YZPST

SM40HF.. SERIES

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		SM40HF..	Units
$I_{F(AV)}$		40	A
	@ TC	90	°C
$I_{F(RMS)}$		62	A
I_{FSM}	@ 50Hz	570	A
	@ 60Hz	590	A
I^2t	@ 50Hz	1600	A^2S
	@ 60Hz	1450	A^2S
V_{RRM}	range	400 to 2000	V
T_J		-40 to 160	°C

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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. @ $T_J = T_J$ max. mA
SM40HF..	40	400	500	30
	80	800	900	
	120	1200	1300	
	140	1400	1500	
	160	1600	1700	
	200	2000	2100	

Forward Conduction

Parameter		SM40HF..	Units	Conditions		
$I_{F(AV)}$	Max. average forward current	40	A	180° conduction, half sine wave		
	@ Case temperature	90	°C			
$I_{F(RMS)}$	Max. RMS forward current	62	A	DC @ T_C = 75°C (04 to 20), T_C = 36°C (25 to 32)		
I_{FSM},	Maximum peak, one-cycle forward, non-repetitive surge current	570	A	t = 10ms	No voltage reapplied	Sinusoidal half wave, Initial T = T max.
		590		t = 8.3ms		
		480		t = 10ms	100% V_{RRM} reapplied	
		500		t = 8.3ms		
I^2t	Maximum I^2t for fusing	1600	A^2s	t = 10ms	No voltage reapplied	
		1450		t = 8.3ms		
		1150		t = 10ms	100% V_{RRM} reapplied	
		1050		t = 8.3ms		
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	16000	$A^2\sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied		
$V_{F(TO)}$	Low level value of threshold voltage	0.65	V	T_J = 200°C		
r_f	Max. value of forward slope resistance	4.30	mΩ			
V_{FM}	Max. forward voltage drop	1.30	V	(I_{FM} x π x $I_{F(AV)}$ (125A peak), T_J = 25°C		

Thermal and Mechanical Specifications

	Parameter	SM40HF..	Units	Conditions
T J		- 40 to 150	°C	
Tstg		- 40 to 150		
R thJC	Thermal Impedance, max.	0.95	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	40	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