16A, 50V - 600V Super Fast Surface Mount Rectifier

FEATURES

- Low forward voltage drop
- Ideal for automated placement
- High current capability
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

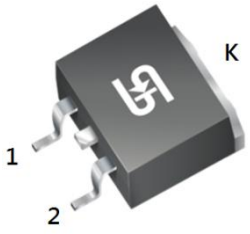
- DC to DC converter
- Switching mode converters and inverters
- Freewheeling application

MECHANICAL DATA

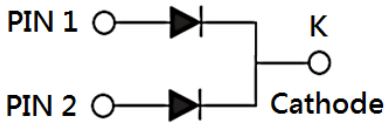
- Case: TO-263AB (D^2PAK)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.41g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	16	A
V_{RRM}	50 - 600	V
I_{FSM}	125	A
$T_{J\ MAX}$	150	°C
Package	TO-263AB (D^2PAK)	
Configuration	Dual dies	

Pb-Free RoHS COMPLIANT HALOGEN FREE



TO-263AB (D^2PAK)



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)										
PARAMETER	**SYMBOL**	**SFS 1601 G**	**SFS 1602 G**	**SFS 1603 G**	**SFS 1604 G**	**SFS 1605 G**	**SFS 1606 G**	**SFS 1607 G**	**SFS 1608 G**	**UNIT**
Marking code on the device		SFS 1601G	SFS 1602G	SFS 1603G	SFS 1604G	SFS 1605G	SFS 1606G	SFS 1607G	SFS 1608G	
Repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	500	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	105	140	210	280	350	420	V
Forward current	I_F	16								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	125								A
Junction temperature	T_J	-55 to +150								°C
Storage temperature	T_{STG}	-55 to +150								°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-case thermal resistance	$R_{\Theta JC}$	2.5	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode[1]	SFS1601G SFS1602G SFS1603G SFS1604G	I_F = 8A, T_J = 25°C	V_F	-	0.975	V
	SFS1605G SFS1606G			-	1.300	V
	SFS1607G SFS1608G			-	1.700	V
Reverse current @ rated V_R per diode[2]		T_J = 25°C	I_R	-	10	μA
		T_J = 125°C		-	400	μA
Junction capacitance per diode	SFS1601G SFS1602G SFS1603G SFS1604G	1MHz, V_R = 4.0V	C_J	80	-	pF
	SFS1605G SFS1606G SFS1607G SFS1608G			60	-	pF
Reverse recovery time		I_F = 0.5A, I_R = 1.0A I_{rr} = 0.25A	t_{rr}	-	35	ns

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
SFS16xG	TO-263AB (D^2PAK)	800 / Tape & Reel

Notes:

1. "x" defines voltage from 50V(SFS1601G) to 600V(SFS1608G)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

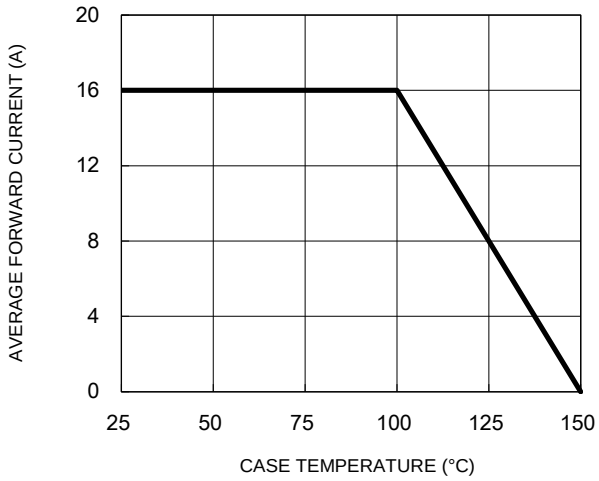


Fig.2 Typical Junction Capacitance

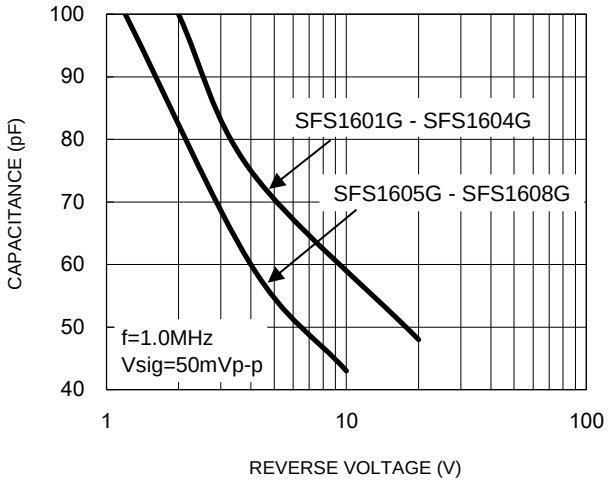


Fig.3 Typical Reverse Characteristics

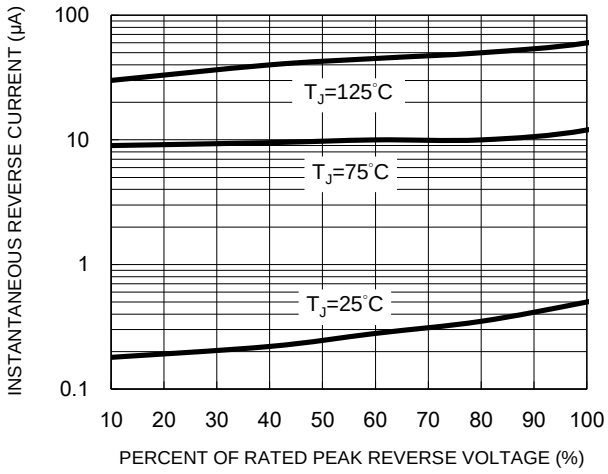


Fig.4 Typical Forward Characteristics

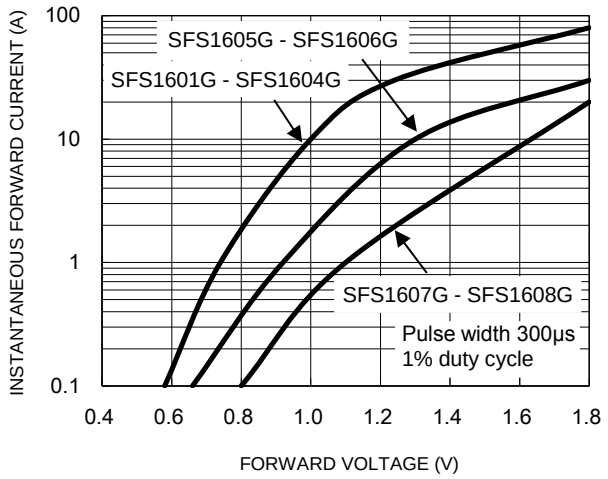
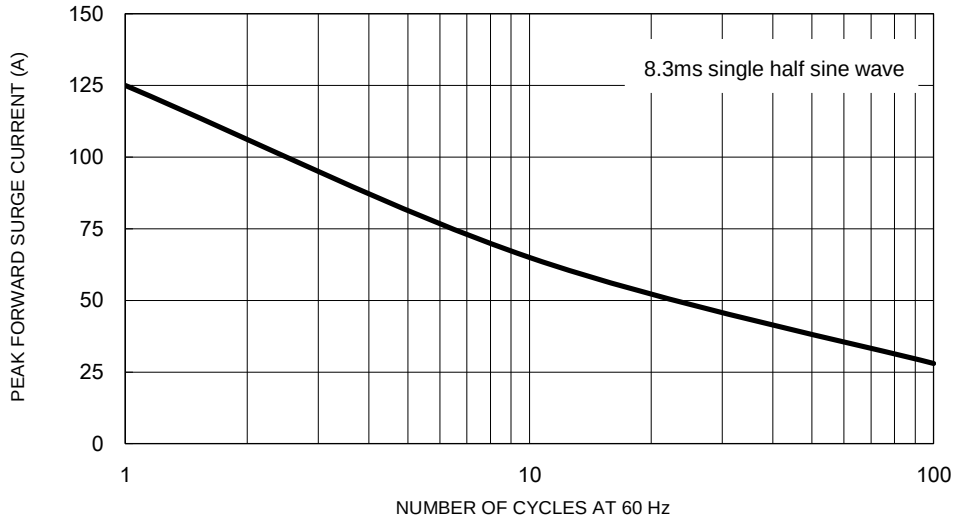


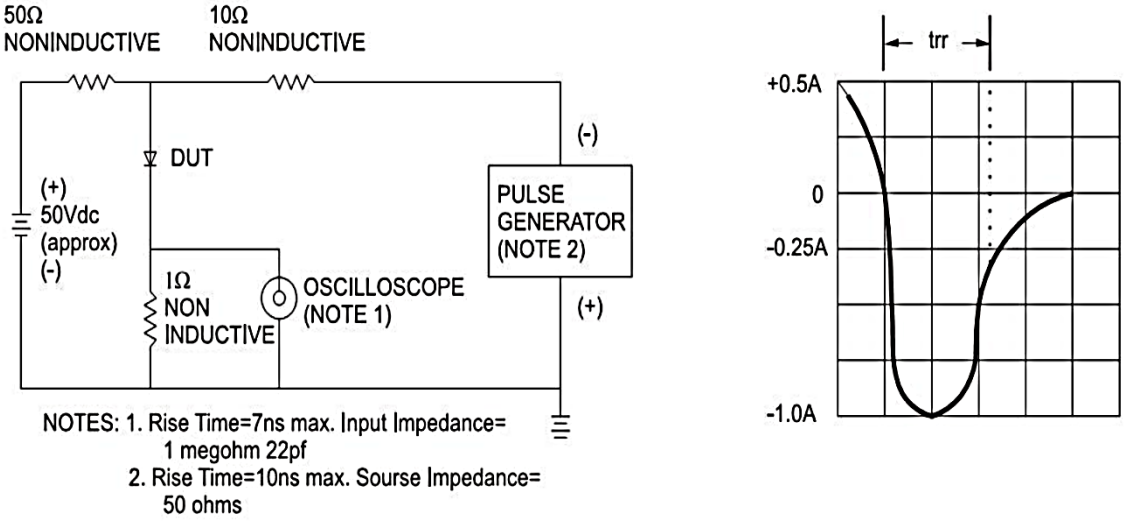
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

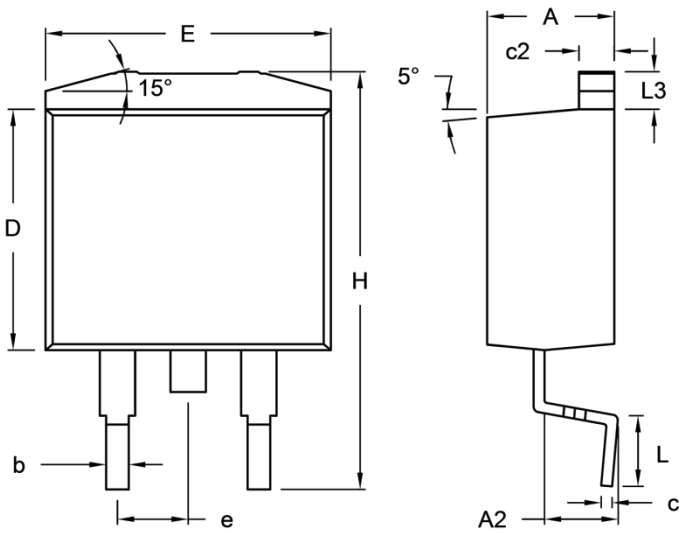
(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



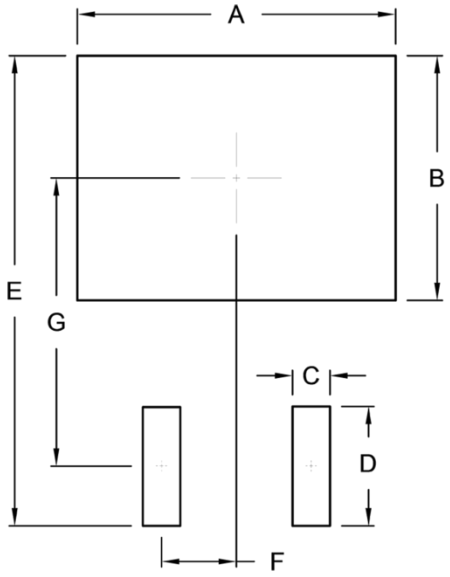
PACKAGE OUTLINE DIMENSIONS

TO-263AB (D^2PAK)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.44	4.70	0.175	0.185
A2	2.03	2.79	0.080	0.110
b	0.68	0.94	0.027	0.037
c	0.36	0.53	0.014	0.021
c2	1.14	1.40	0.045	0.055
D	8.25	9.25	0.325	0.364
E	-	10.50	-	0.413
e	2.41	2.67	0.095	0.105
H	14.60	15.88	0.575	0.625
L	2.29	2.79	0.090	0.110
L3	1.14	1.40	0.045	0.055

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	10.80	0.425
B	8.30	0.327
C	1.27	0.050
D	4.05	0.159
E	15.95	0.628
F	2.54	0.100
G	9.775	0.385

MARKING DIAGRAM

P/N = Marking Code
G = Green Compound
YWW = Date Code
F = Factory Code

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