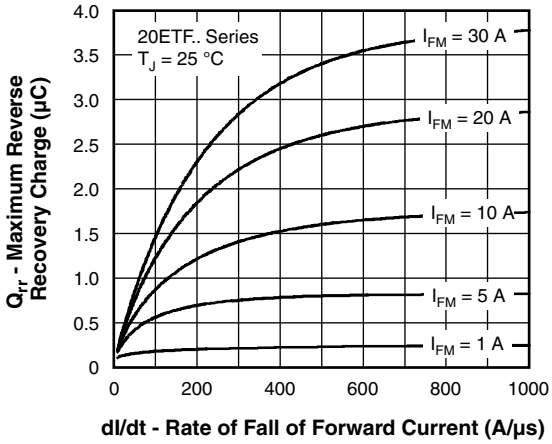



Fig. 10 - Recovery Charge Characteristics, $T_J$ = 25 °C

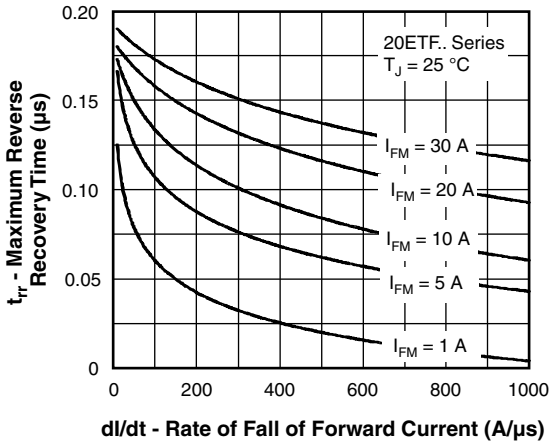



Fig. 8 - Recovery Time Characteristics, $T_J$ = 25 °C

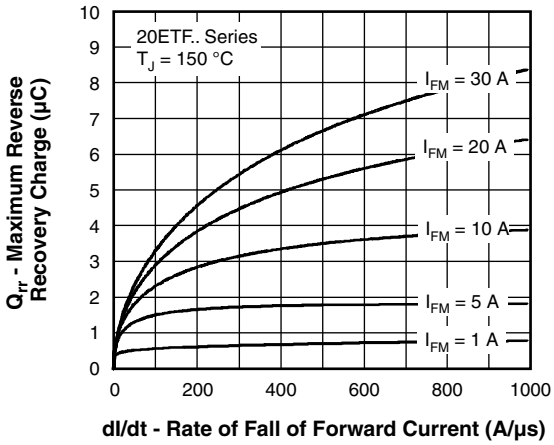



Fig. 11 - Recovery Charge Characteristics, $T_J$ = 150 °C

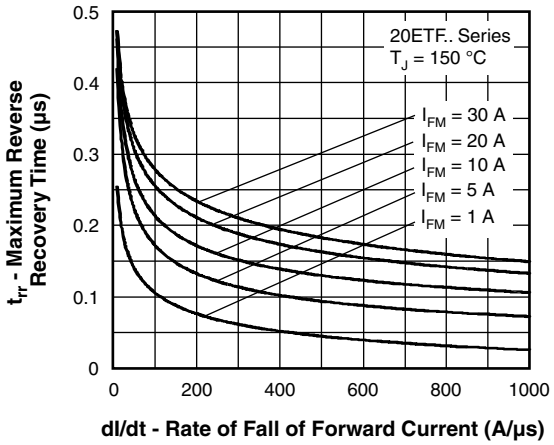



Fig. 9 - Recovery Time Characteristics, $T_J$ = 150 °C

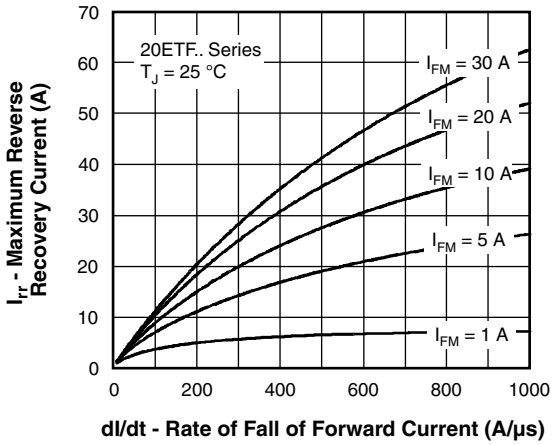



Fig. 12 - Recovery Current Characteristics, $T_J$ = 25 °C

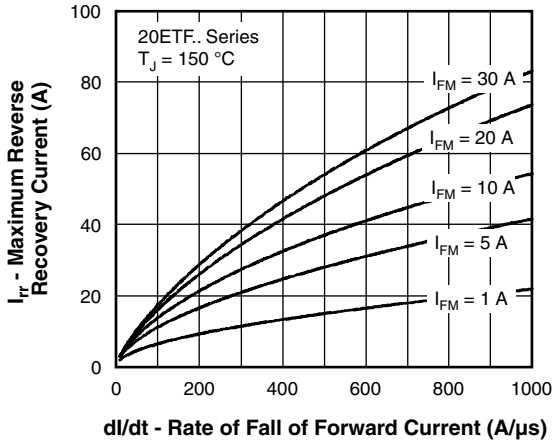



Fig. 13 - Recovery Current Characteristics, $T_J$ = 150 °C

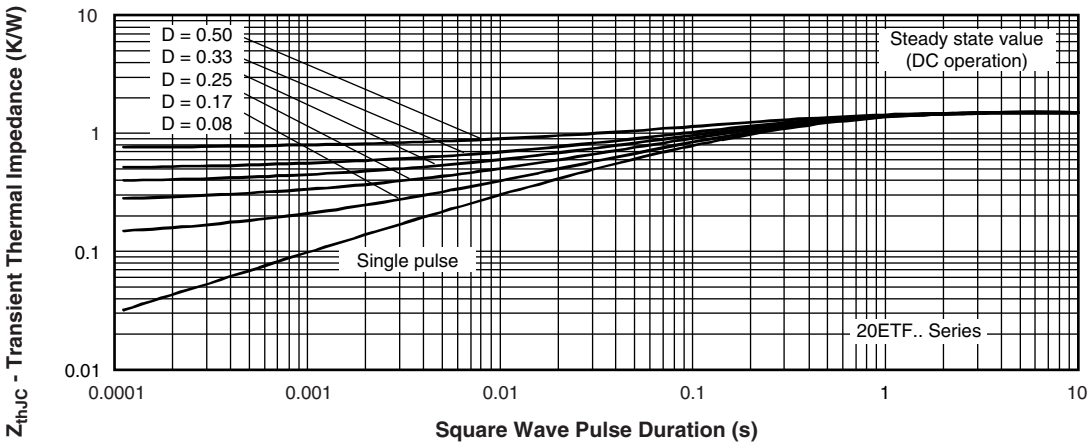



Fig. 14 - Thermal Impedance $Z_{thJC}$ Characteristics

## ORDERING INFORMATION TABLE

**Device code**

| 20 | E | T | F | 06 | FP | PbF |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

1 - Current rating (20 = 20 A)

2 - Circuit configuration:
E = Single diode

3 - Package:
T = TO-220AC

4 - Type of silicon:
F = Fast soft recovery rectifier

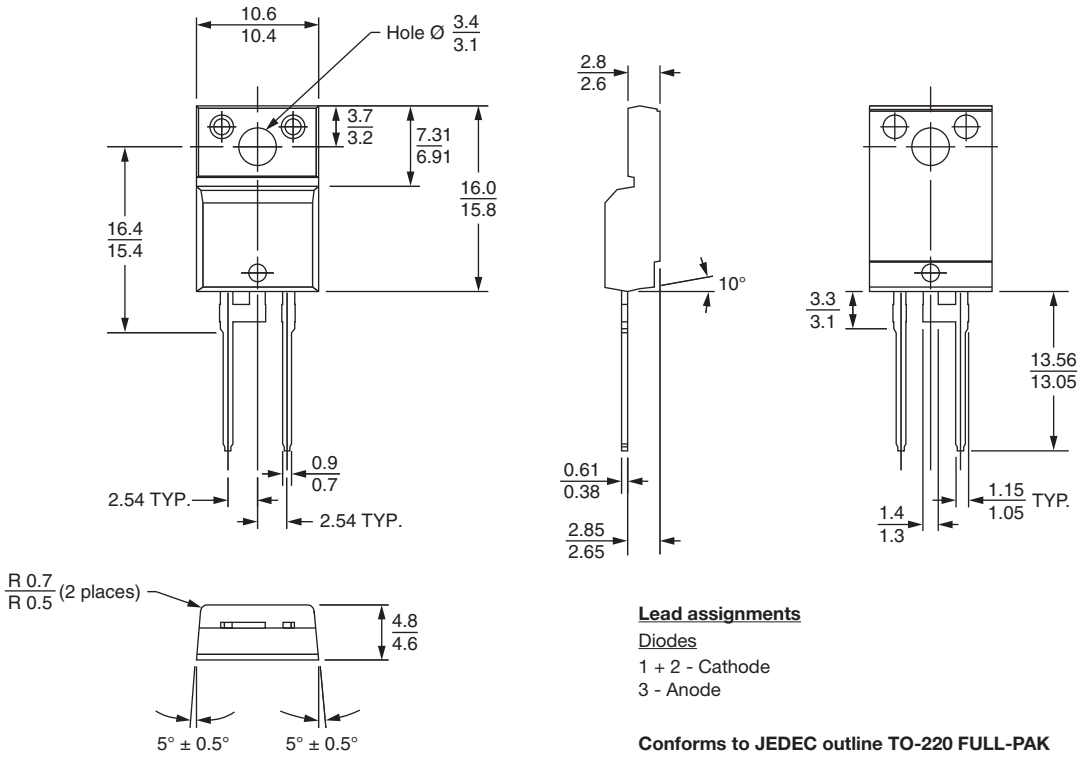
5 - Voltage code x 100 = $V_{RRM}$
02 = 200 V
04 = 400 V
06 = 600 V

6 - FULL-PAK

7 - • None = Standard production
• PbF = Lead (Pb)-free

| LINKS TO RELATED DOCUMENTS | |
|---|---|
| Dimensions | www.vishay.com/doc?95005 |
| Part marking information | www.vishay.com/doc?95009 |
| SPICE model | www.vishay.com/doc?95410 |

**DIMENSIONS** in millimeters




**Lead assignments**

Diodes

1 + 2 - Cathode

3 - Anode

**Conforms to JEDEC outline TO-220 FULL-PAK**

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