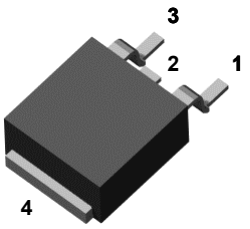
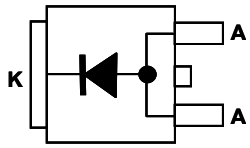
# FR2504DY

## 25A SURFACE MOUNT FAST RECOVERY RECTIFIER

High current Fast Recovery Rectifier housed in the industry-standard D2PAK package. These are high-efficiency, silicon rectifiers for industrial applications requiring surface mount form factor.




2 and 4 Cathode
1 and 3 Anode




TO-263
D2PAK

### SPECIFICATION FEATURES

- High Current ( $I_{F(AV)}$= 25A)
- Low $V_F$ for Lower Forward Conduction Losses
- Soft Recovery Characteristic
- Glass Passivated Junction
- Y-Clip Construction for High Surge Current Capability

### APPLICATIONS

- Voltage Regulators
- Automotive and Industrial Rectification

### MARKING CODE: FR2504DY

### MAXIMUM RATINGS

| Rating | Symbol | Value | Units |
|---|---|---|---|
| Peak Repetitive Reverse Voltage | $V_{RRM}$ | 400 | V |
| Working Peak Reverse Voltage | $V_{RWM}$ | 400 | V |
| DC Blocking Voltage | $V_{DC}$ | 400 | V |
| Average Rectified Forward Current ($T_C$= 100 °C) | $I_{F(AV)}$ | 25 | A |
| Non-Repetitive Peak Forward Surge Current | $I_{FSM}$ | 280 | A |
| Operating Junction and Storage Temperature Range | $T_J$ , $T_{stg}$ | -50 to 150 | °C |

### THERMAL CHARACTERISTICS

| Rating | Symbol | Value | Units |
|---|---|---|---|
| Thermal Resistance junction to case | $R_{\theta JC}$ | 1.0 | °C/Watt |

## ELECTRICAL CHARACTERISTICS ($T_J$ = 25°C unless otherwise noted)

| Parameter | Symbol | Conditions | Min | Typical | Max | Units |
|---|---|---|---|---|---|---|
| Forward voltage (Note 1) | $V_F$ | $I_F$ = 25A | - | 1.17 | 1.3 | V |
| | | $I_F$ = 50A | - | 1.35 | 1.5 | |
| Reverse Leakage Current | $I_R$ | $V_R$ = 400V | - | - | 10 | uA |
| Reverse Recovery Time | $t_{rr}$ | $I_F$ =0.5A, $I_R$ = 1.0A, $I_{RR}$ =0.25A | - | 110 | 250 | ns |

Note 1. Short duration pulse to minimize self-heating

## TYPICAL CHARACTERISTICS ($T_J$ = 25°C unless otherwise noted)

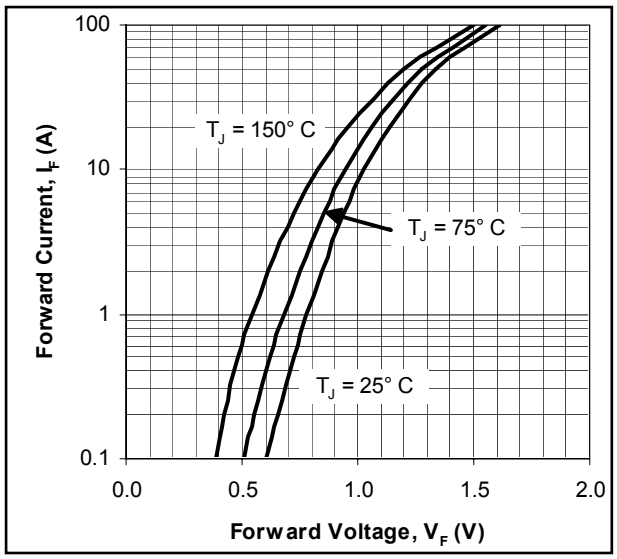



**Figure 1. Typical Forward Characteristics**

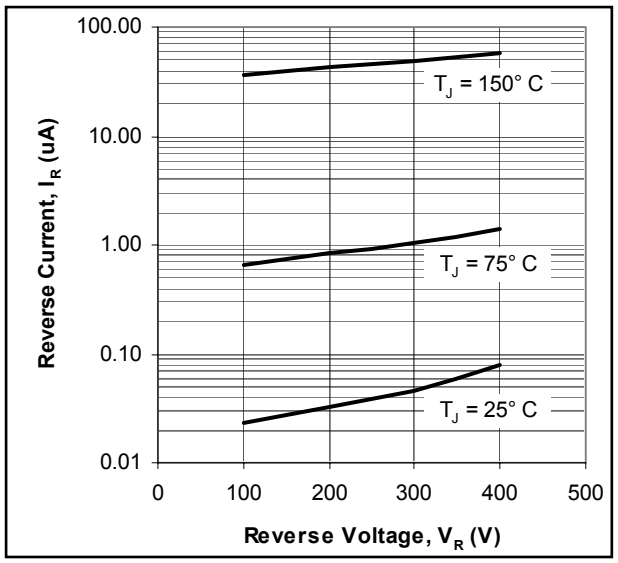



**Figure 2. Typical Reverse Characteristics**

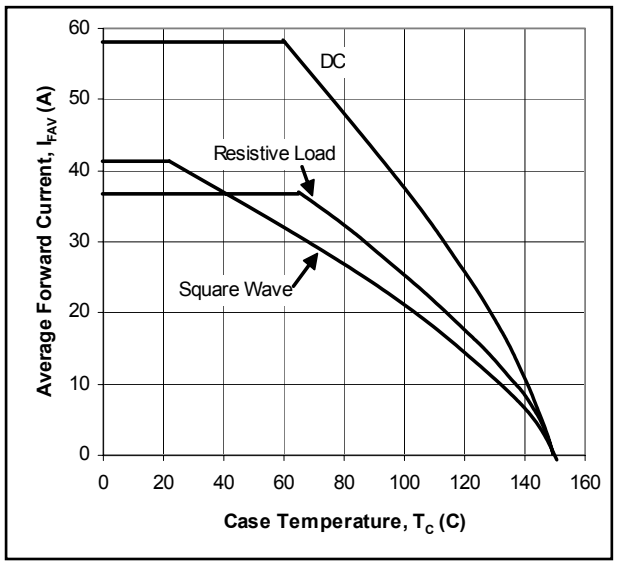



**Figure 3. Current Derating Curves**

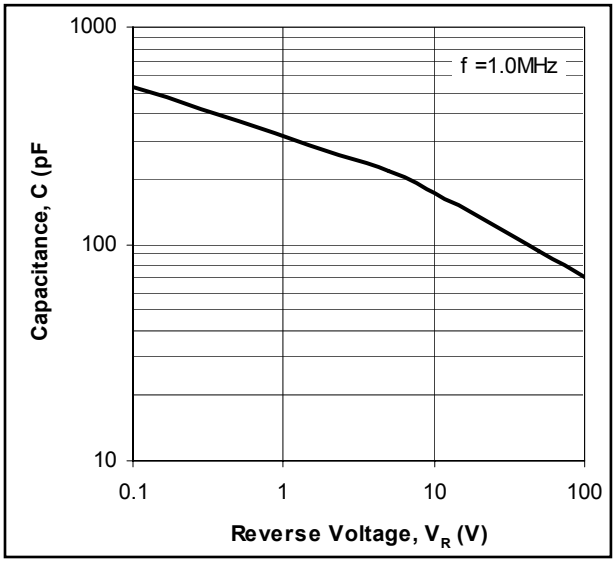
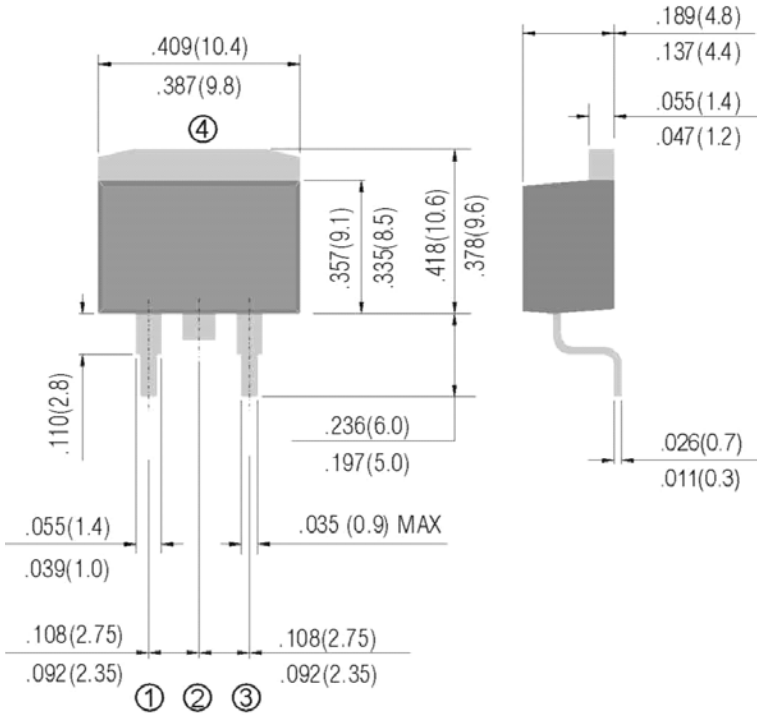
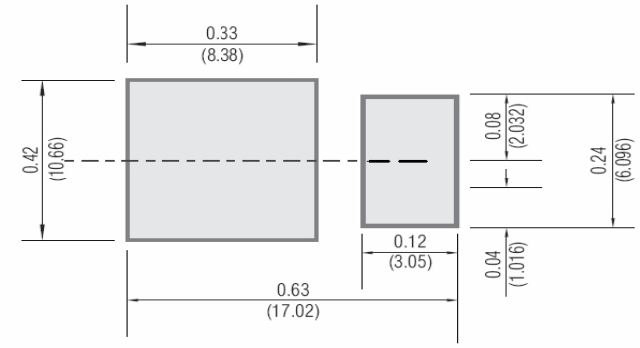



**Figure 4. Typical Capacitance**

## PACKAGE DIMENSIONS AND SUGGESTED PAD LAYOUT

**TO-263 / D2PAK Units: inch (mm)**




## ORDERING INFORMATION

FR2504DY T/R - Tape and Reel, 800 Units Per Reel