

STANDARD RECOVERY DIODES

Stud Version

Features

- High current carrying capability
- High voltage ratings up to 2000V
- High surge current capabilities
- Stud cathode and stud anode version

Typical Applications

- Converters
- High power drives
- Power supplies
- Machine tool controls
- Medium traction applications
- Power supplies



Parameters	SM70HF..	Units
$I_{F(AV)}$	70	A
@ TC	90	°C
$I_{F(RMS)}$	110	A
I_{FSM} @ 50Hz	1200	A
@ 60Hz	1200	A
I^2t @ 50Hz	7000	A ² S
@ 60Hz	6500	A ² S
V_{RRM} range	400 to 2000	V
T_J	-40 to 160	°C

ELECTRICAL SPECIFICATIONS
Voltage Ratings

Type number	Voltage Code	V_{RRM} , maximum repetitive peak reverse voltage V	V_{RSM} , maximum non-repetitive peak rev. voltage V	I_{RRM} max. @ $T_J = T_{J \text{ max.}}$ mA
SM70HF..	40	400	500	30
	80	800	900	
	120	1200	1300	
	140	1400	1500	
	160	1600	1700	
	200	2000	2100	

Forward Conduction

Parameter	SM70HF..	Units	Conditions
$I_{F(AV)}$ Max. average forward current @ Case temperature	70	A	180° conduction, half sine wave
	90	°C	
$I_{F(RMS)}$ Max. RMS forward current	79	A	DC @ $T_C = 75^\circ\text{C}$ (04 to 20), $T_C = 36^\circ\text{C}$ (25 to 32)
I_{FSM} Maximum peak, one-cycle forward, non-repetitive surge current	1200	A	t = 10ms No voltage
	1200		t = 8.3ms reapplied
	1000		t = 10ms 100% V_{RRM}
	1050		t = 8.3ms reapplied
$I^2 t$ Maximum $I^2 t$ for fusing	7000	$A^2 s$	t = 10ms No voltage
	6500		t = 8.3ms reapplied
	5000		t = 10ms 100% V_{RRM}
	4500		t = 8.3ms reapplied
$I^2 \sqrt{t}$ Maximum $I^2 \sqrt{t}$ for fusing	70000	$A^2 \sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied
$V_{F(TO)}$ Low level value of threshold voltage	0.80	V	$T_J = 200^\circ\text{C}$
r_f Max. value of forward slope resistance	2.30	m Ω	
V_{FM} Max. forward voltage drop	1.30	V	($I_{FM} \times \pi \times I_{F(AV)}$ (220A Peak), $T_J = 25^\circ\text{C}$)



SM70HF.. SERIES

Thermal and Mechanical Specifications

Parameter	SM70HF..	Units	Conditions
T J	- 40 to 150	°C	
Tstg	- 40 to 150		
R thJC Thermal Impedance, max.	0.45	K/W	DC operation
RthCS Max. thermal resistance, case to heatsink	0.25		Mounting surface, smooth, flat and greased
T Max. allowed mounting torque +0 -20%	3.5	Nm	Not lubricated threads
	2.3		Lubricated threads
wt Approximate weight	17	g	
Case style	DO-203AB (DO-5)		See Outline Table

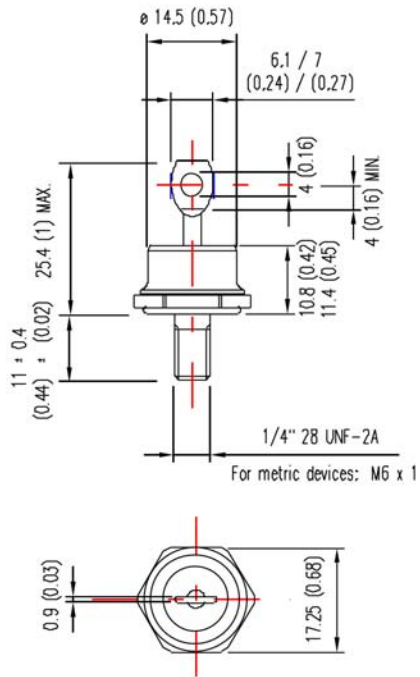
Ordering Information Table

Device Code

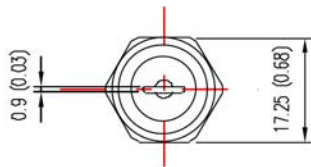
SM	70	HF	R	100	M
1	2	3	4	5	6

- 1 - Corporation code
- 2 - Average Forward Current: I_{FAV}
- 3 - Diode
- 4 - None = Stud Normal Polarity (Cathode to Stud)
- R = Stud Reverse Polarity (Anode to Stud)
- 5 Voltage code: Code x 100 = VRRM
- 6 None = Stud base DO-203AB (DO-5) 1/4" 28UNF-2A
M = Stud base DO-203AB (DO-5) M6X1

Outline Table



40HF(R)
Case Style DO-203AB (DO-5)
All dimensions in millimeters (inches)



41HF(R)
Case Style DO-203AB (DO-5)
All dimensions in millimeters (inches)

