

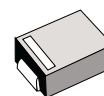
### Surface Mount Ultrafast Power Rectifiers

Ideally suited for high voltage, high frequency rectification, or as free wheeling and protection diodes in surface mount applications where compact size and weight are critical to the system.

- \* Low Power Loss, High efficiency
- \* Glass Passivated chips junction
- \* 150 °C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage Drop , High Current Capability
- \* High-Switching Speed 35 & 50 Nanosecond Recovery Time
- \* Small Compact Surface Mountable Package with J-Bend Lead
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-0

**ULTRA FAST  
RECTIFIERS**

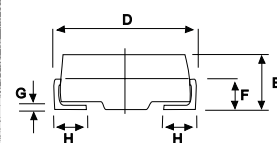
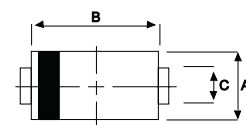
**3.0 AMPERES  
50 -- 400 VOLTS**



**DO-214AA(SMB)**

### MAXIMUM RATINGS

| Characteristic                                                                                               | Symbol                          | MU            |     |     |     |     |     | Unit |
|--------------------------------------------------------------------------------------------------------------|---------------------------------|---------------|-----|-----|-----|-----|-----|------|
|                                                                                                              |                                 | 31            | 32  | 33  | 34  | 35  | 36  |      |
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                       | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 50            | 100 | 150 | 200 | 300 | 400 | V    |
| RMS Reverse Voltage                                                                                          | $V_{R(RMS)}$                    | 35            | 70  | 105 | 140 | 210 | 280 | V    |
| Average Rectifier Forward Current                                                                            | $I_o$                           | 3.0           |     |     |     |     |     | A    |
| Non-Repetitive Peak Surge Current<br>( Surge applied at rate load conditions<br>halfware,single phase,60Hz ) | $I_{FSM}$                       | 75            |     |     |     | 50  |     | A    |
| Operating and Storage Junction<br>Temperature Range                                                          | $T_J$ , $T_{stg}$               | - 65 to + 150 |     |     |     |     |     | °C   |



| DIM | MILLIMETERS |      |
|-----|-------------|------|
|     | MIN         | MAX  |
| A   | 3.30        | 3.90 |
| B   | 4.20        | 4.60 |
| C   | 1.80        | 2.20 |
| D   | 4.90        | 5.60 |
| E   | 1.90        | 2.50 |
| F   | ---         | 1.30 |
| G   | ---         | 0.22 |
| H   | 0.85        | 1.45 |

### ELECTRICAL CHARACTERISTICS

| Characteristic                                                                                                                       | Symbol          | MU        |    |    |    |      |    | Unit |
|--------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|----|----|----|------|----|------|
|                                                                                                                                      |                 | 31        | 32 | 33 | 34 | 35   | 36 |      |
| Maximum Instantaneous Forward Voltage<br>(I <sub>F</sub> =3.0 Amp, T <sub>C</sub> = 25 °C)                                           | V <sub>F</sub>  | 0.95      |    |    |    | 1.30 |    | V    |
| Maximum Instantaneous Reverse Current<br>( Rated DC Voltage, T <sub>C</sub> = 25 °C)<br>( Rated DC Voltage, T <sub>C</sub> = 125 °C) | I <sub>R</sub>  | 5.0<br>70 |    |    |    |      |    | uA   |
| Reverse Recovery Time<br>( I <sub>F</sub> = 0.5 A, I <sub>R</sub> =1.0 , I <sub>rr</sub> =0.25 A )                                   | T <sub>rr</sub> | 35        |    |    |    | 50   |    | ns   |
| Typical Junction Capacitance<br>( Reverse Voltage of 4 volts & f=1 MHz)                                                              | C <sub>P</sub>  | 55        |    |    |    | 45   |    | pF   |

CASE---  
Transfer molded  
plastic

POLARITY---  
Cathode indicated  
polarity band

# SU31 Thru SU36

FIG-1 TYPICAL FORWARD CHARACTERISTICS

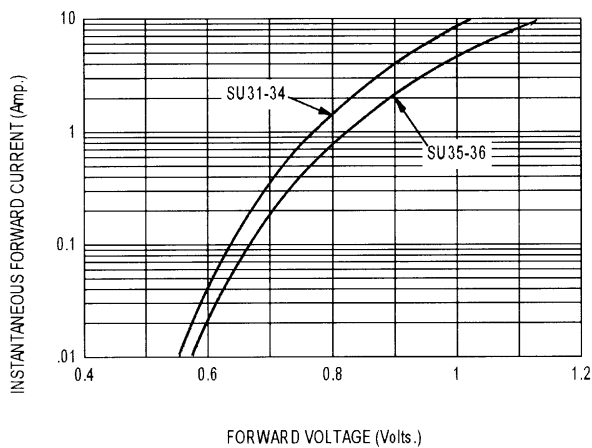
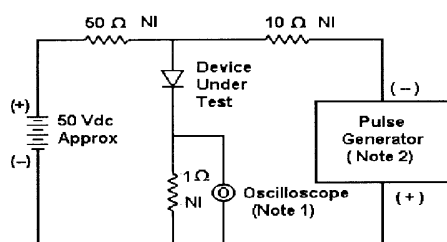
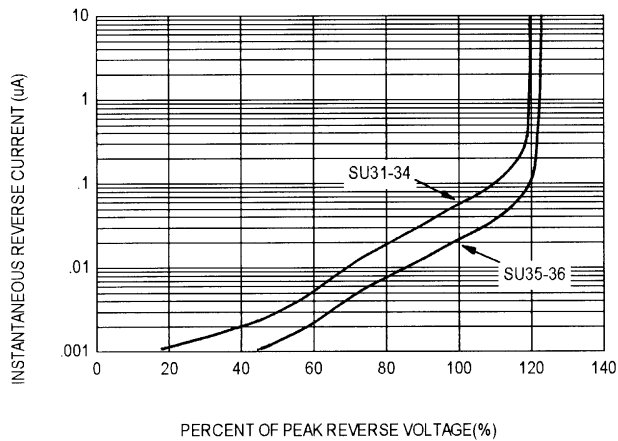


FIG-2 TYPICAL REVERSE CHARACTERISTICS



Notes:  
 1. Rise Time = 7 ns max. Input Impedance = 1 M  $\Omega$ , 22 pF  
 2. Rise Time = 10 ns max. Input Impedance = 50  $\Omega$

Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram

FIG-3 FORWARD CURRENT DERATING CURVE

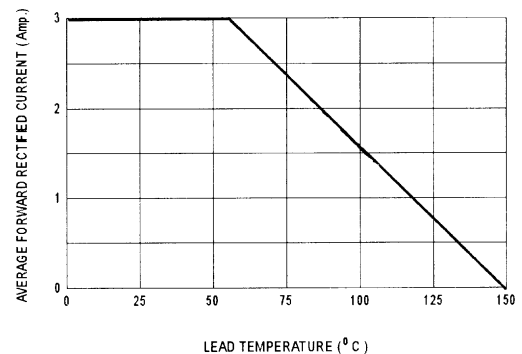


FIG-4 TYPICAL JUNCTION CAPACITANCE

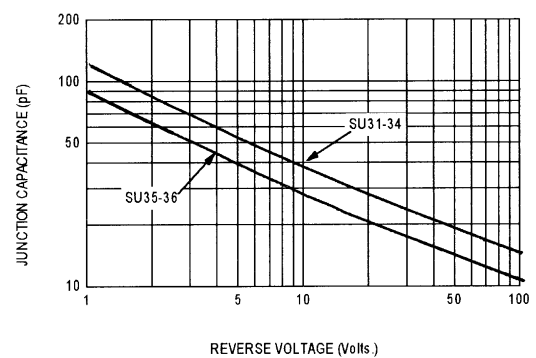
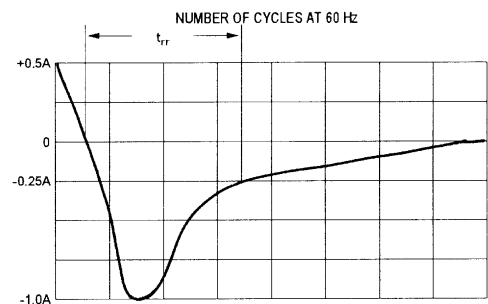
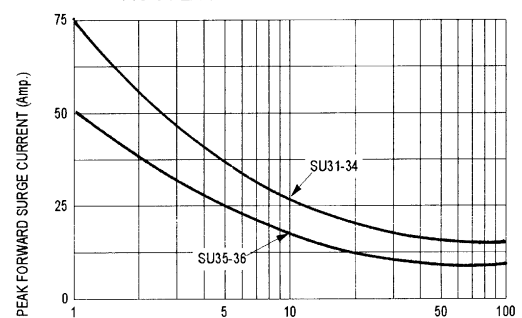


FIG-5 PEAK FORWARD SURGE CURRENT



Set time base for 10/20 ns/div