

DATA SHEET

TYPE: 40A/200V

Package: T0-220AB

Prepared by	Audit by	Approved by

Product specifications

Product Application:

- Switch mode Power Supply
- Inverters
- Free Wheeling Diode
- Motor Controllers
- Converters
- Inverters
- Snubber Diode
- PFC

VRRM = 200V

IFAV = 40A(20A*2)

VF = 1.05V

Trr = 30ns

Product Features:

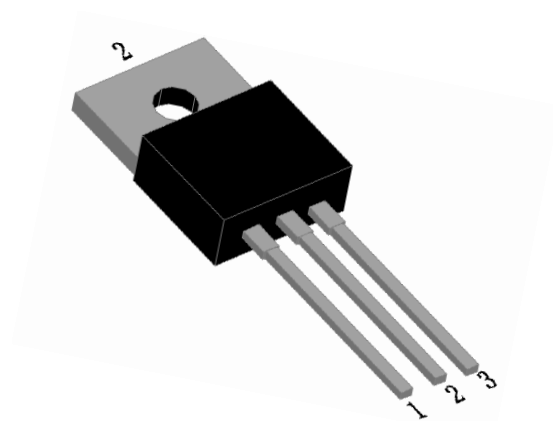
- Ultrafast Recovery Times
- Soft Recovery Characteristics
- Popular TO-220AB Package
- Low Forward Voltage
- Low Leakage Current
- Avalanche Energy Rated

Product Benefits:

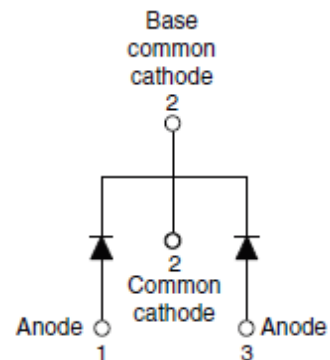
- Low Losses
- Low Noise Switching
- Cooler Operation
- Higher Reliability Systems
- Increased System Power Density

Package:

S2FD40C20



Circuit diagram



MAXIMUM RATINGS

 All Ratings: $T_c = 25^{\circ}C$ unless otherwise specified.

Symbol	Characteristic / Test Conditions	TYP	UNIT
VR	Maximum D.C. Reverse Voltage	200	Volts
VRRM	Maximum Peak Repetitive Reverse Voltage		
VRWM	Maximum Working Peak Reverse Voltage	160	
IF(AV)	Maximum Average Forward Current ($T_c = 100^{\circ}C$, Duty Cycle = 0.5)	40 (20*2)	Amps
IFSM	Non-Repetitive Forward Surge Current ($T_j = 25^{\circ}C$, 8.3ms)	300	
TJ , TSTG	Operating and Storage Temperature Range	-55 to 150	$^{\circ}C$
TL	Lead Temperature for 10 Sec	260	

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	TYP	MAX	UNIT	
VF	Forward Voltage	IF = 20A, Tj = 25 $^{\circ}C$	1.05	1.5	Volts
		IF = 20A, Tj = 150 $^{\circ}C$	0.85	1.1	
IRM	Maximum Reverse Leakage Current	VR = 200V, Tj = 25 $^{\circ}C$		5	μA
		VR = 200V, Tj = 150 $^{\circ}C$		100	
Trr	Reverse Recovery Time	IF=0.5A IRR=0.25A	30	35	ns
CJ	Junction Capacitance, VR = 200V		25		pF

THERMAL AND MECHANICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	S2FD40C20	UNIT
R θ_{JC}	Junction-to-Case Thermal Resistance	2.0	$^{\circ}C/W$
Wt	Package Weight	1.89	g
Torque	Maximum Mounting Torque	0.8	N.m

TYPICAL PERFORMANCE CURVES

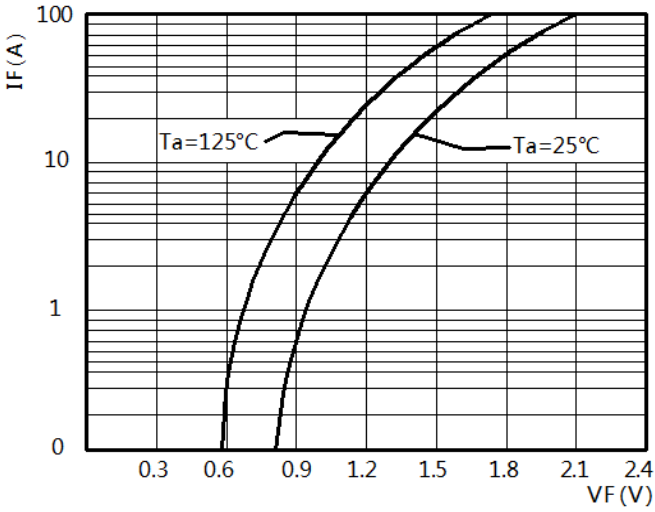


FIGURE 1. FORWARD CURRENT vs FORWARD VOLTAGE

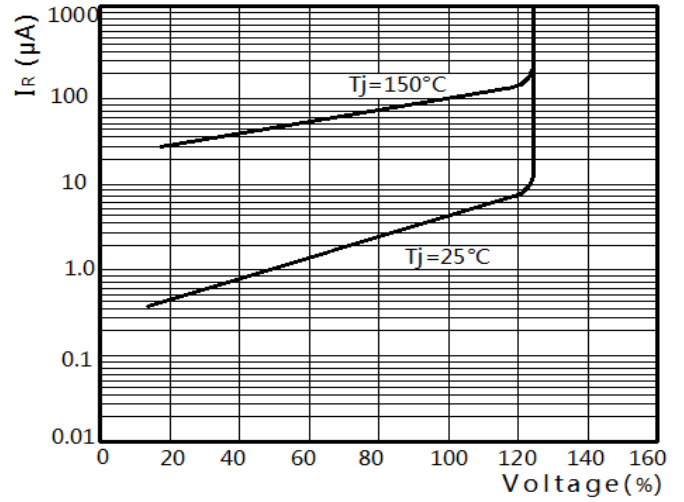


FIGURE 2. REVERSE CURRENT vs REVERSE VOLTAGE

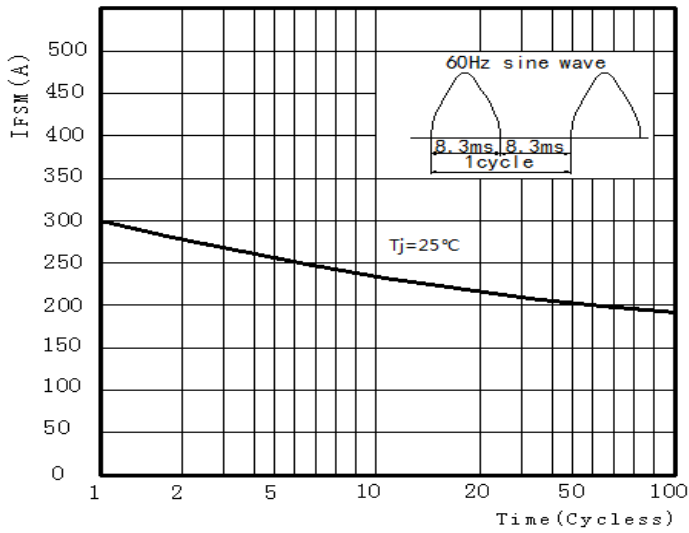


FIGURE 3. Peak Surge Forward Capability

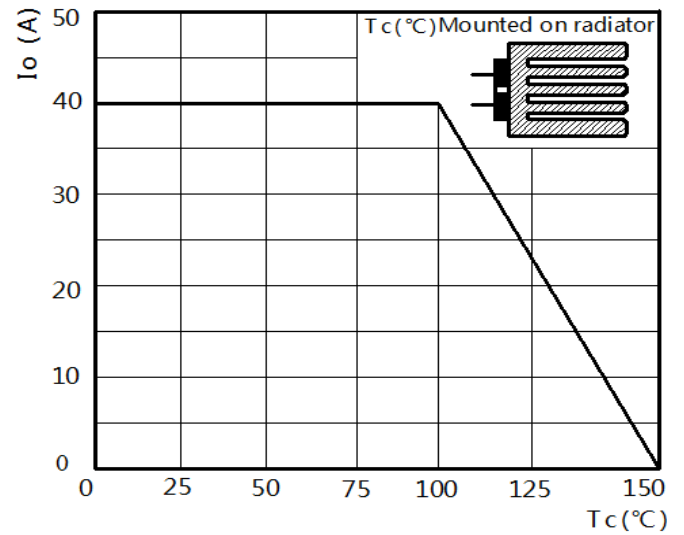


FIGURE 4. CURRENT DERATING CURVE

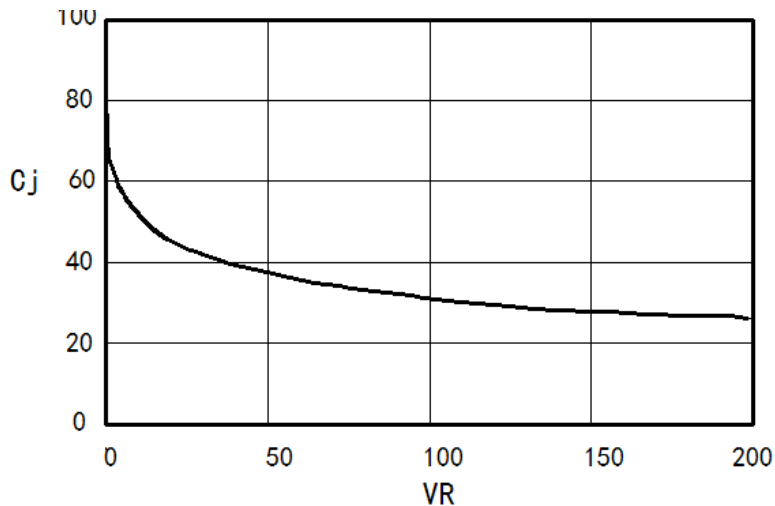
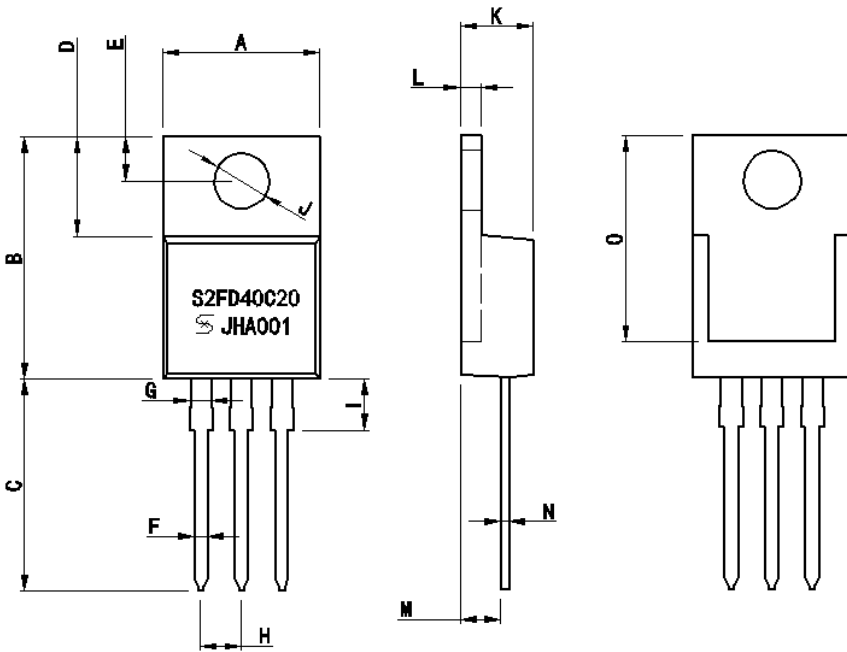


FIGURE 5. JUNCTION CAPACITANCE vs REVERSE VOLTAGE

Dimensioned drawing (TO-220AB)



Dim.	Millimeter		Inches	
	min	max	min	max
A	9.7	10.1	0.381	0.397
B	15.1	15.3	0.594	0.602
C	13.2	13.6	0.519	0.535
D	6.10	6.50	0.240	0.255
E	2.60	3.00	0.102	0.118
F	0.80	0.90	0.031	0.035
G	1.25	1.35	0.049	0.053
H	2.44	2.64	0.196	0.203
I	3.05	3.45	0.120	0.135
J	3.50	3.70	0.137	0.145
K	4.40	4.80	0.173	0.188
L	1.25	1.35	0.049	0.053
M	2.50	2.60	0.098	0.102
N	0.45	0.55	0.017	0.0215
O	12.8	13.2	0.503	0.519

Marking

