

## HIGH VOLTAGE FAST RECOVERY RECTIFIER

**Reverse Voltage - 2500V to 5000V**

**Forward Current – 0.2A**

### FEATURES

- ◆The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆Construction utilizes void-free molded plastic technique
- ◆Low reverse leakage
- ◆High forward surge current capability
- ◆High temperature soldering guaranteed:  
250°C/10 seconds, 0.375"(9.5mm) lead length,  
5 lbs. (2.3kg) tension

### MECHANICAL DATA

- ◆Case: JEDEC DO-41 molded plastic body
- ◆Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
- ◆Polarity: Color band denotes cathode end
- ◆Mounting Position: Any
- ◆Weight: 0.012 ounce, 0.33 grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

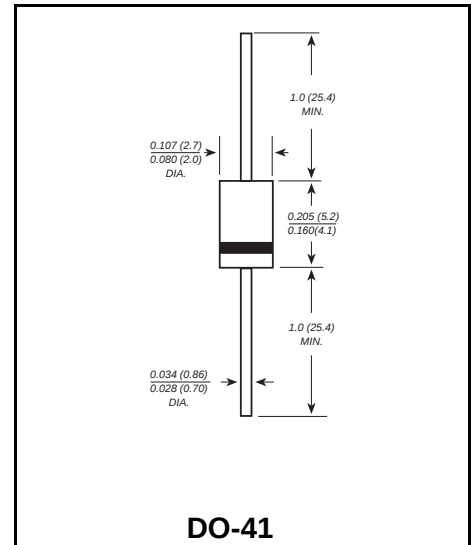
Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| Parameter                                                                                              | Symbols         | R2500F      | R3000F | R4000F | R5000F | Units |
|--------------------------------------------------------------------------------------------------------|-----------------|-------------|--------|--------|--------|-------|
| Maximum repetitive peak reverse voltage                                                                | $V_{RRM}$       | 2500        | 3000   | 4000   | 5000   | V     |
| Maximum RMS voltage                                                                                    | $V_{RMS}$       | 1750        | 2100   | 2800   | 3500   | V     |
| Maximum DC blocking voltage                                                                            | $V_{DC}$        | 2500        | 3000   | 4000   | 5000   | V     |
| Maximum average forward rectified current<br>0.375''(9.5mm) lead length (see fig.1)                    | $I_{F(AV)}$     | 0.2         |        |        |        | A     |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on<br>rated load (JEDEC Method) | $I_{FSM}$       | 30          |        |        |        | A     |
| Maximum instantaneous forward voltage at 0.2 A                                                         | $V_F$           | 4.0         | 5.0    | 6.5    |        | V     |
| Maximum DC reverse current<br>at rated DC blocking voltage                                             | $I_R$           | 5.0<br>50.0 |        |        |        | μA    |
| Maximum reverse recovery time (NOTE 1)                                                                 | $T_{rr}$        | 500         |        |        |        | nS    |
| Typical junction capacitance (NOTE 2)                                                                  | $C_J$           | 15.0        |        |        |        | pF    |
| Typical thermal resistance (NOTE 3)                                                                    | $R_{\theta JA}$ | 50.0        |        |        |        | °C/W  |
| Operating and Storage Temperature Range                                                                | $T_J, T_{stg}$  | -65 to +150 |        |        |        | °C    |

Note: 1. Reverse recovery condition  $I_F=0.5A, I_R=1.0A, I_{rr}=0.25A$

2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

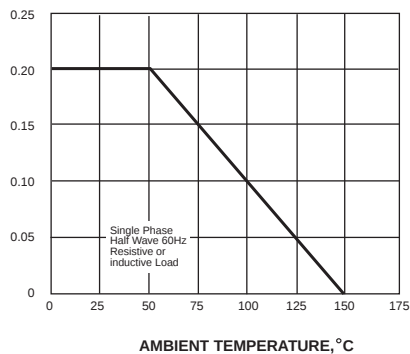
3. Thermal resistance from junction to ambient at 0.375"(9.5mm) lead length, P.C.B. mounted



**RATINGS AND CHARACTERISTICS CURVES**

AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



\*PEAK FORWARD SURGE CURRENT,  
AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

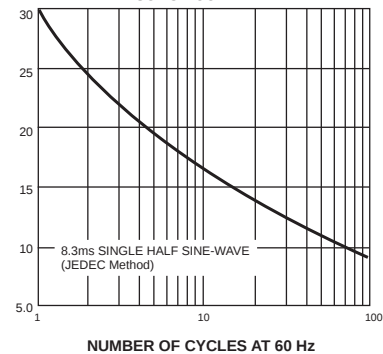
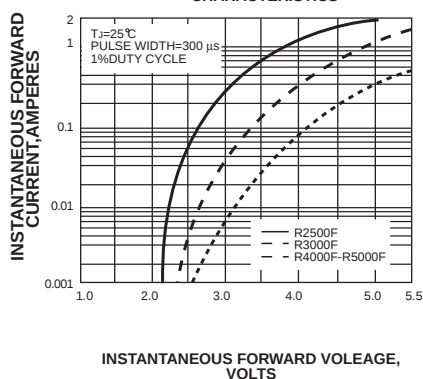
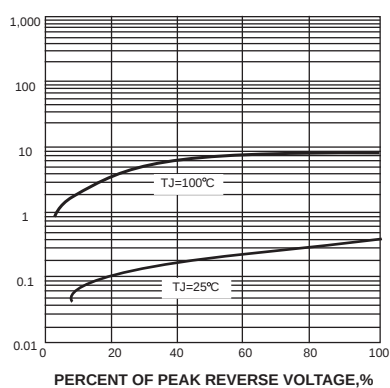


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



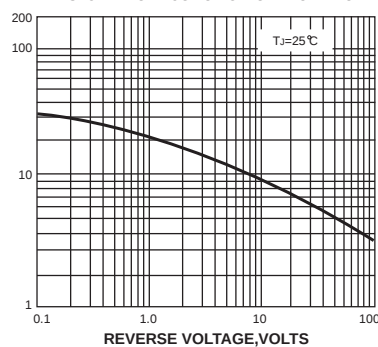
INSTANTANEOUS REVERSE CURRENT,  
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



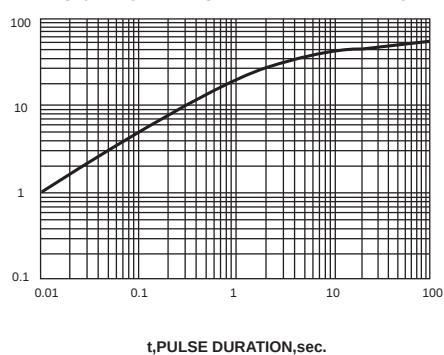
JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE

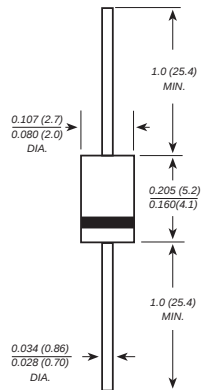


TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



Package Outline DO-41



Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| DO-41   | BOX                 | 1000/5000        | EIA-481-1         |