

## Features

- Halogen Free. "Green" Device (Note 1)
- Fully Automotive Qualified to AEC-Q101
- Low Profile Package
- High Surge Capability
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant (Note 2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings @ 25°C (Unless Otherwise Specified)

| Parameter                                                    | Symbol      | Value   |         | Unit                 |
|--------------------------------------------------------------|-------------|---------|---------|----------------------|
|                                                              |             | SK510LQ | SK520LQ |                      |
| Peak Repetitive Reverse Voltage                              | $V_{RRM}$   | 100     | 200     | V                    |
| Working Peak Reverse Voltage                                 | $V_{RWM}$   |         |         |                      |
| DC Blocking Voltage                                          | $V_R$       |         |         |                      |
| RMS Reverse Voltage                                          | $V_{RMS}$   | 70      | 140     | V                    |
| Average Rectified Forward Current @ $T_L=105^\circ\text{C}$  | $I_{F(AV)}$ | 5       |         | A                    |
| Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave     | $I_{FSM}$   | 120     |         | A                    |
| Current Squared Time @ $1\text{ms} \leq t \leq 8.3\text{ms}$ | $I^2t$      | 59.76   |         | $\text{A}^2\text{s}$ |

## Marking code

| Part Number | Marking code |
|-------------|--------------|
| SK510LQ     | SK510        |
| SK520LQ     | SK520        |

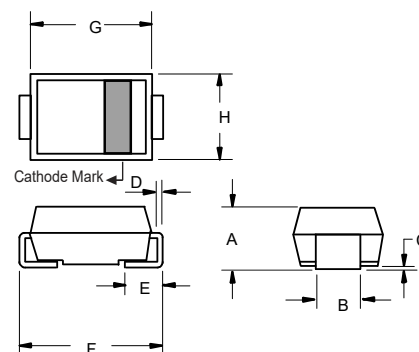
## Internal Structure

| Pin | Description | Simplified outline                              | Graphic symbol |
|-----|-------------|-------------------------------------------------|----------------|
| 1   | cathode     | <p>XXXX = Marking code<br/>YYWW = Date Code</p> |                |
| 2   | anode       |                                                 |                |

- Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

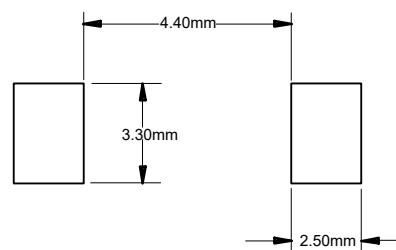
# 5 Amp Surface Mount Schottky Rectifier 100 to 200 Volts

## SMC (DO-214AB)



| DIM | INCHES |       | MM    |       | NOTE |
|-----|--------|-------|-------|-------|------|
|     | MIN    | MAX   | MIN   | MAX   |      |
| A   | 0.079  | 0.103 | 2.00  | 2.62  |      |
| B   | 0.108  | 0.128 | 2.75  | 3.25  |      |
| C   | 0.002  | 0.008 | 0.051 | 0.203 |      |
| D   | 0.006  | 0.012 | 0.152 | 0.305 |      |
| E   | 0.030  | 0.060 | 0.76  | 1.52  |      |
| F   | 0.305  | 0.320 | 7.75  | 8.13  |      |
| G   | 0.260  | 0.280 | 6.60  | 7.11  |      |
| H   | 0.220  | 0.245 | 5.59  | 6.22  |      |

## Suggested Solder Pad Layout



## Thermal characteristics

| Symbol        | Parameter                                   | Conditions | Min | Typ | Max | Unit |
|---------------|---------------------------------------------|------------|-----|-----|-----|------|
| $T_J$         | Operating Junction Temperature Range        |            | -55 |     | 175 | °C   |
| $T_{stg}$     | Storage Temperature Range                   |            | -55 |     | 175 | °C   |
| $R_{th(J-L)}$ | Thermal Resistance from Junction to Lead    | Note 1     |     | 16  |     | °C/W |
| $R_{th(J-A)}$ | Thermal Resistance from Junction to Ambient | Note 1     |     | 55  |     | °C/W |

Note:

1. Mounted on P.C.B. with 0.6" x 0.6" (16 mm x 16 mm) copper pad areas.

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| Parameter            | Symbol | Test Conditions                   | Min | Typ  | Max  | Unit |
|----------------------|--------|-----------------------------------|-----|------|------|------|
| Forward Voltage      |        |                                   |     |      |      |      |
| SK510LQ              | $V_F$  | $I_F=5A; T_J=25^{\circ}C$         |     | 0.77 | 0.80 | V    |
|                      |        | $I_F=5A; T_J=125^{\circ}C$        |     | 0.63 | 0.70 |      |
| SK520LQ              |        | $I_F=5A; T_J=25^{\circ}C$         |     | 0.82 | 0.90 |      |
|                      |        | $I_F=5A; T_J=125^{\circ}C$        |     | 0.69 | 0.80 |      |
| Reverse Current      |        |                                   |     |      |      |      |
| SK510LQ              | $I_R$  | at Rated $V_R; T_J=25^{\circ}C$   |     |      | 5    | uA   |
|                      |        | at Rated $V_R; T_J=125^{\circ}C$  |     |      | 200  |      |
| SK520LQ              |        | at Rated $V_R; T_J=25^{\circ}C$   |     |      | 5    |      |
|                      |        | at Rated $V_R; T_J=125^{\circ}C$  |     |      | 150  |      |
| Junction Capacitance |        |                                   |     |      |      |      |
| SK510LQ              | $C_J$  | $V_R=4V; f=1MHz; T_J=25^{\circ}C$ |     | 150  |      | pF   |
| SK520LQ              |        |                                   |     | 100  |      |      |

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

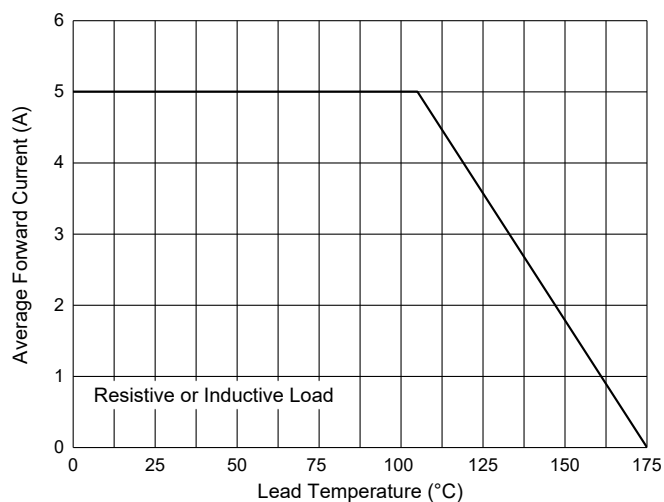


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

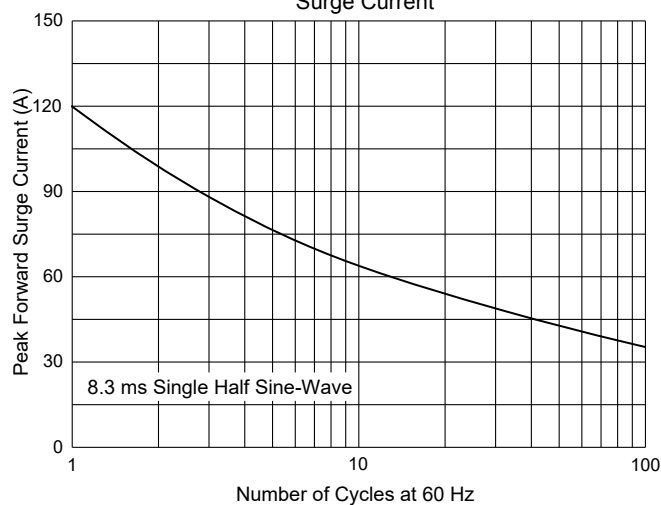


Fig. 3 - Typical Forward Characteristics

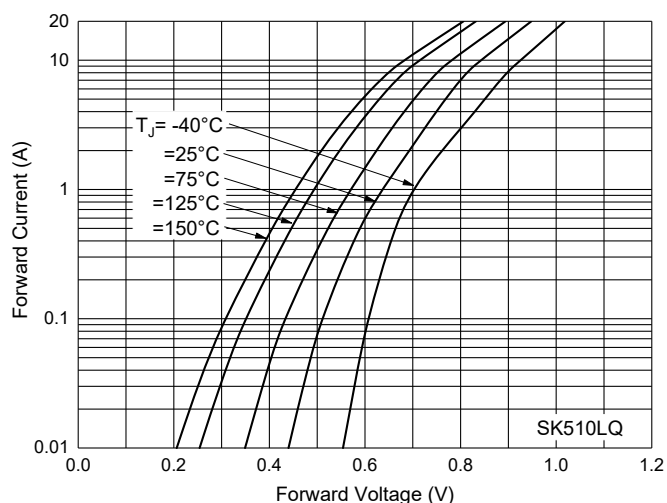


Fig. 4 - Typical Reverse Leakage Characteristics

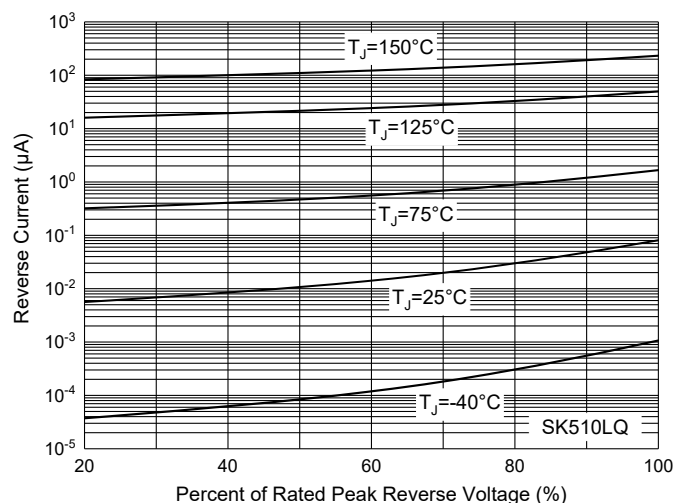


Fig. 5 - Typical Forward Characteristics

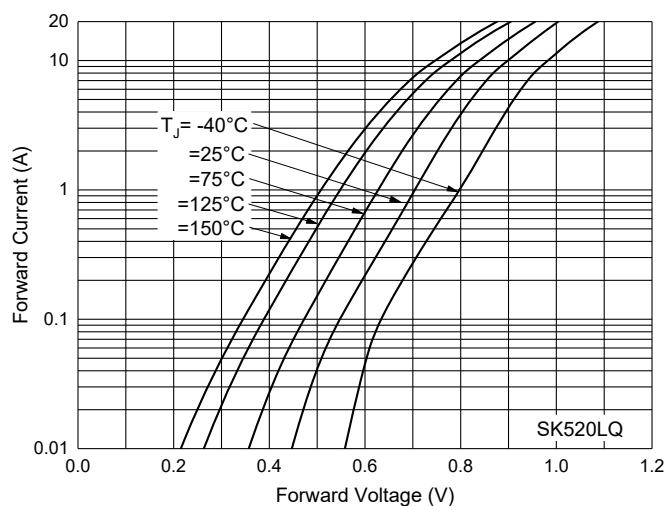
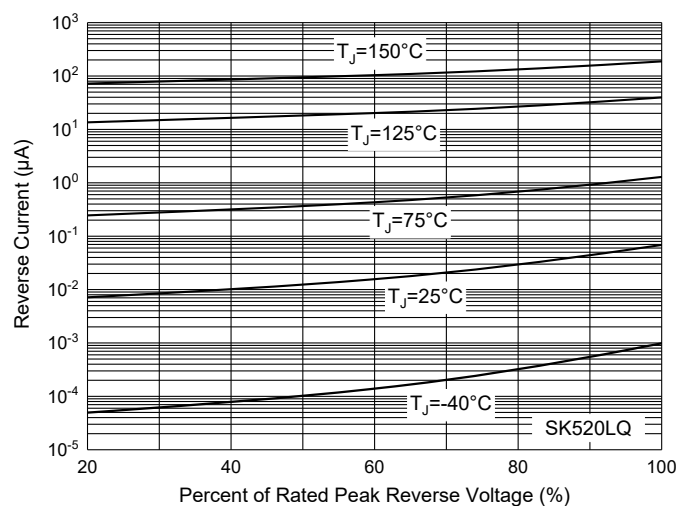


Fig. 6 - Typical Reverse Leakage Characteristics



## Curve Characteristics

Fig. 7 - Capacitance Characteristics

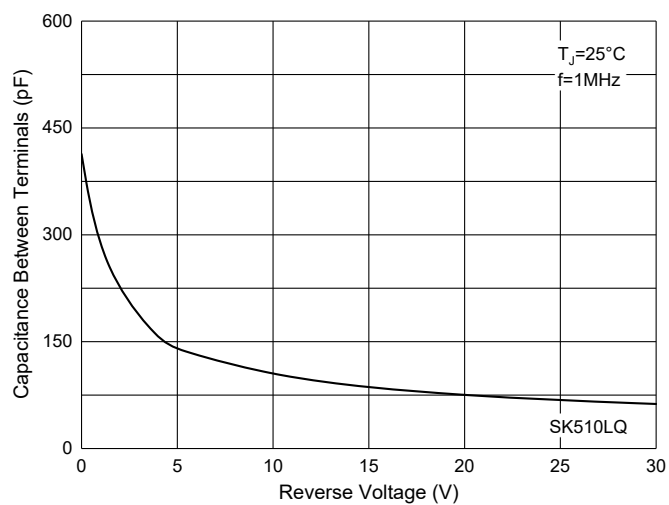
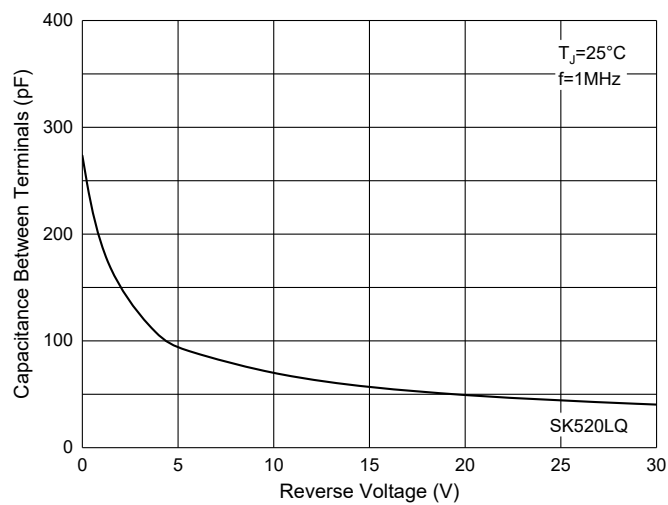


Fig. 8 - Capacitance Characteristics



## Ordering Information

| Device         | Packing              |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:3Kpcs/Reel |

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