Elektronische Bauelemente

# ES21B ~ ES25B

**Voltage 50 ~ 600V**

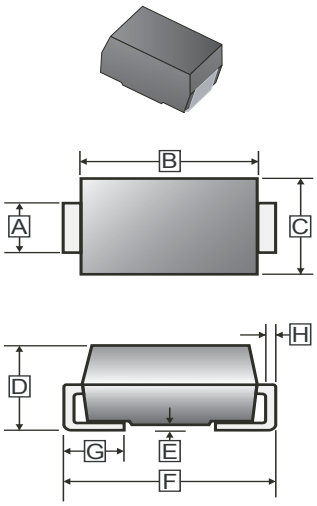
**2.0Amp Super Fast Recovery Rectifiers**

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

## FEATURES

- Fast switching for high efficiency
- Low forward voltage drop
- High current capability
- Low reverse leakage current
- High surge current capability
- Glass passivated chip

**SMB**




| REF. | Millimeter | | REF. | Millimeter | |
|---|---|---|---|---|---|
| | Min. | Max. | | Min. | Max. |
| A | 1.91 | 2.20 | E | - | 0.203 |
| B | 4.06 | 4.70 | F | 5.08 | 5.59 |
| C | 3.30 | 3.94 | G | 0.76 | 1.52 |
| D | 2.13 | 2.44 | H | 0.15 | 0.305 |

## MECHANICAL DATA

- Case: Molded Plastic SMB/DO-214AA
- Epoxy: UL 94V-0 Rate Flame Retardant
- Terminals: Solderable per MIL-STD-750 method 2026
- Polarity: Color Band Denotes Cathode
- Mounting Position: Any
- Weight: 0.093 gram

## PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---|---|---|
| SMB | 3K | 13' inch |

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Rating 25°C ambient temperature unless otherwise specified. Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, de-rate current by 20%.)

| Parameter | | Symbol | Rating | | | | | Unit |
|---|---|---|---|---|---|---|---|---|
| | | | ES21B | ES22B | ES23B | ES24B | ES25B | |
| Maximum Recurrent Peak reverse voltage | | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | V |
| Maximum RMS Voltage | | $V_{RMS}$ | 35 | 70 | 140 | 280 | 420 | V |
| Maximum DC Blocking Voltage | | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | V |
| Maximum Average Forward Rectified Current @$T_A$=90°C | | $I_{F(AV)}$ | 2 | | | | | A |
| Peak Forward Surge Current, 8.3 ms Half Sine-Wave superimposed on rated load(JEDEC method) | | $I_{FSM}$ | 60 | | | | | A |
| Maximum Instantaneous Forward Voltage @ 2.0A | | $V_F$ | 0.9 | | | 1.25 | 1.5 | V |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $T_J$=25°C | $I_R$ | 5 | | | | | μA |
| | $T_J$=125°C | | 100 | | | | | |
| Maximum Reverse Recovery Time [1] | | $T_{RR}$ | 20 | | | 25 | 50 | nS |
| Typical Junction Capacitance [2] | | $C_J$ | 50 | | | | | pF |
| Maximum Thermal Resistance | | $R_{\theta JA}$ | 45 | | | | | °C / W |
| Maximum Thermal Resistance | | $R_{\theta JC}$ | 15 | | | | | °C / W |
| Operating and Storage Temperature | | $T_J$,$T_{STG}$ | -55 ~ 150 | | | | | °C |

Notes:
1. Reverse recovery test conditions $I_F$=0.5A, $I_R$=1.0A, $I_{RR}$=0.25A.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts DC.

## RATINGS AND CHARACTERISTIC CURVES

FIG.1 - FORWARD CURRENT DERATING CURVE

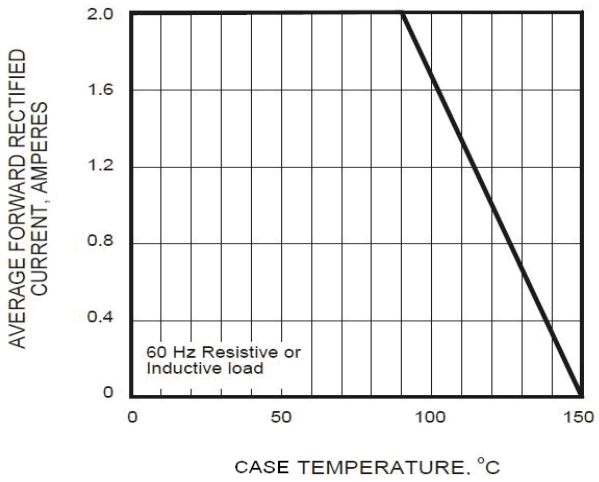



FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

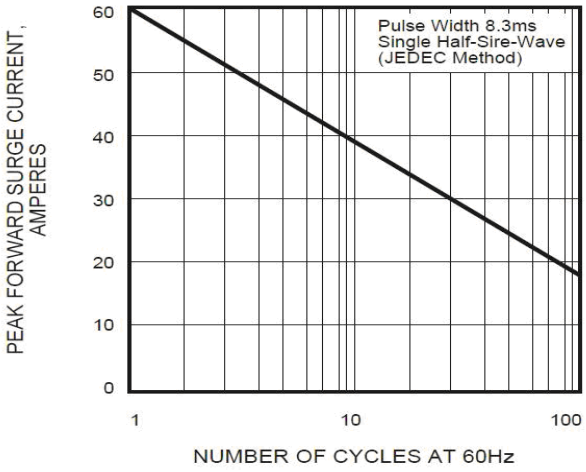



FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

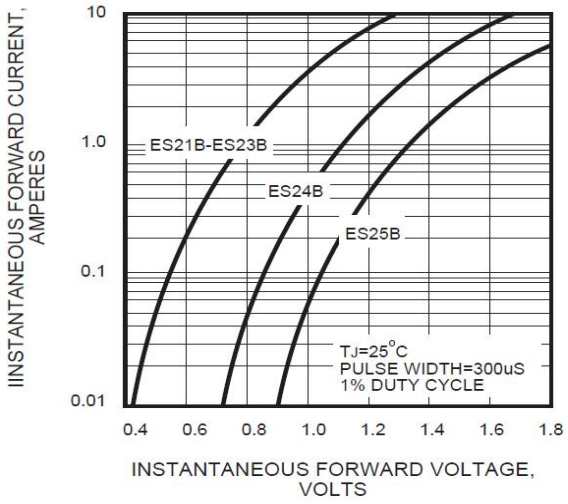



FIG.4 - TYPICAL REVERSE CHARACTERISTICS

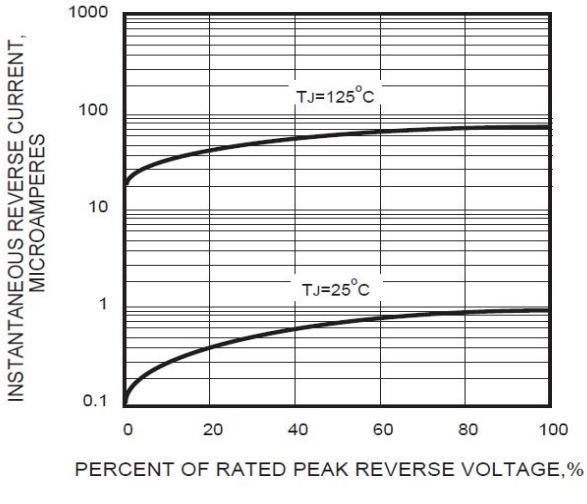



FIG.5 - TYPICAL JUNCTION CAPACITANCE