DIOTEC ELECTRONICS CORP.
18020 Hobart Blvd., Unit B
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Data Sheet No. SBDT-4000-1B

# 40 AMP SCHOTTKY BARRIER RECTIFIERS

## FEATURES

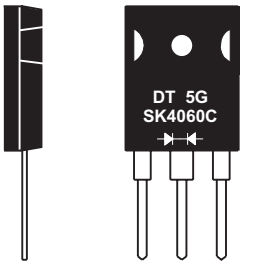
- Low switching noise
- Low forward voltage drop
- Low thermal resistance
- High switching capability
- High surge capability
- High reliability

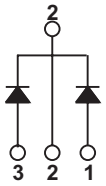
## MECHANICAL DATA

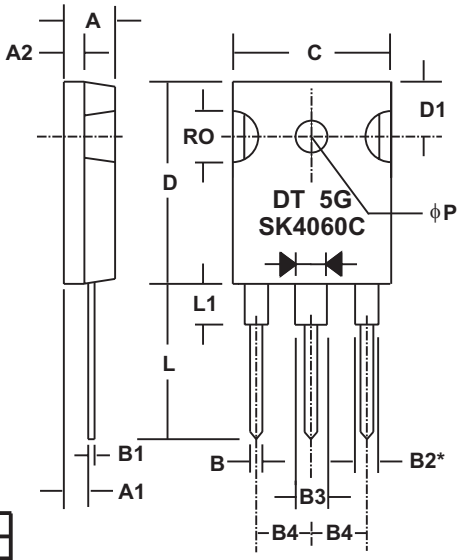
- Case: TO-247 (TO-3P) molded epoxy (U/L Flammability Rating 94V-0)
- Terminals: Rectangular pins w/ standoff
- Solderability: Per MIL-STD 202 Method 208 guaranteed
- Polarity: Diode depicted on product
- Mounting Position: Any
- Weight: 0.20 Ounces (5.5 Grams)

## MECHANICAL SPECIFICATION

*ACTUAL SIZE OF TO-247AB (TO-3PAB) PACKAGE*




*Applies to Pins 1 and 3

| Sym | Minimum | | Maximum | |
|---|---|---|---|---|
| | in | mm | in | mm |
| A | 0.19 | 4.82 | 0.205 | 5.2 |
| A1 | 0.087 | 2.21 | 0.102 | 2.6 |
| A2 | 0.075 | 1.9 | 0.085 | 2.16 |
| B | 0.045 | 1.14 | 0.055 | 1.4 |
| B1 | 0.022 | 0.56 | 0.032 | 0.81 |
| B2 | 0.079 | 2.01 | 0.094 | 2.39 |
| B3 | 0.116 | 2.95 | 0.126 | 3.2 |
| B4 | | | 0.215 | 5.46 |
| C | 0.602 | 15.29 | 0.625 | 15.88 |
| D | 0.776 | 19.7 | 0.799 | 20.3 |
| D1 | 0.209 | 5.31 | 0.224 | 5.69 |
| L | 0.559 | 14.2 | 0.582 | 14.8 |
| L1 | 0.146 | 3.71 | 0.189 | 4.8 |
| RO | 0.209 | 5.3 | 0.224 | 5.7 |
| ϕP | 0.13 | 3.3 | 0.145 | 3.7 |

**TO-247AB (TO-3PAB)**

**SERIES SK4040C - SK40100C**

## MAXIMUM RATINGS & ELECTRICAL CHARACTERISTICS

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

| PARAMETER (TEST CONDITIONS) | SYMBOL | RATINGS | | | | | UNITS |
|---|---|---|---|---|---|---|---|
| Series Number | | SK 4040C | SK 4050C | SK 4060C | SK 4070C | SK 40100C | |
| Maximum DC Blocking Voltage | $V_{RM}$ | 40 | 50 | 60 | 70 | 100 | VOLTS |
| Maximum RMS Voltage | $V_{RMS}$ | | | | | | |
| Maximum Peak Recurrent Reverse Voltage | $V_{RRM}$ | | | | | | |
| Average Forward Rectified Current @ $T_C$ = 85 °C) | $I_O$ | 40 | | | | | AMPS |
| Peak Forward Surge Current ( 8.3mS single half sine wave superimposed on rated load) | $I_{FSM}$ | 200 | | | | | |
| Maximum Forward Voltage Drop (per diode) at 20 Amps | $V_{FM}$ | 0.6 | | 0.7 | | 0.92 | VOLTS |
| Maximum Average DC Reverse Current @ $T_J$ = 25 °C<br>At Rated DC Blocking Voltage @ $T_J$ = 125 °C | $I_{RM}$ | 2.0<br>100 | | | | 2.0<br>50 | mA |
| Typical Thermal Resistance, Junction to Case (on heat sink) | $R_{\theta JC}$ | 1.2 | | | | | °C/W |
| Junction Operating Temperature Range | $T_J$ | -65 to +150 | | | | | °C |
| Storage Temperature Range | $T_{STG}$ | -65 to +175 | | | | | |

4,97fsbdt040

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# 40 AMP SCHOTTKY BARRIER RECTIFIERS

## RATING & CHARACTERISTIC CURVES FOR SK4040C - SK40100C SERIES

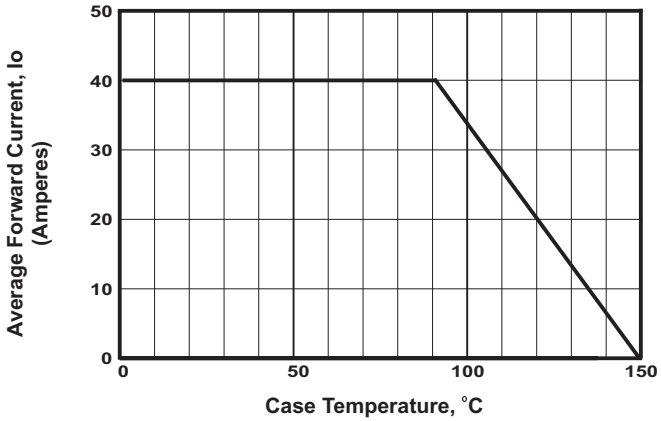



*FIGURE 1. FORWARD CURRENT DERATING CURVE*

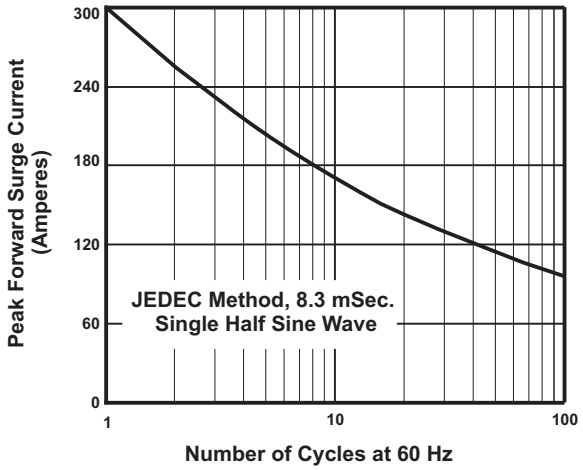



*FIGURE 2. MAXIMUM NON-REPETITIVE SURGE CURRENT*

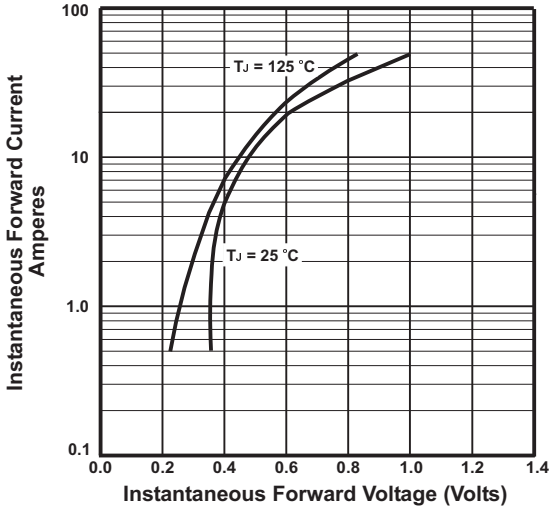



*FIGURE 3. TYPICAL FORWARD CHARACTERISTICS*

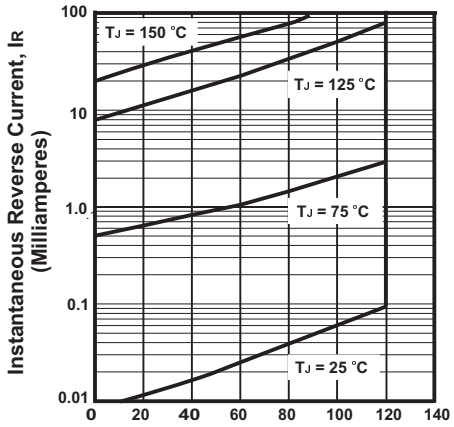



*FIGURE 4. TYPICAL REVERSE CHARACTERISTICS*

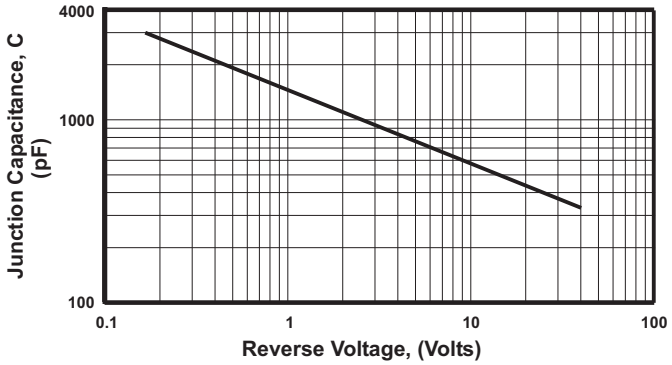



*FIGURE 5. TYPICAL JUNCTION CAPACITANCE*

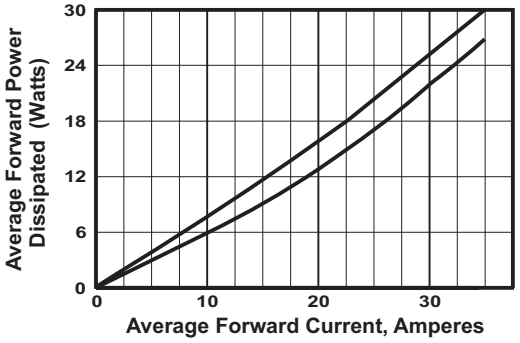



*FIGURE 6. FORWARD POWER DISSIPATION*



4.97bsbdt40