

Features

- For Surface Mount Applications
- Extremely Low Thermal Resistance
- Easy Pick And Place
- High Temp Soldering: 250°C for 10 Seconds At Terminals\
- Super Fast Recovery Times For High Efficiency

Maximum Ratings

- Operating Temperature: -50°C to +150°C
- Storage Temperature: -50°C to +150°C
- Typical Thermal Resistance; 16°C/W Junction To Lead

| Item Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|-------------|----------------|--|---------------------|-----------------------------|
| ER3A | ER3A | 50V | 35V | 50V |
| ER3B | ER3B | 100V | 70V | 100V |
| ER3C | ER3C | 150V | 105V | 150V |
| ER3D | ER3D | 200V | 140V | 200V |
| ER3G | ER3G | 400V | 280V | 400V |
| ER3J | ER3J | 600V | 420V | 600V |
| ER3K | ER3K | 800V | 560V | 800V |

Electrical Characteristics @ 25°C Unless Otherwise Specified

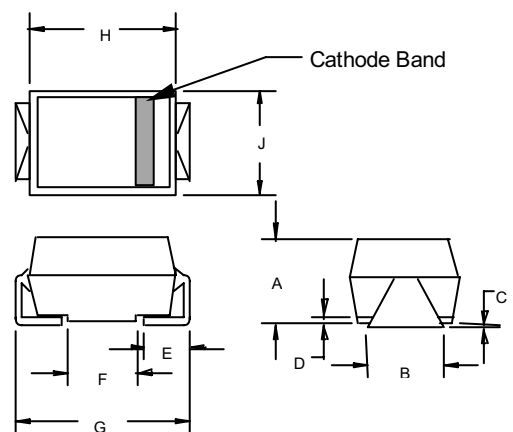
| | | | |
|--|-------------|--------------------------------------|--|
| Average Forward Current | $I_{F(AV)}$ | 3.0A | $T_A = 75^\circ\text{C}$ |
| Peak Forward Surge Current | I_{FSM} | 100A | 8.3ms, half sine |
| Maximum Instantaneous Forward Voltage ER3A-3D ER3G ER3J | V_F | .95V 1.25V 1.70V | $I_{FM} = 3.0\text{A};$ $T_J = 25^\circ\text{C}$ |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | I_R | 5 μA 200 μA | $T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$ |
| Maximum Reverse Recovery Time | T_{rr} | 35ns | $I_F=0.5\text{A}, I_R=1.0\text{A},$ $I_{rr}=0.25\text{A}$ |
| Typical Junction Capacitance | C_J | 45pF | Measured at 1.0MHz, $V_R=4.0\text{V}$ |

*Pulse test: Pulse width 300 μsec , Duty cycle 2%

**ER3A
THRU
ER3J**

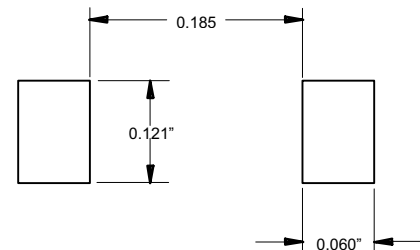
**3 Amp Super Fast
Recovery
Silicon Rectifier
50 to 600 Volts**

**DO-214AB
(SMCJ) (LEAD FRAME)**



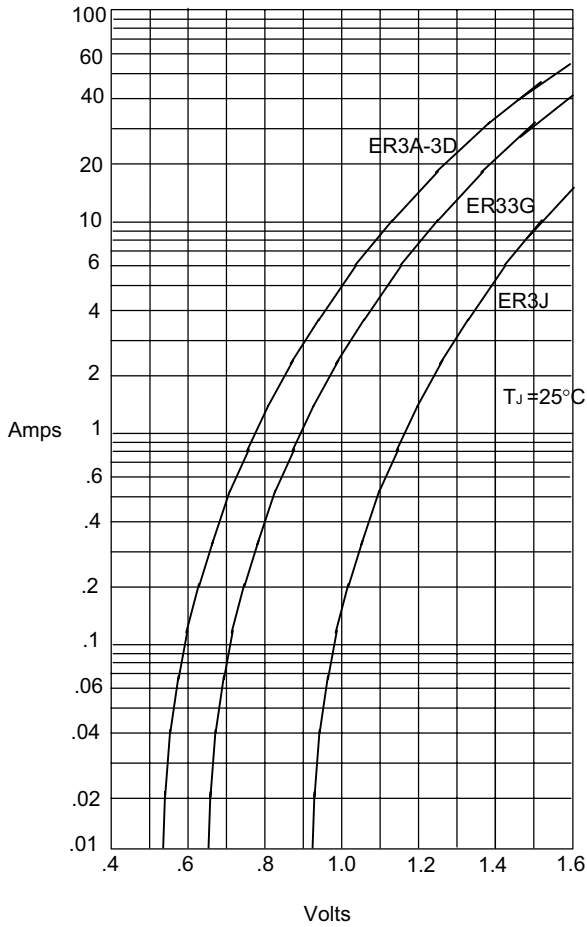
| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|------|------|------|------|
| | INCHES | | MM | | |
| A | .200 | .214 | 5.08 | 5.43 | |
| B | .177 | .203 | 4.70 | 5.30 | |
| C | .002 | .005 | .05 | .13 | |
| D | — | .02 | — | .51 | |
| E | .053 | .067 | 1.35 | 1.70 | |
| F | .168 | .179 | 4.27 | 4.55 | |
| G | .320 | .330 | 8.13 | 8.38 | |
| H | .239 | .243 | 6.08 | 6.18 | |
| J | .234 | .240 | 5.95 | 6.10 | |

**SUGGESTED SOLDER
PAD LAYOUT**



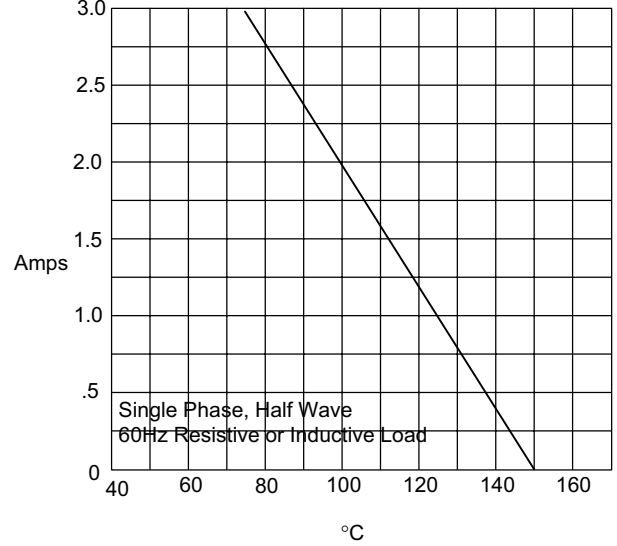
ER3A thru ER3J

Figure 1
Typical Forward Characteristics



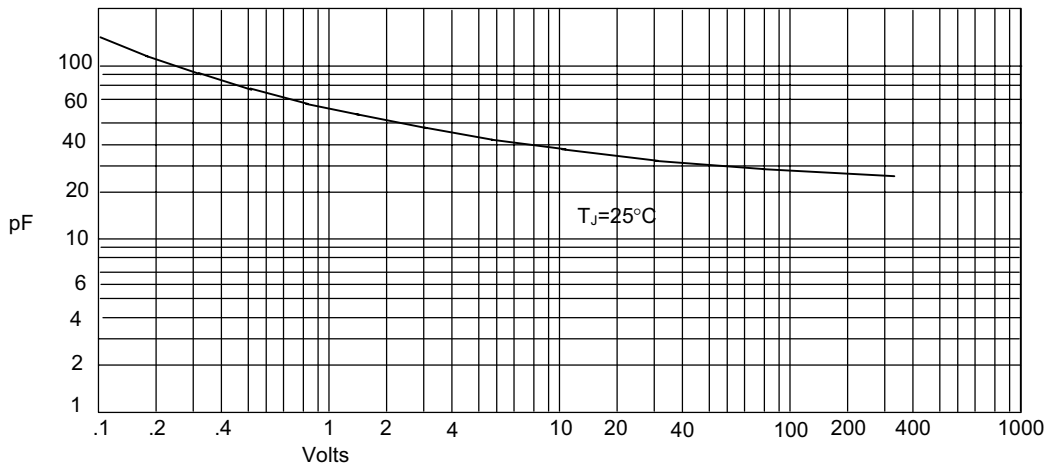
Instantaneous Forward Current - Amperes *versus*
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve



Average Forward Rectified Current - Amperes *versus*
Lead Temperature - $^\circ\text{C}$

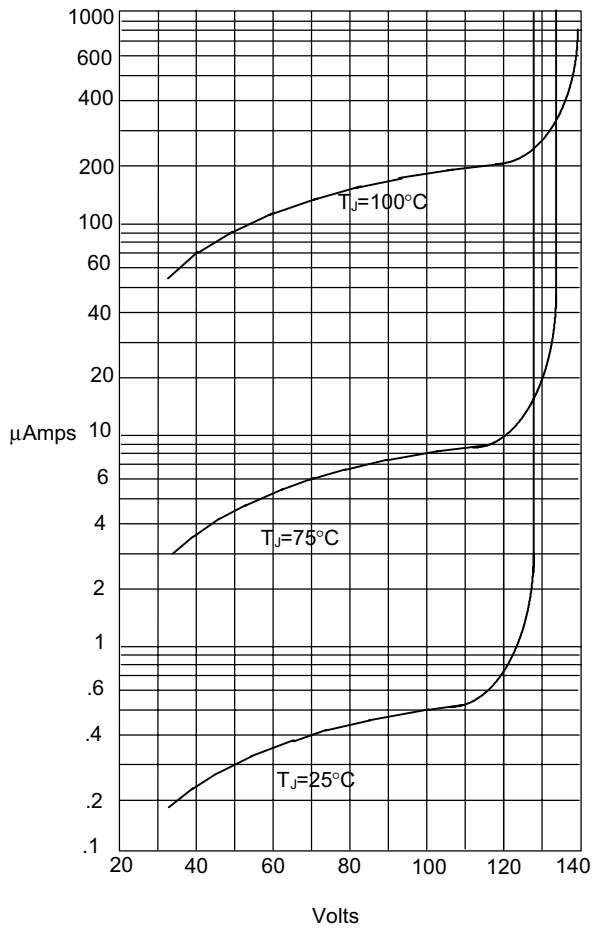
Figure 3
Typical Junction Capacitance



Junction Capacitance - pF *versus*
Reverse Voltage - Volts

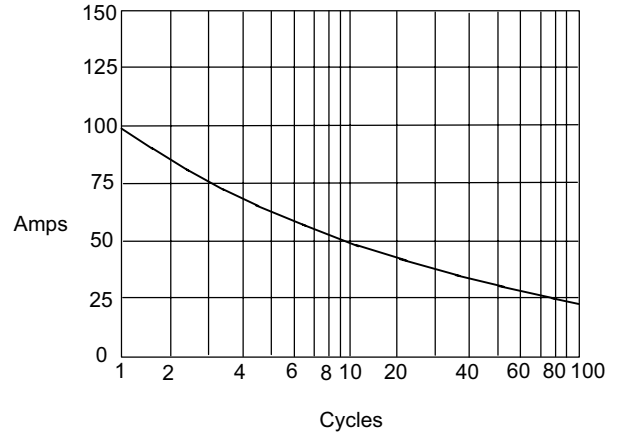
ER3A thru ER3J

Figure 4
Typical Reverse Characteristics



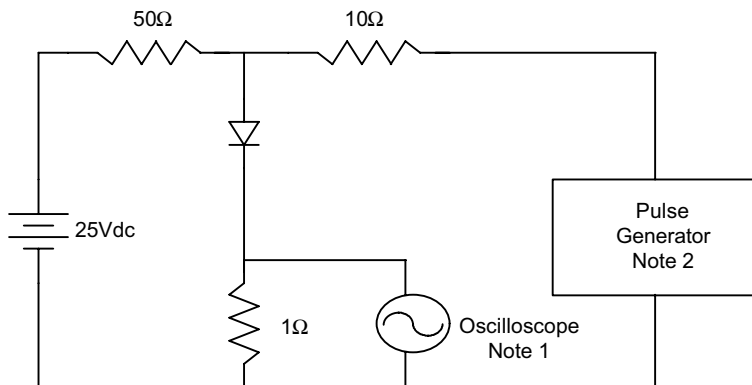
Instantaneous Reverse Leakage Current - MicroAmpere versus
Percent Of Rated Peak Reverse Voltage - Volts

Figure 5
Peak Forward Surge Current



Peak Forward Surge Current - Amperes versus
Number Of Cycles At 60Hz - Cycles

Figure 6
Reverse Recovery Time Characteristic And Test Circuit Diagram



- Notes:
1. Rise Time = 7ns max.
Input impedance = 1 megohm, 22pF
 2. Rise Time = 10ns max.
Source impedance = 50 ohms
 3. Resistors are non-inductive

