

SEMTECH

**STANDARD RECOVERY
HIGH VOLTAGE
RECTIFIER ASSEMBLY**

**SCKV12K40
SCKV18K40
SCKV25K40**

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TEL:805-498-2111 FAX:805-498-3804 WEB:http://www.semtech.com

HIGH DENSITY, HIGH VOLTAGE, STANDARD RECOVERY RECTIFIER ASSEMBLY

QUICK REFERENCE DATA

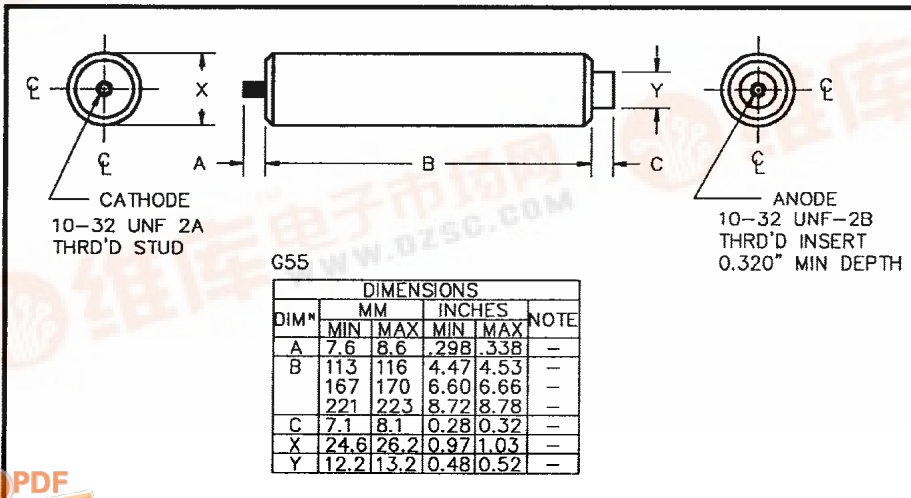
- High reverse voltages
- Low reverse leakage current
- Low distributed and ground capacitance
- Corona free design
- Air or oil environments

- $V_R = 12\text{kV} - 25\text{kV}$
- $I_F = 1.0\text{A}$
- $t_{rr} = 2.0\mu\text{S}$
- $I_R = 1.0\mu\text{A}$

ABSOLUTE MAXIMUM RATINGS

	Symbol	SCKV12K40	SCKV18K40	SCKV25K40	Unit
Working reverse voltage	V_{RWM}	12	18	25	kV
Surge reverse voltage	V_{RSM}	13.2	19.8	27.5	kV
Average forward current in air @ 25°C in oil @ 55°C in forced air 600 CFM	$I_{F(AV)}$	← 1.0 →	← 3.0 →	← 2.0 →	A
Non-repetitive surge current $t_p = 8.3\text{mS}$, @ 25°C	I_{FSM}	← 150 →			A
Storage temperature range	T_{STG}	← -55 to +150 →			°C
Operating temperature range	T_{OP}	← -55 to +150 →			°C
Body length Max.	dim B	4.53	6.66	8.78	inches

MECHANICAL



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ELECTRICAL CHARACTERISTICS

	Symbol	SCKV12K40	SCKV18K40	SCKV25K40	Unit
Max. forward voltage drop @ $I_F = 3.0A$, $T_j = 25^\circ C$	V_F	12.0	19.0	25.0	V
Max. reverse leakage current @ V_{RWM} , $T_j = 25^\circ C$	I_R	←—————→	1.0	—————→	μA
@ V_{RWM} , $T_j = 100^\circ C$	I_R	←—————→	20	—————→	μA
Max. reverse recovery time ¹ 0.5A I_F to 1.0A I_R . Recovers to 0.25A I_{RR} .	t_{rr}	←—————→	2.0	—————→	μS
Max. fusing current $t_p = 8.3ms$	I^2t	←—————→	92	—————→	A^2S

1. Measured on discrete devices prior to assembly

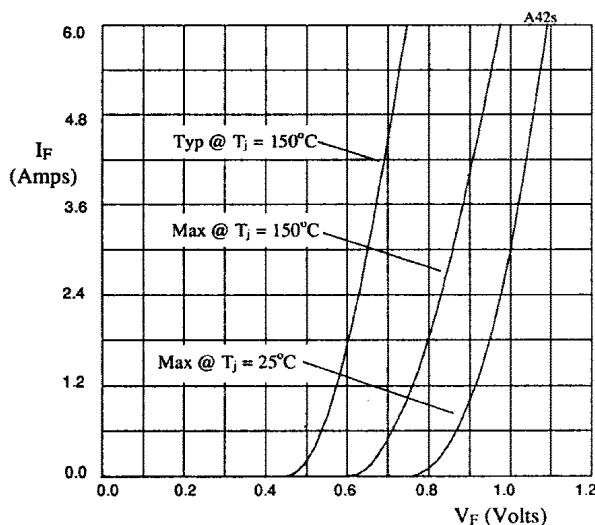


Fig 1. Forward voltage drop as a function of forward current for use with multiplication table.

Multiplication tables for fig 1.

SCKV12K40 X-axis x12
SCKV18K40 X-axis x19
SCKV25K40 X-axis x25

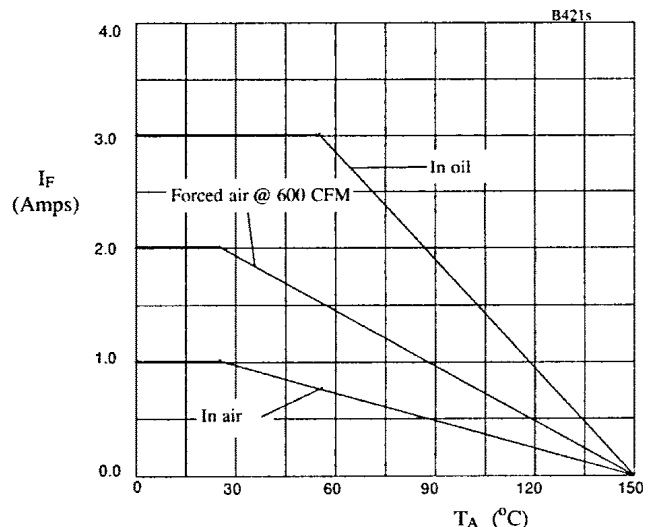


Fig 2. Maximum average forward current against ambient temperature.