

DATA SHEET

TYPE: 30A/600V

Package: T0-220F

Prepared by	Audit by	Approved by

Product specifications

Product Applicationg:

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

$V_{RRM} = 600V$

$I_{FAV} = 30A$

$V_F = 2.0V$

$TRR = 35ns$

Product Features:

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

Product Benefits:

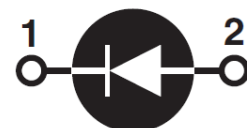
- Low Losses
- Low Noise Switching
- Cooler Operation
- Higher Reliability Systems
- Increased System Power Density

Parkage:

S1FD30C60 F



Circuit diagram



1 - Cathode

2 - Anode

MAXIMUM RATINGS

All Ratings: Tc = 25° C unless otherwise specified.

Symbol	Characteristic / Test Conditions	TYP	UNIT
VR	Maximum D.C. Reverse Voltage	600	Volts
VRRM	Maximum Peak Repetitive Reverse Voltage		
IF(AV)	Maximum Average Forward Current (Tc = 100°C, Duty Cycle = 0.5)	30	Amps
IFSM	Non-Repetitive Forward Surge Current (TJ = 25°C, 8.3ms)	300	
TJ ,TSTG	Operating and Storage Temperature Range	-55 to 150	° C
TL	Lead Temperature for 10 Sec	260	

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions		TYP	MAX	UNIT
VF	Forward Voltage	IF = 30A, Tj = 25°C	2.0	3.0	Volts
		IF = 30A, Tj = 150°C	1.5	2.0	
IRM	Maximum Reverse Leakage Current	VR = 600V, Tj =25°C		5	μ A
		VR = 600V, Tj =150°C		100	
Trr	Reverse Recovery Time	IF=0.5A IRM=1A IRR=0.25A TC=25°C	35	45	ns
		IF =30A, VR =400V dIF/dt = -200A/μ s	40	60	ns
CJ	Junction Capacitance, VR =200V		25		pF

THERMAL AND MECHANICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	S1FD30C60 F	UNIT
Rθ JC	Junction-to-Case Thermal Resistance	2.8	°C/W
WT	Package Weight	1.6	g
Torque	Maximum Mounting Torque	0.5	N.m

TYPICAL PERFORMANCE CURVES

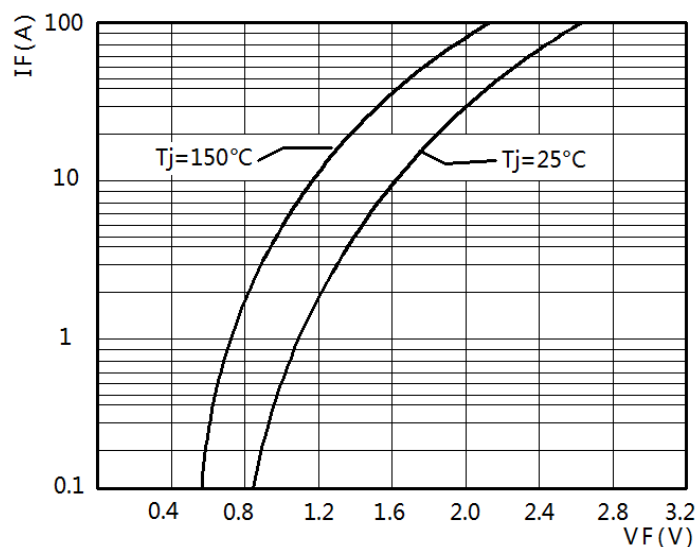


FIGURE 1. FORWARD CURRENT vs FORWARD VOLTAGE

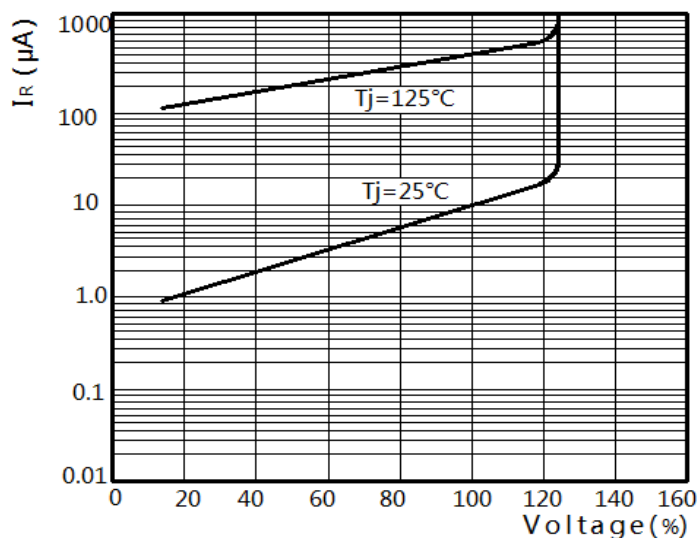


FIGURE 2. REVERSE CURRENT vs REVERSE VOLTAGE

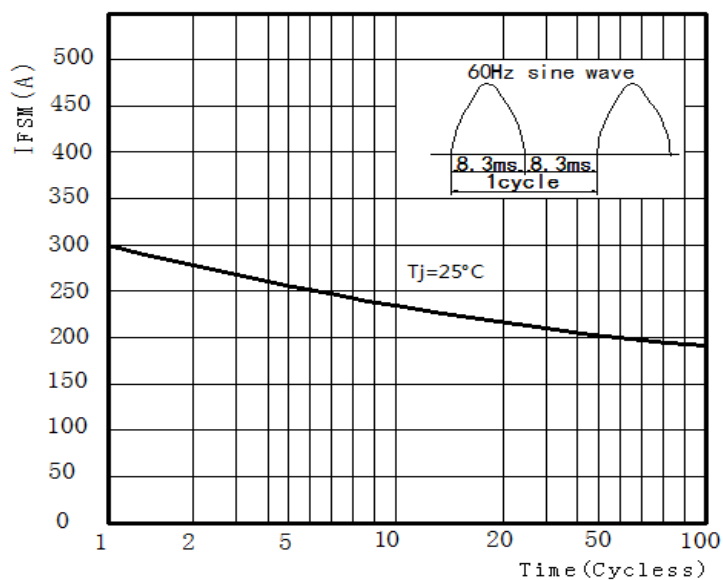


FIGURE 3. Peak Surge Forward Capability

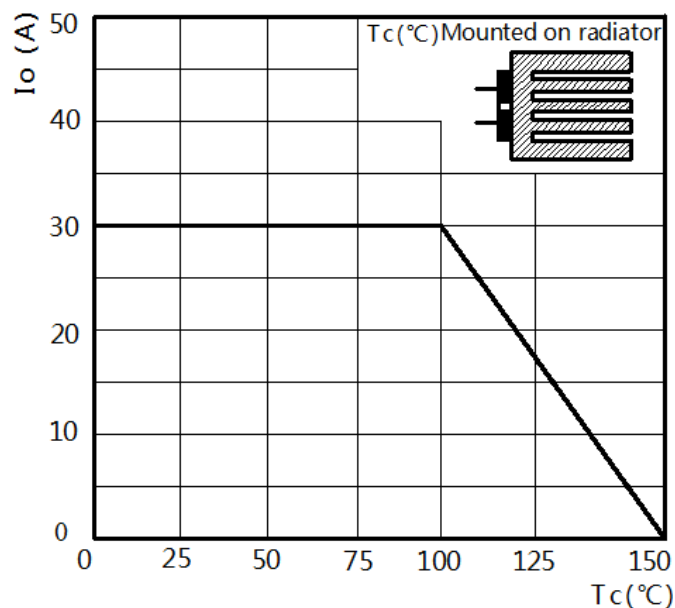
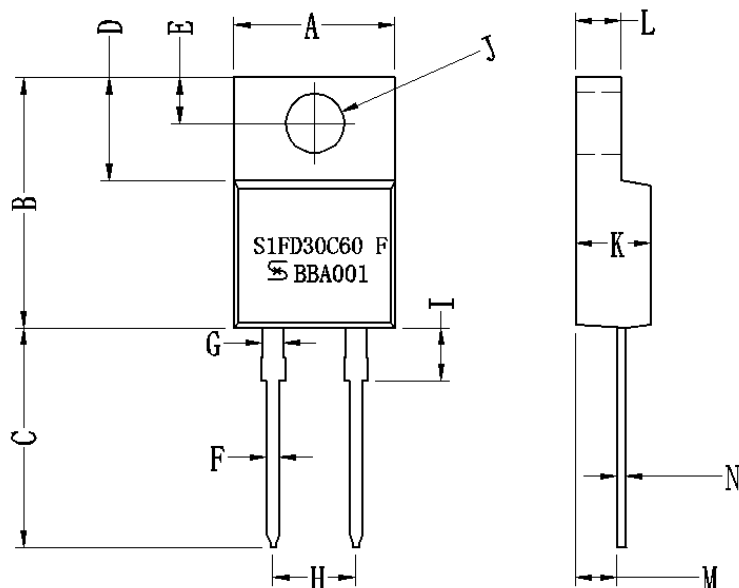


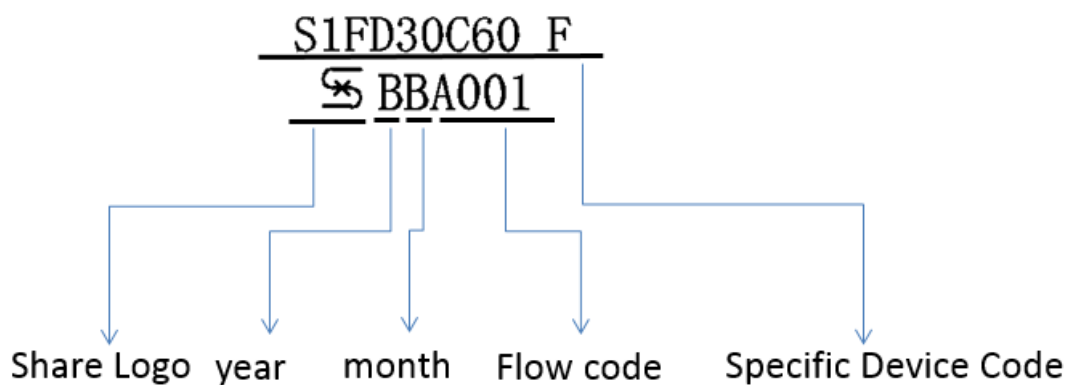
FIGURE 4. CURRENT DERATING CURVE

Dimensioned drawing (TO-220AC F)



Dim.	Millimeter		Inches	
	min	max	min	max
A	9.5	10.5	0.39	0.43
B	15.5	16.5	0.64	0.68
C	13	14	0.51	0.55
D	6.5	7.1	0.27	0.29
E	2.5	3.5	0.1	0.14
F	0.5	0.9	0.02	0.04
G	1.0	1.4	0.04	0.06
H	4.9	5.3	0.20	0.22
I	2	4	0.08	0.16
J	3.0	3.4	0.12	0.14
K	4.5	4.9	0.18	0.20
L	2.6	3.0	0.11	0.12
M	2.6	3.0	0.11	0.12
N	0.4	0.8	0.02	0.03

Marking



Ordering information

Type number	Package name	Packing method	Small packing quantity	Carton quantity	Package issue date
S1FD30C60 F	TO-220 AC F	Tube	50	5000	2018.9