1A, 50V - 1000V Glass Passivated Fast Recovery Rectifier

FEATURES

- Glass passivated chip junction
- High current capability, Low V_F
- High reliability
- High surge current capability
- Low power loss, high efficiency
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
$I_{F(AV)}$	1	A
V_{RRM}	50 - 1000	V
I_{FSM}	30	A
$T_{J\ MAX}$	150	°C
Package	DO-204AL (DO-41)	
Configuration	Single Die	

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

MECHANICAL DATA

- Case: DO-204AL (DO-41)
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 0.33 g (approximately)

DO-204AL (DO-41)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)									
PARAMETER	**SYMBOL**	**FR101 G-K**	**FR102 G-K**	**FR103 G-K**	**FR104 G-K**	**FR105 G-K**	**FR106 G-K**	**FR107 G-K**	**UNIT**
Marking code on the device		FR101G	FR102G	FR103G	FR104G	FR105G	FR106G	FR107G	
Repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Forward current	$I_{F(AV)}$	1							A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	30							A
Junction temperature	T_J	- 55 to +150							°C
Storage temperature	T_{STG}	- 55 to +150							°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	70	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode [1]		I_F = 1A, T_J = 25°C	V_F	-	1.3	V
Reverse current @ rated V_R per diode [2]		T_J = 25°C	I_R	-	5	μA
		T_J = 125°C		-	100	μA
Junction capacitance		1 MHz, V_R=4.0V	C_J	10	-	pF
Reverse recovery time	FR101G-K	I_F=0.5A , I_R=1.0A I_{RR}=0.25A	t_{rr}	-	150	ns
	FR102G-K			-		ns
	FR103G-K			-		ns
	FR104G-K			-		ns
	FR105G-K			-	250	ns
	FR106G-K			-	500	ns
	FR107G-K			-		ns

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

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
FR10xG-K (Note 1, 2)	A0	G	DO-41	3,000 / Ammo box (52mm taping)
	R0		DO-41	5,000 / 13" Paper reel
	R1		DO-41	5,000 / 13" Paper reel (Reverse)
	B0		DO-41	1,000 / Bulk packing

Notes:
1. "x" defines voltage from 50V (FR101G-K) to 1000V (FR107G-K)
2. Whole series with green compound (halogen-free)

EXAMPLE P/N

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
FR107G-K A0G	FR107G-K	A0	G	Green compound

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig1. Forward Current Derating Curve

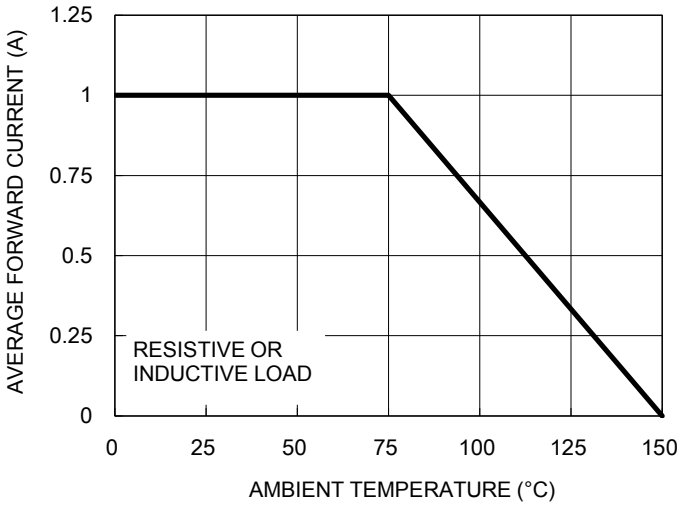


Fig2. Typical Junction Capacitance

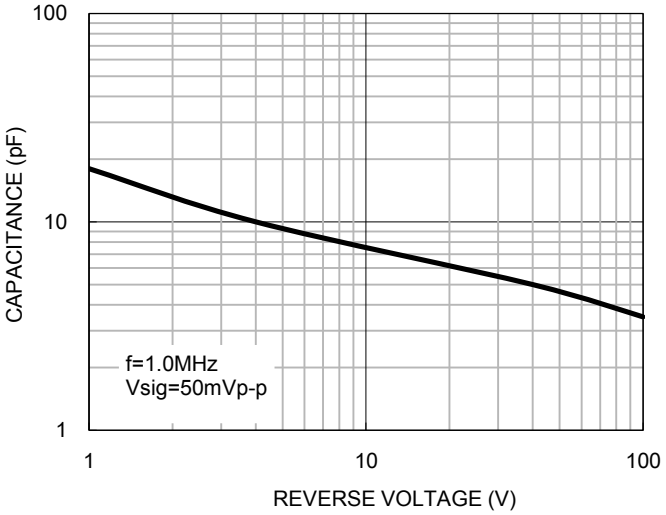


Fig3. Typical Reverse Characteristics

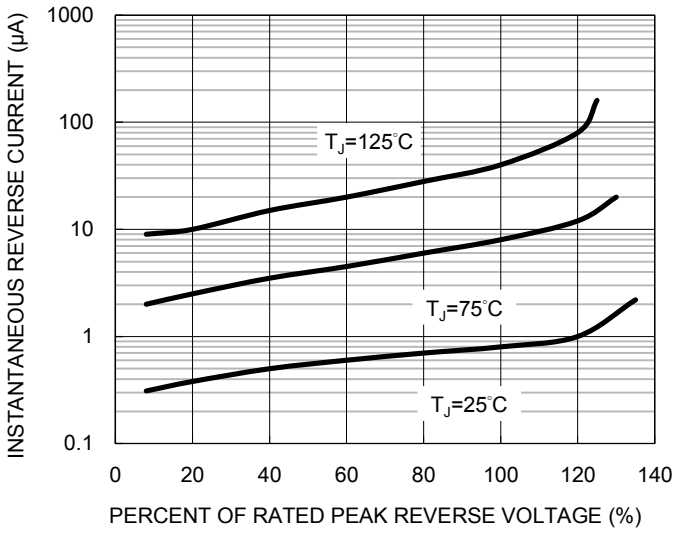


Fig4. Typical Forward Characteristics

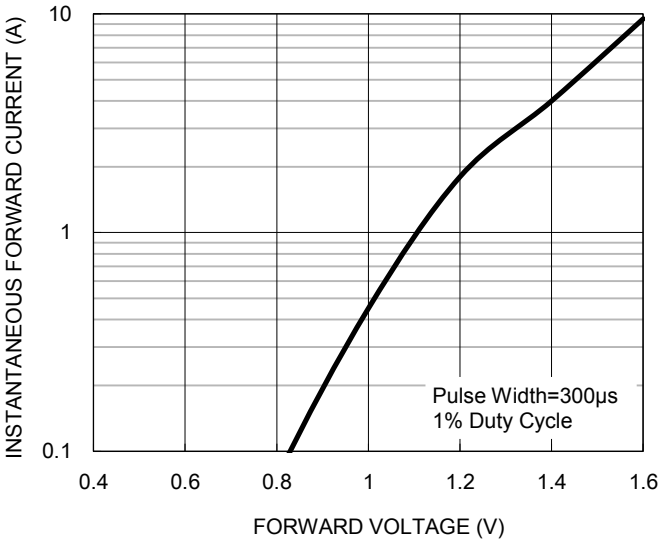


Fig5. Maximum Non-repetitive Forward Surge Current

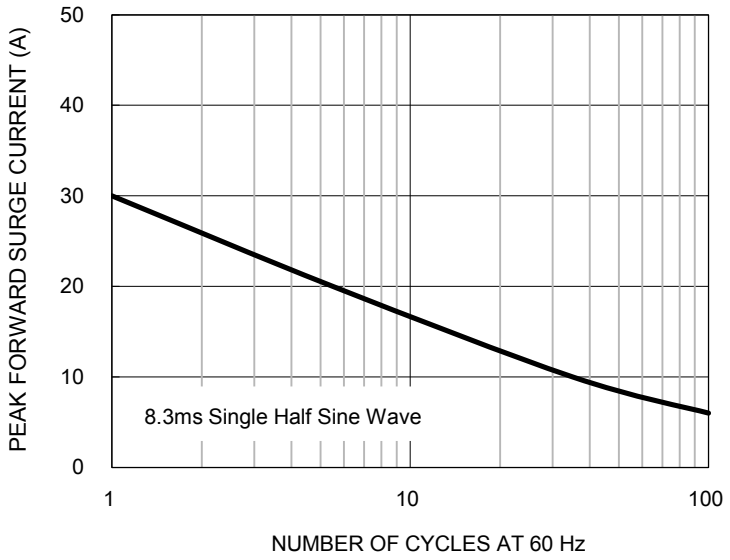
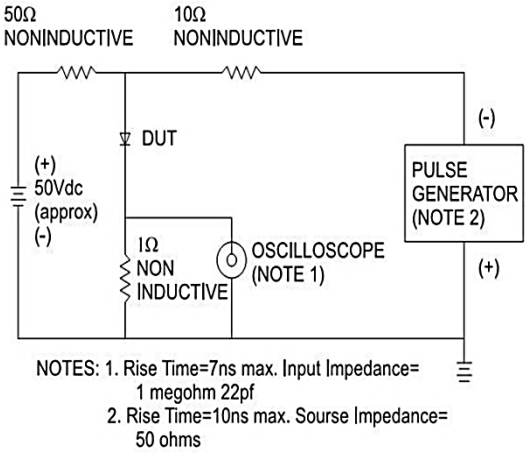
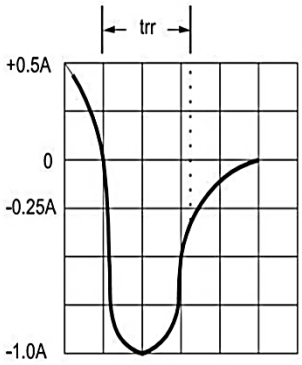


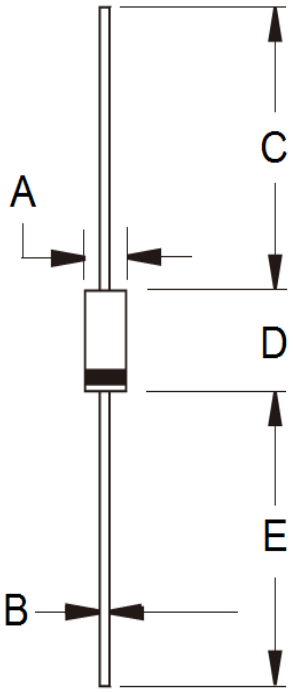
Fig6. Reverse Recovery Time Characteristic And Test Circuit Diagram





PACKAGE OUTLINE DIMENSIONS

DO-204AL (DO-41)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.00	2.70	0.079	0.106
B	0.71	0.86	0.028	0.034
C	25.40	-	1.000	-
D	4.20	5.20	0.165	0.205
E	25.40	-	1.000	-

MARKING DIAGRAM

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

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