

## Switchmode Schottky Barrier Power Rectifiers

Using the Schottky Barrier principle with high temperature operation metal. The proprietary barrier technology allows for reliable operation up to 150°C junction temperature. Typical application are in switching Mode Power Supplies such as adaptators, Photovoltaic Solar cell protection, free-wheeling and polarity protection diodes.

### Features

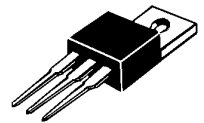
- \* Ultra Low Forward Voltage.
- \* Low Switching noise.
- \* High Current Capacity
- \* Low Power Loss & High efficiency.
- \* 150°C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction.
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O



\* In compliance with EU RoHs 2002/95/EC directives

### SCHOTTKY BARRIER RECTIFIERS

**40 AMPERES  
60VOLTS**



TO-220AB

### MAXIMUM RATINGS

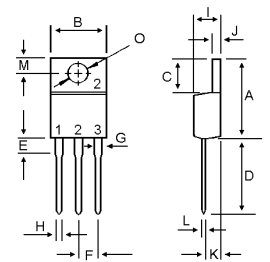
| Characteristic   | Symbol                          | S40C60CL    | Unit |
|--|---------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                 | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 60          | V    |
| RMS Reverse Voltage  | $V_{R(RMS)}$                    | 42          | V    |
| Average Rectifier Forward Current (per diode)<br>Total Device (Rated $V_R$ ), $T_C=100^\circ\text{C}$  | $I_{F(AV)}$                     | 20<br>40    | A    |
| Peak Repetitive Forward Current<br>(Rate $V_R$ , Square Wave, 20kHz)                                   | $I_{FM}$                        | 40          | A    |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfware, single phase, 60Hz) | $I_{FSM}$                       | 300         | A    |
| Operating and Storage Junction Temperature Range   | $T_J, T_{stg}$                  | -65 to +150 | °C   |

### THERMAL RESISTANCES

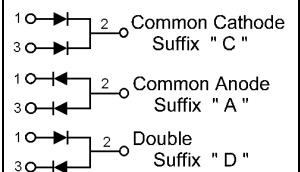
|   |                  |     |      |
|---|------------------|-----|------|
| Maximum Thermal Resistance junction to case | $R_{\theta J-C}$ | 3.2 | °C/w |
|---|------------------|-----|------|

### ELECTRICAL CHARACTERISTICS

| Characteristic  | Symbol | S40C60CL |                      |                      | Unit |
|---|--------|----------|----------------------|----------------------|------|
|   |        | Min      | Typ.                 | Max.                 |      |
| Maximum Instantaneous Forward Voltage ( per diode )<br>( $I_F=0.1$ Amp $T_C=25^\circ\text{C}$ )<br>( $I_F=10$ Amp $T_C=25^\circ\text{C}$ )<br>( $I_F=20$ Amp $T_C=25^\circ\text{C}$ ) | $V_F$  | ---      | 0.24<br>0.44<br>0.55 | 0.28<br>0.48<br>0.60 | V    |
| Maximum Instantaneous Reverse Current<br>( Rated DC Voltage, $T_C=25^\circ\text{C}$ )<br>( Rated DC Voltage, $T_C=100^\circ\text{C}$ )  | $I_R$  |          | 0.5                  | 50                   | mA   |



| DIM | MILLIMETERS |       |
|-----|-------------|-------|
|     | MIN         | MAX   |
| A   | 14.68       | 15.32 |
| B   | 9.78        | 10.42 |
| C   | 5.02        | 6.52  |
| D   | 13.06       | 14.62 |
| E   | 3.57        | 4.07  |
| F   | 2.42        | 2.66  |
| G   | 1.12        | 1.36  |
| H   | 0.72        | 0.96  |
| I   | 4.22        | 4.98  |
| J   | 1.14        | 1.38  |
| K   | 2.20        | 2.98  |
| L   | 0.33        | 0.55  |
| M   | 2.48        | 2.98  |
| O   | 3.70        | 3.90  |



# S40C60CL

FIG-1 FORWARD CURRENT DERATING CURVE

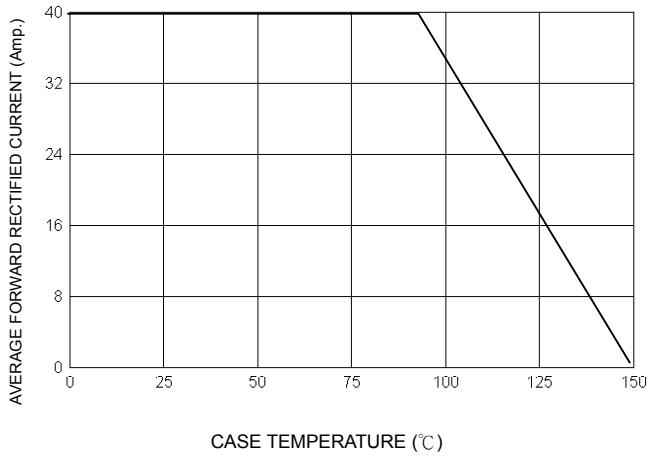


FIG-2 TYPICAL FORWARD CHARACTERISTICS

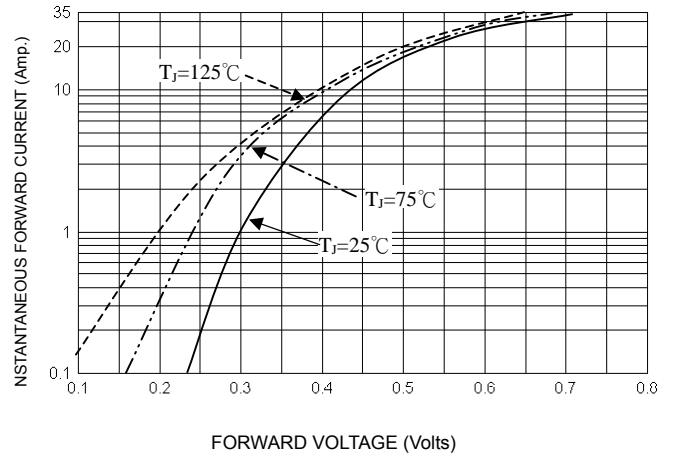


FIG-3 TYPICAL REVERSE CHARACTERISTICS

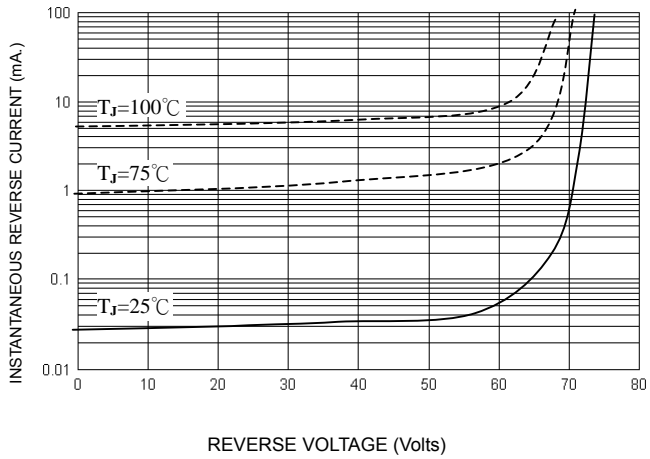


FIG-4 TYPICAL JUNCTION CAPACITANCE

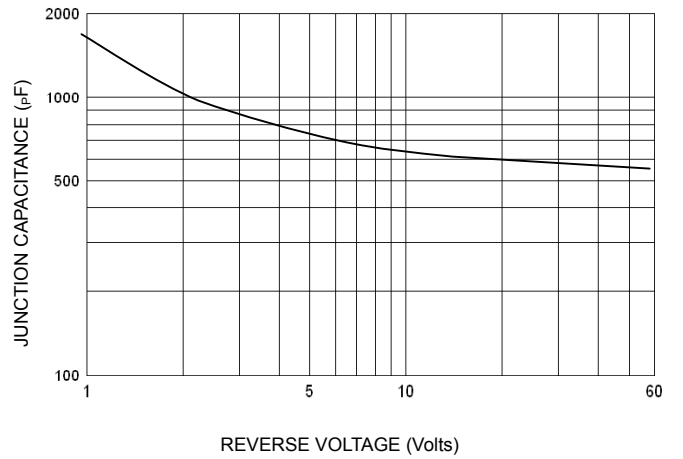
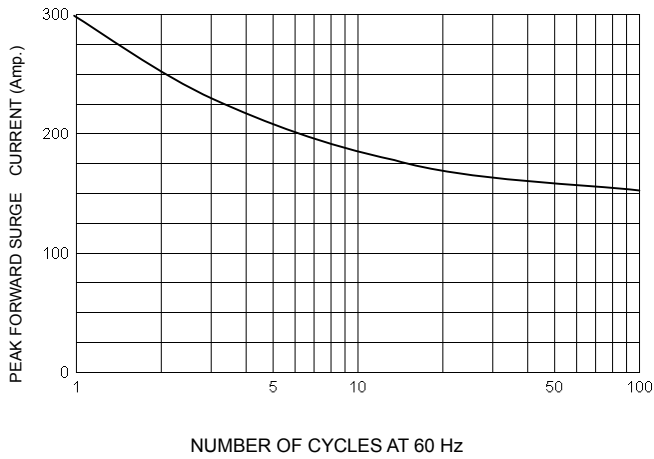


FIG-5 PEAK FORWARD SURGE CURRENT



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