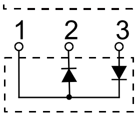
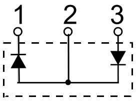
# SDEF2x60-17B1

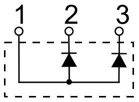
## Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules



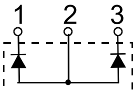
**SDEF2x60-17B1**
Side Common



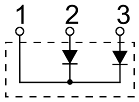
**SDEF2x60-17B2**
Center Common



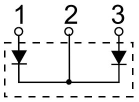
**SDAF2x60-17B1**
Side Common



**SDAF2x60-17B2**
Center Common

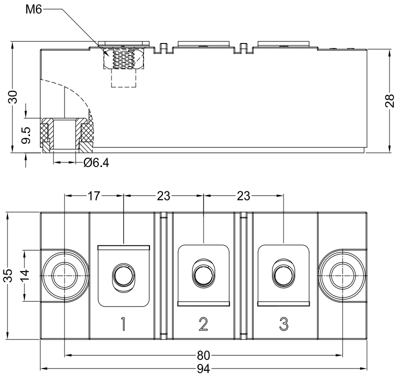


**SDKF2x60-17B1**
Side Common



**SDKF2x60-17B2**
Center Common

Dimensions in mm (1mm=0.0394")



| | VRSM<br>V | VRRM<br>V |
|---|---|---|
| **SDEF2x60-17B1** | **1700** | **1700** |
| **SDEF2x60-17B2** | **1700** | **1700** |

| | VRSM<br>V | VRRM<br>V |
|---|---|---|
| **SDAF2x60-17B1** | **1700** | **1700** |
| **SDAF2x60-17B2** | **1700** | **1700** |

| | VRSM<br>V | VRRM<br>V |
|---|---|---|
| **SDKF2x60-17B1** | **1700** | **1700** |
| **SDKF2x60-17B2** | **1700** | **1700** |

| Symbol | Test Conditions | Maximum Ratings | Unit |
|---|---|---|---|
| $I_{FRMS}$<br>$I_{FAVM}$<br>$I_{FRM}$ | $T_C$=85°C<br>$T_C$=85°C; rectangular, d=0.5<br>$t_p$<10us; rep. rating, pulse width limited by $T_{VJM}$ | 90<br>2 x 60<br>90 | A |
| $I_{FSM}$ | $T_{VJ}$=45°C t=10ms (50Hz), sine<br>t=8.3ms (60Hz), sine | 1000<br>1100 | A |
| | $T_{VJ}$=150°C t=10ms(50Hz), sine<br>t=8.3ms(60Hz), sine | 890<br>990 | |
| $I^2t$ | $T_{VJ}$=45°C t=10ms (50Hz), sine<br>t=8.3ms (60Hz), sine | 5000<br>5500 | $A^2s$ |
| | $T_{VJ}$=150°C t=10ms(50Hz), sine<br>t=8.3ms(60Hz), sine | 4400<br>4900 | |
| $T_{VJ}$<br>**$T_{stg}$**<br>**$T_{Hmax}$** | | -40...+150<br>-40...+125<br>110 | °C |
| $P_{tot}$ | $T_{case}$=25°C | 250 | W |
| **$V_{ISOL}$** | 50/60Hz, RMS t=1min<br>$I_{ISOL}$≤1mA t=1s | 4000<br>4500 | V~ |
| $M_d$ | Mounting torque (M6)<br>Terminal connection torque (M6) | 2.50-4/22-35<br>2.50-4/22-35 | Nm/lb.in. |
| ds<br>$d_A$<br>a | Creeping distance on surface<br>Strike distance through air<br>Maximum allowable acceleration | 12.7<br>9.6<br>50 | mm<br>mm<br>$m/s^2$ |
| Weight | | 158 | g |

# SDEF2x60-17B1

## Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

| Symbol | Test Conditions | Characteristic Values | | Unit |
|---|---|---|---|---|
| | | typ. | max. | |
| $I_R$ | $T_{VJ}$=25°C; $V_R$=$V_{RRM}$<br>$T_{VJ}$=25°C; $V_R$=0.8·$V_{RRM}$<br>$T_{VJ}$=125°C; $V_R$=0.8·$V_{RRM}$ | | 0.4<br>0.4<br>20 | mA |
| $V_F$ | $I_F$=60A; $T_{VJ}$=125°C<br>$T_{VJ}$=25°C<br>$I_F$=120A;$T_{VJ}$=125°C<br>$T_{VJ}$=25°C | 2.05<br>2.25<br>2.35<br>2.55 | 2.45<br>2.65<br>2.75<br>2.99 | V |
| $V_{TO}$ | For power-loss calculations only | | 1.50 | V |
| $r_T$ | $T_{VJ}$=125°C | | 8.85 | mΩ |
| $R_{thJH}$<br>$R_{thJC}$ | DC current<br>DC current | | 0.230<br>0.200 | K/W |
| $t_{rr}$ | $I_F$ =1A;$T_{VJ}$=25°C -di/dt=200A/us<br>$I_F$ =60A $T_{VJ}$=125°C -di/dt=200A/us | 155<br>750 | 210<br>860 | ns |
| $Q_{rr}$ | $T_{VJ}$=125°C, $I_F$=60A, -di/dt=500A/μs, $V_R$=1200 V | 16 | 20 | uC |
| $E_{rr}$ | $T_{VJ}$=125°C, $I_F$=60A, -di/dt=500A/μs, $V_R$=1200 V | 5 | | mJ |
| $I_{RM}$ | $V_R$=1200V; $T_{VJ}$=25°C<br>-di/dt=500A/us; $T_{VJ}$=125°C | | 40<br>60 | A<br>A |

### FEATURES

* International standard package with Copper baseplate
* Planar passivatd chips
* Short recovery time
* Low switching losses
* Soft recovery behaviour
* Isolation voltage 3600 V~
* RoHS compliant

### APPLICATIONS

* Antiparallel diode for high frequency switching devices
* Free wheeling diode in converters and motor control circuits
* Inductive heating and melting
* Uninterruptible power supplies (UPS)
* Ultrasonic cleaners and welders

### ADVANTAGES

* High reliability circuit operation
* Low voltage peaks for reduced protection circuits
* Low noise switching
* Low losses