



## Stud Diode

## Fast Recovery Rectifier Diode

**SKN 3F20**

**SKR 3F20**

### Features

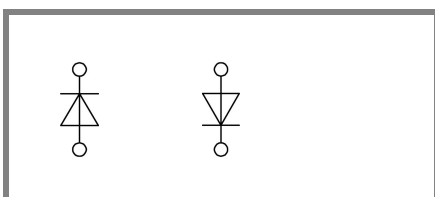
- Small recovered charge
- Soft recovery
- Up to 1200 V reverse voltage
- Hermetic metal case with glass insulator
- Threaded stud ISO M5 or 10-32 UNF
- SKN: anode to stud
- SKR: cathode to stud

### 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	A <sup>2</sup> s
	$T_{vj} = 150$ °C; 8,3 ... 10 ms	480	A <sup>2</sup> s
$V_F$	$T_{vj} = 25$ °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/s <sup>2</sup>
$m$	approx.	7	g
Case		E 7	



SKN

SKR

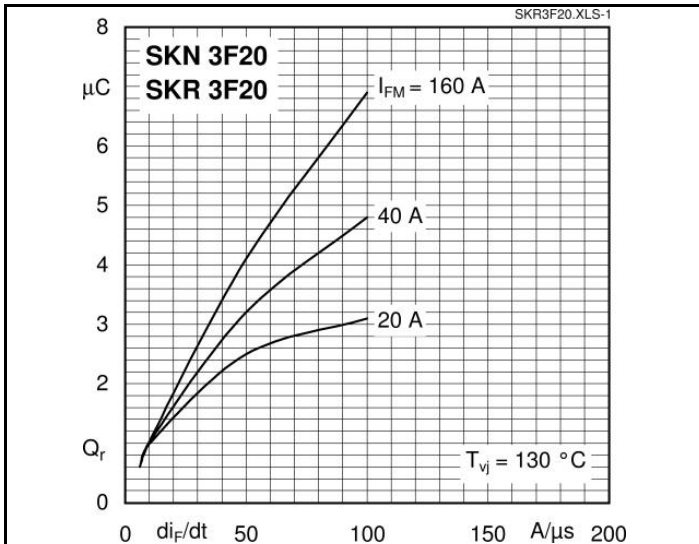


Fig. 1 Typ. recovery charge vs. current decrease

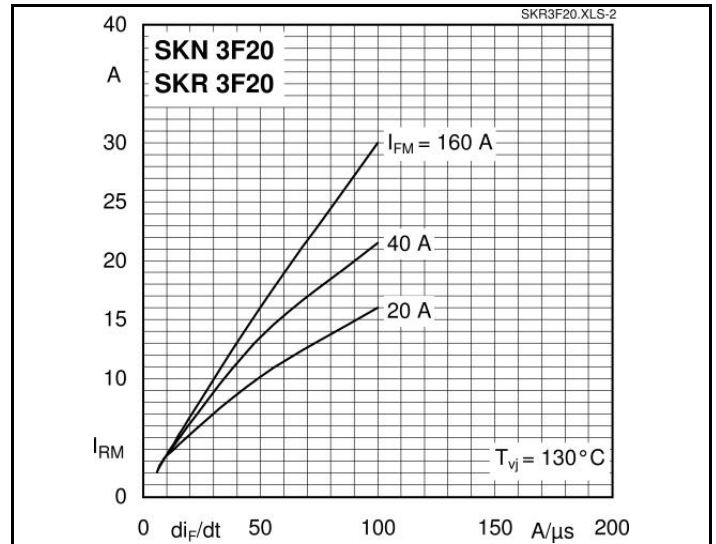


Fig. 2 Peak recovery current vs. current decrease

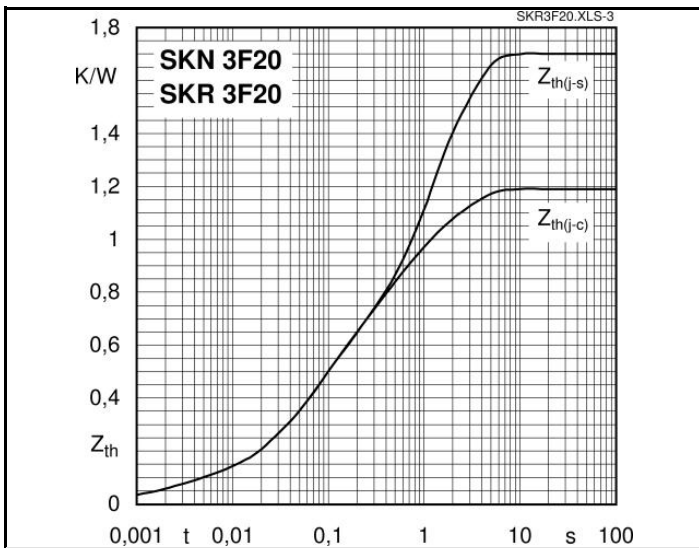


Fig. 3 Transient thermal impedance vs. time

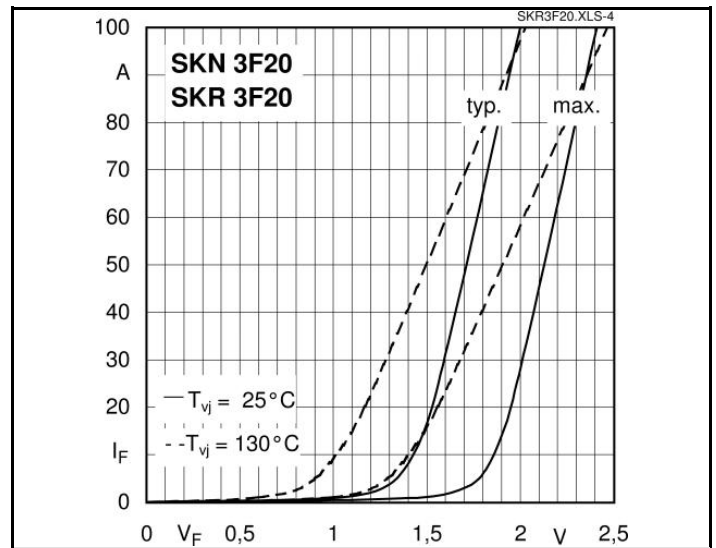


Fig. 4 Forward characteristics

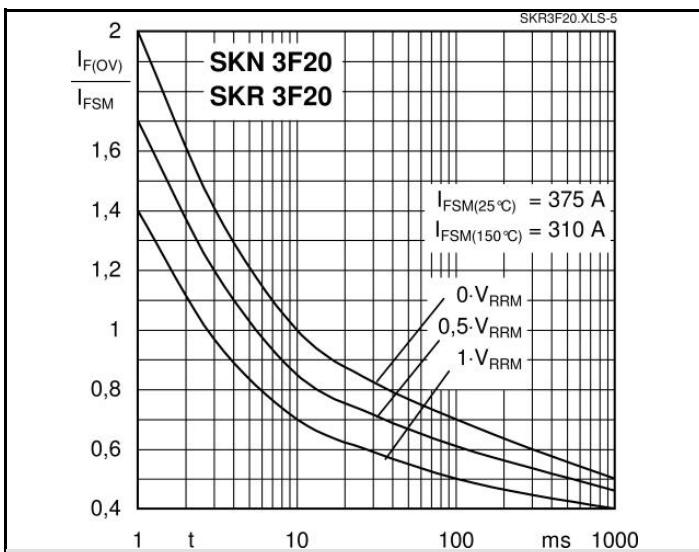
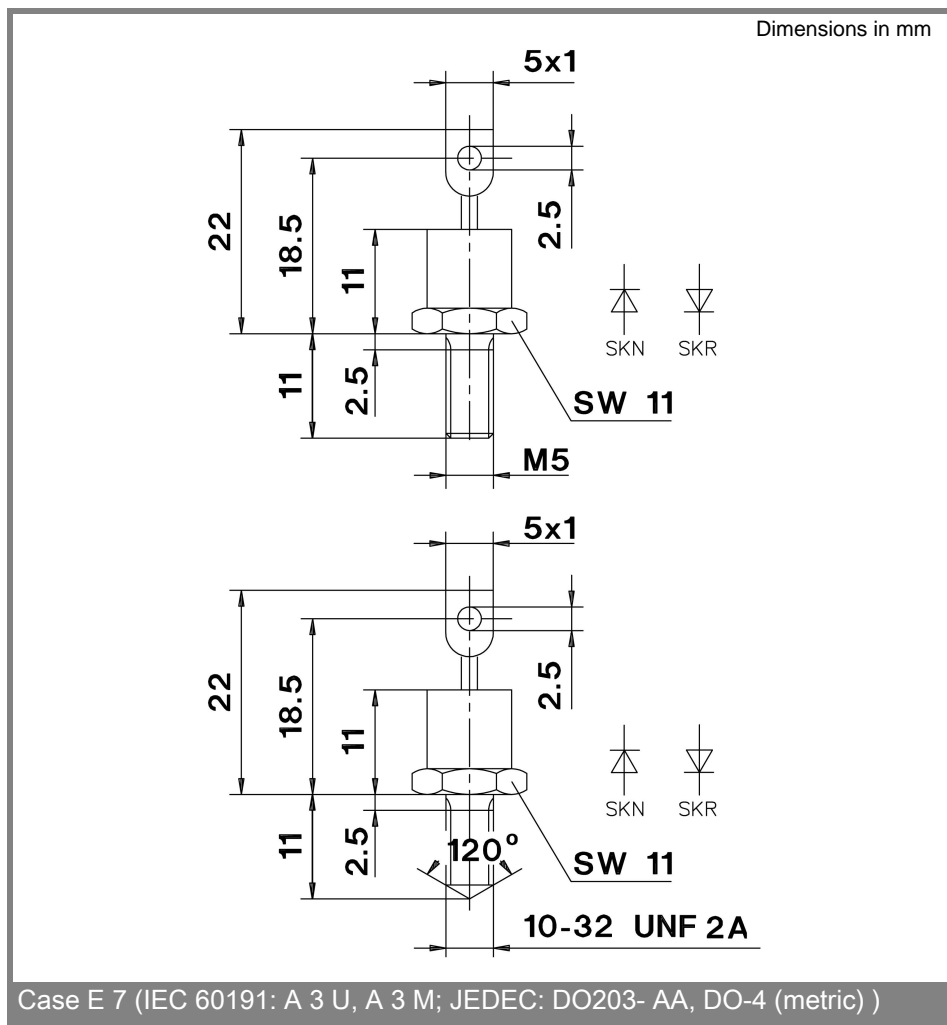


Fig. 5 Surge overload current vs. time



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