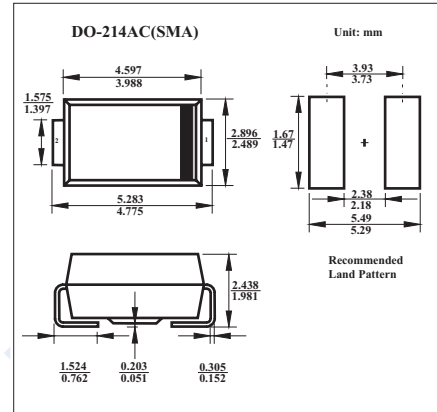


## Surface Mount Ultrafast Efficient Plastic Rectifier

### KS1A THRU KS1D (ES1A THRU ES1D)

#### ■ Features

- For surface mount applications
- Low profile package
- Ideally suited for use in very high frequency switching power supplies, inverters and as a free wheeling diodes
- Ultrafast recovery times for high efficiency
- Low forward voltage
- Low leakage current
- Glass passivated chip junction



#### ■ Absolute Maximum Ratings $T_A=25^\circ\text{C}$

| Characteristic  | Symbol          | KS1A       | KS1B | KS1C | KS1D | Unit                      |
|---|-----------------|------------|------|------|------|---------------------------|
| Maximum recurrent peak reverse voltage  | $V_{RRM}$       | 50         | 100  | 150  | 200  | V                         |
| Maximum RMS voltage   | $V_{RMS}$       | 35         | 70   | 105  | 140  | V                         |
| Maximum DC blocking voltage   | $V_{DC}$        | 50         | 100  | 150  | 200  | V                         |
| Maximum average forward rectified current at $T_L=25^\circ\text{C}$                   | $I_{(AV)}$      | 1          |      |      |      | A                         |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load    | $I_{FSM}$       | 30         |      |      |      | A                         |
| Maximum instantaneous forward voltage at 1.0A   | $V_F$           | 0.92       |      |      |      | V                         |
| Maximum DC reverse current at rated $T_A=25^\circ\text{C}$<br>$T_A=100^\circ\text{C}$ | $I_R$           | 5<br>100   |      |      |      | $\mu\text{A}$             |
| Maximum reverse recovery time *1  | $t_{rr}$        | 15         |      |      |      | ns                        |
| Reverse recovery time $T_A=25^\circ\text{C}$<br>$T_A=100^\circ\text{C}$ *3            | $t_{rr}$        | 25<br>35   |      |      |      | ns                        |
| Maximum stored charge $T_A=25^\circ\text{C}$<br>$T_A=100^\circ\text{C}$ *3            | $Q_{rr}$        | 10<br>25   |      |      |      | nC                        |
| Typical junction capacitance *2   | $C_J$           | 7          |      |      |      | pF                        |
| Maximum thermal resistance *1   | $R_{\theta JA}$ | 85         |      |      |      | $^\circ\text{C}/\text{W}$ |
|   | $R_{\theta JL}$ | 35         |      |      |      |                           |
| Operating and storage temperature range   | $T_J, T_{STG}$  | -55 to 150 |      |      |      | $^\circ\text{C}$          |

\*1 Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$

\*2 Measured at 1.0MHz and applied reverse voltage of 4.0V

\*3  $t_{rr}$  and  $Q_{rr}$  measured at:  $I_F=0.6\text{A}$ ,  $V_R=30\text{V}$ ,  $dI/dt=50\text{A/ms}$ ,  $I_{rr}=10\%$   $I_{RM}$  for measurement of  $t_{rr}$