

January 8, 1998

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HIGH DENSITY, HIGH VOLTAGE, FAST RECOVERY SILICON RECTIFIER ASSEMBLY

QUICK REFERENCE DATA

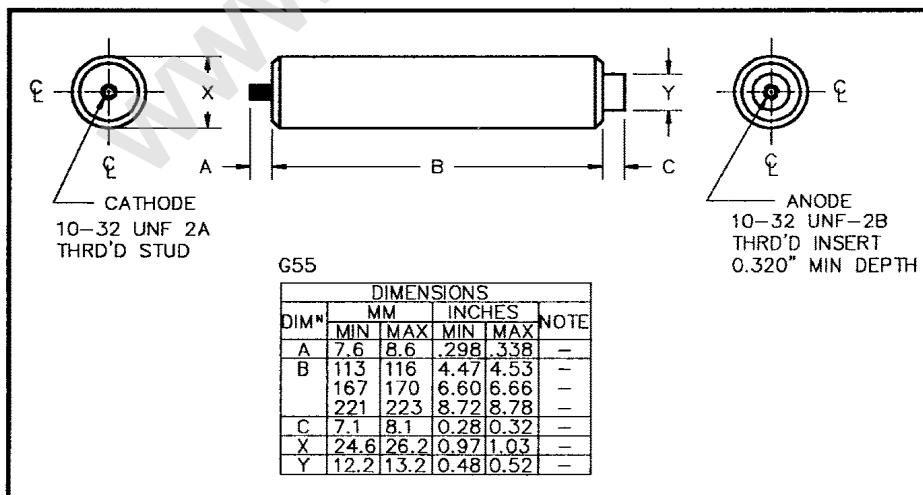
- Low reverse recovery time
- Low reverse leakage currents
- Low distributed and ground capacitance
- Corona free design
- Air or oil environments

- $V_R = 30\text{kV} - 60\text{kV}$
- $I_F = 200\text{mA}$
- $t_{rr} = 300\text{nS}$
- $I_R = 1.0\mu\text{A}$

ABSOLUTE MAXIMUM RATINGS (@ 25°C unless otherwise specified)

	Symbol	SCKV30K12F	SCKV45K12F	SCKV60K12F	Unit
Working reverse voltage	V_{RWM}	30	45	60	kV
Average forward current in air @ 25°C in oil @ 55°C in forced air 600CFM	$I_{F(AV)}$	← 200 →	← 800 →	← 400 →	mA mA mA
Non-repetitive surge current $t_p = 8.3\text{mS}$, @ 25°C	I_{FSM}	← 10 →			A
Storage temperature range	T_{STG}	← -55 to +150 →			°C
Operating temperature range	T_{OP}	← -55 to +150 →			°C
Body length ±0.030"	dim B	4.53	6.66	8.78	inches

MECHANICAL



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ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	SCKV30K12F	SCKV45K12F	SCKV60K12F	Unit
Max. forward voltage drop @ $I_F = 100\text{mA}$, $T_j = 25^\circ\text{C}$	V_F	60	95	125	V
Max. reverse leakage current @ V_{RWM} , $T_j = 25^\circ\text{C}$	I_R	← 1.0 →			μA
@ V_{RWM} , $T_j = 100^\circ\text{C}$	I_R	← 25 →			μA
Max. reverse recovery time ¹ 0.5A I_F to 1.0A I_R . Recovers to 0.25A I_{RR} .	t_{rr}	← 300 →			nS
Max. fusing current $t_p = 8.3\text{mS}$	I^2t	← 0.4 →			A^2S

¹ Measured on discrete devices prior to assembly

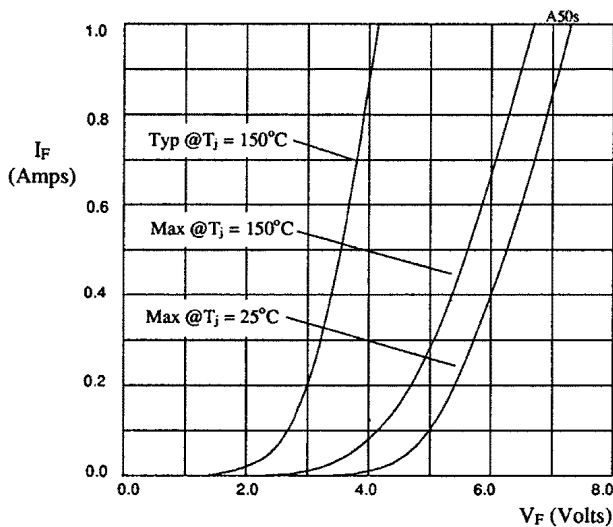


Fig 1. Forward voltage drops as a function of forward current.

Multiplication tables for fig 1.

DEVICE	X-axis
SCKV30K12F	x12
SCKV40K12F	x19
SCKV60K12F	x25

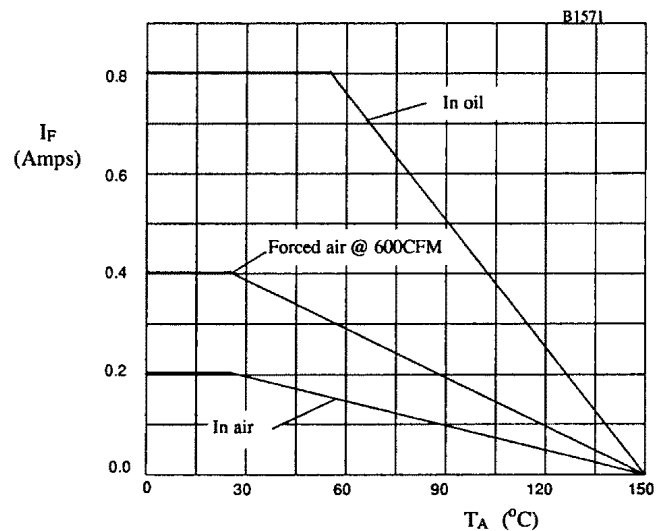


Fig 2. Maximum average forward current against ambient temperature.