# DC COMPONENTS CO., LTD.

RECTIFIER SPECIALISTS

# ER3A THRU ER3G

## *TECHNICAL SPECIFICATIONS OF SURFACE MOUNT SUPER FAST RECTIFIER*

*VOLTAGE RANGE - 50 to 400 Volts* *CURRENT - 3.0 Amperes*

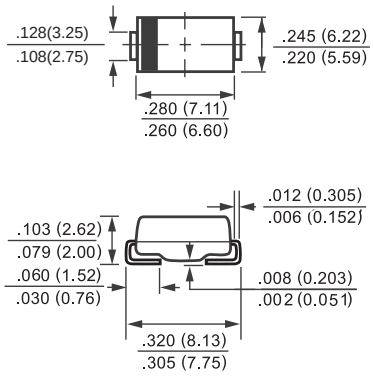
## FEATURES

* Ideal for surface mounted applications
* Low leakage current
* Glass passivated junction

## MECHANICAL DATA

* Case: Molded plastic
* Epoxy: UL 94V-0 rate flame retardant
*Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
* Polarity: As marked
* Mounting position: Any
* Weight: 0.24 gram

SMC ( DO-214AB)




Dimensions in inches and (millimeters)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| | | SYMBOL | ER3A | ER3B | ER3C | ER3D | ER3E | ER3G | UNITS |
|---|---|---|---|---|---|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | | $V_{RRM}$ | 50 | 100 | 150 | 200 | 300 | 400 | Volts |
| Maximum RMS Voltage | | $V_{RMS}$ | 35 | 70 | 105 | 140 | 210 | 280 | Volts |
| Maximum DC Blocking Voltage | | $V_{DC}$ | 50 | 100 | 150 | 200 | 300 | 400 | Volts |
| Maximum Average Forward Rectified Current $T_A$ = 75°C | | $I_O$ | 3.0 | | | | | | Amps |
| Peak Forward Surge Current $I_{FM}$(surge): 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) | | $I_{FSM}$ | 100 | | | | | | Amps |
| Maximum Forward Voltage at 3.0A DC | | $V_F$ | 0.95 | | | 1.25 | | | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | @$T_A$ = 25°C | $I_R$ | 5.0 | | | | | | uAmps |
| | @$T_A$ = 105°C | | 200 | | | | | | |
| Maximum Reverse Recovery Time (Note 3) | | trr | 35 | | | | | | nSec |
| Typical Thermal Resistance (Note 2) | | RθJL | 10 | | | | | | °C/W |
| Typical Junction Capacitance (Note 1) | | $C_J$ | 60 | | | | | | pF |
| Operating and Storage Temperature Range | | $T_J$, $T_{STG}$ | -65 to + 175 | | | | | | °C |

NOTES : 1. Measured at 1.0 MHz and applied reverse voltage of 4.0VDC
2. Thermal Resistance (Junction to Ambient), 0.4x0.4in$^2$(10.0X10.0mm$^2$ ) copper pads to each terminal.
3. Test Conditions: IF=0.5A, IR=1.0A, IRR=0.25A.



NEXT BACK EXIT

## RATING AND CHARACTERISTIC CURVES ( ER3A THRU ER3G )

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

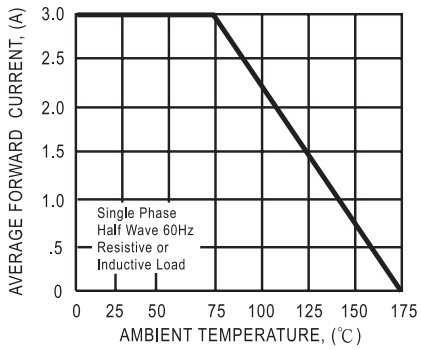



FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

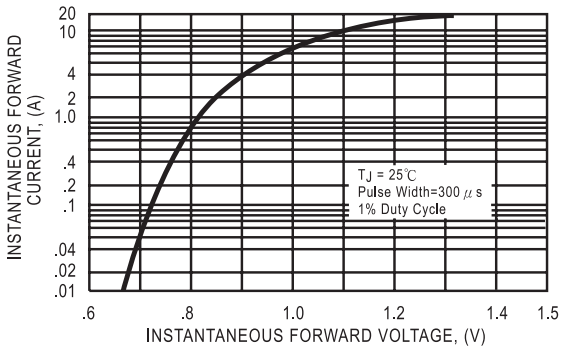



FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

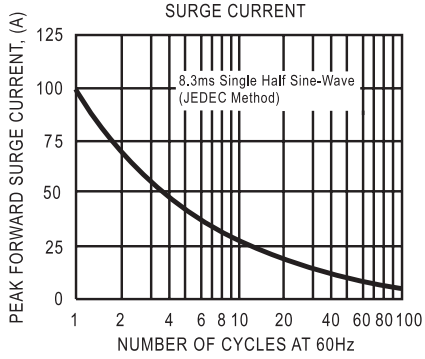



FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

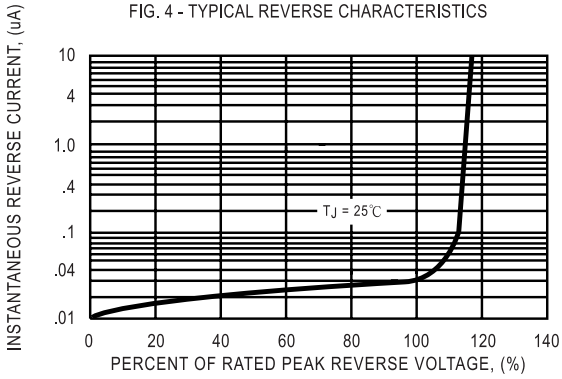
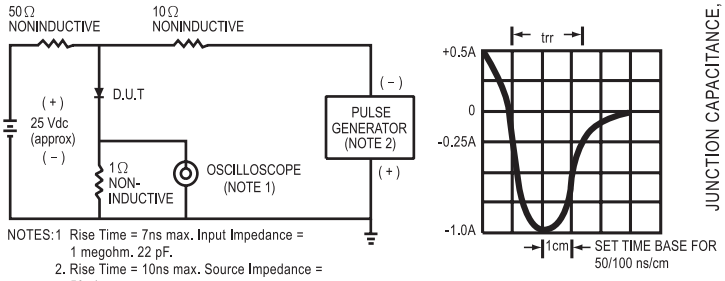



FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC




NOTES:1 Rise Time = 7ns max. Input Impedance = 1 megohm. 22 pF.
2. Rise Time = 10ns max. Source Impedance = 50 ohms.

FIG. 6 - TYPICAL JUNCTION CAPACITANCE