



## Stud Diode

## Fast Recovery Rectifier Diode

**SKN 3F20**

**SKR 3F20**

### Features

- Small recovered charge
- Soft recovery
- Up to 1200 V reverse voltage
- Hermetic metal case with glass insulator
- Threaded stud ISO M5 or 10-32 UNF
- SKN: anode to stud  
SKR: cathode to stud

### Typical Applications\*

- Inverse diode for power transistor, GTO thyristor, asymmetric thyristor
- SMPS, inverters, choppers
- for severe ambient conditions

$V_{RSM}$ V	$V_{RRM}$ V	$I_{FRMS} = 41$ A (maximum value for continuous operation) $I_{FAV} = 20$ A (sin. 180; 5000 Hz; $T_c = 104$ °C)	
800	800	SKN 3F20/08	SKR 3F20/08
800	800	SKN 3F20/08UNF	SKR 3F20/08UNF
1000	1000	SKN 3F20/10	SKR 3F20/10
1000	1000	SKN 3F20/10UNF	SKR 3F20/10UNF
1200	1200	SKN 3F20/12	SKR 3F20/12
1200	1200	SKN 3F20/12UNF	SKR 3F20/12UNF

Symbol	Conditions	Values	Units
$I_{FAV}$	sin. 180; $T_c = 85$ (100) °C	26 (22)	A
$I_{FAV}$	K5,5; $T_a = 45$ °C; sin. 180; 5000 Hz	10	A
$I_{FSM}$	$T_{vj} = 25$ °C; 10 ms	375	A
	$T_{vj} = 150$ °C; 10 ms	310	A
$i^2t$	$T_{vj} = 25$ °C; 8,3 ... 10 ms	700	A²s
	$T_{vj} = 150$ °C; 8,3 ... 10 ms	480	A²s
$V_F$	$T_{vj} = 25$ °C; $I_F = 50$ A	max. 2,15	V
$V_{(TO)}$	$T_{vj} = 130$ °C	max. 1,3	V
$r_T$	$T_{vj} = 130$ °C	max. 12	mΩ
$I_{RD}$	$T_{vj} = 25$ °C; $V_{RD} = V_{RRM}$	max. 0,2	mA
$I_{RD}$	$T_{vj} = 130$ °C; $V_{RD} = V_{RRM}$	max. 20	mA
$Q_{rr}$	$T_{vj} = 130$ °C, $I_F = 50$ A,	1,5	μC
$I_{RM}$	$-di/dt = 15$ A/μs, $V_R = 30$ V	5	A
$t_{rr}$		600	ns
$E_{rr}$		-	mJ
$R_{th(j-c)}$		1,2	K/W
$R_{th(c-s)}$		0,5	K/W
$T_{vj}$		- 40 ... + 150	°C
$T_{stg}$		- 55 ... + 150	°C
$V_{isol}$		-	V~
$M_s$	to heatsink	1,5	Nm
$a$		5 * 9,81	m/s²
$m$	approx.	7	g
Case		E 7	



SKN



SKR

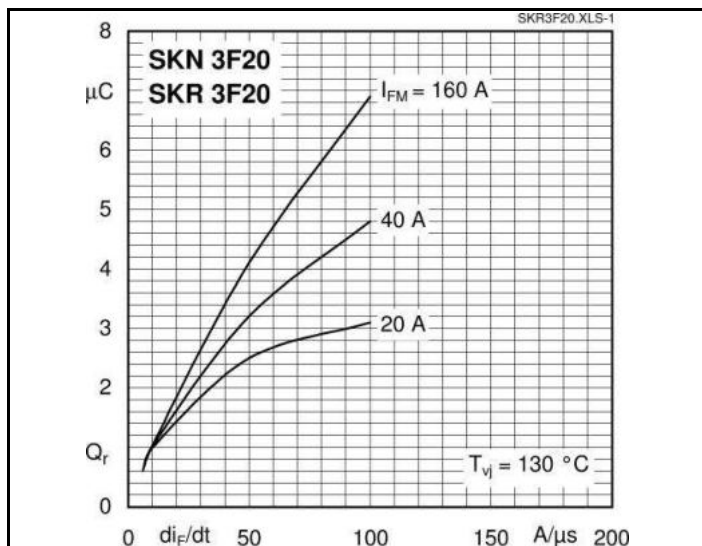


Fig. 1 Typ. recovery charge vs. current decrease

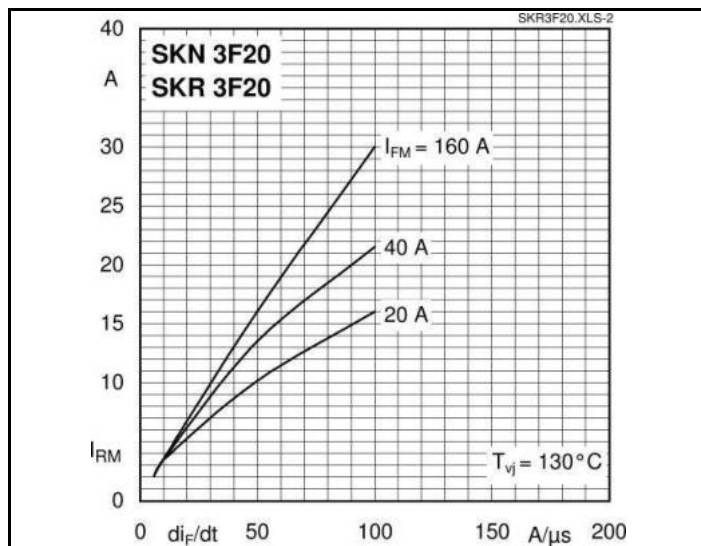


Fig. 2 Peak recovery current vs. current decrease

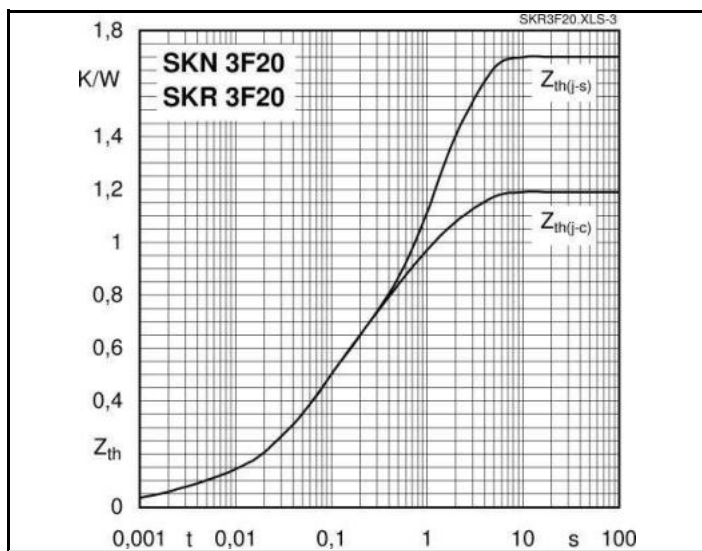


Fig. 3 Transient thermal impedance vs. time

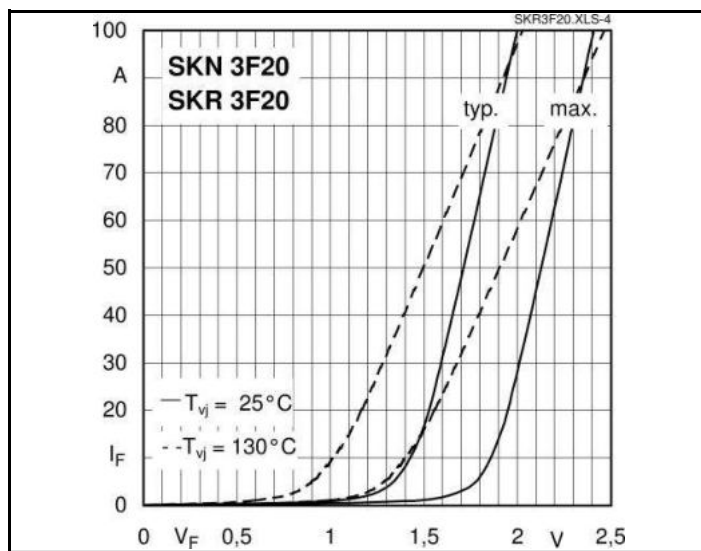


Fig. 4 Forward characteristics

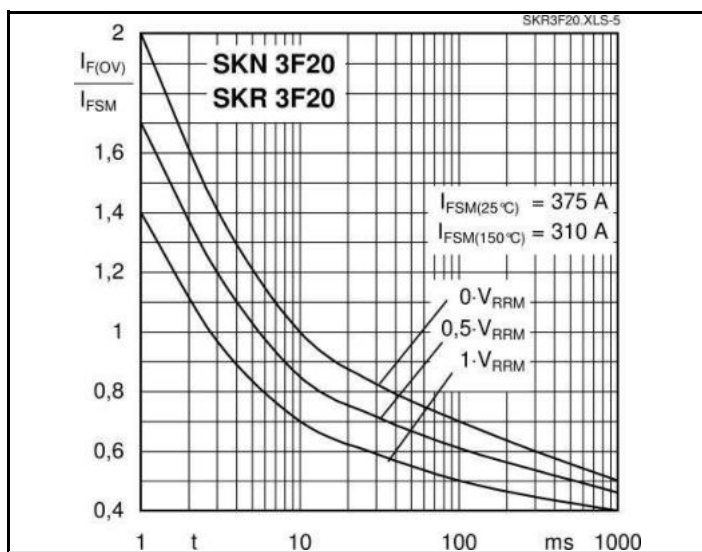
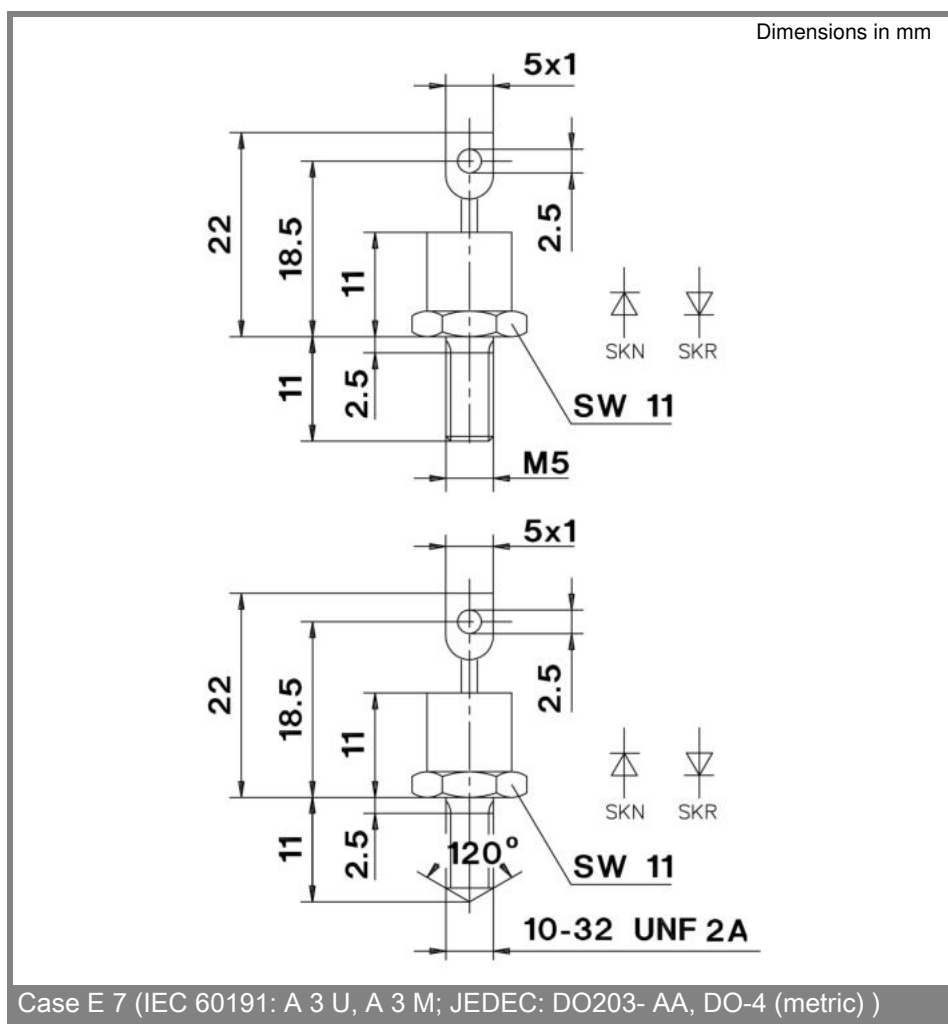


Fig. 5 Surge overload current vs. time



\* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.