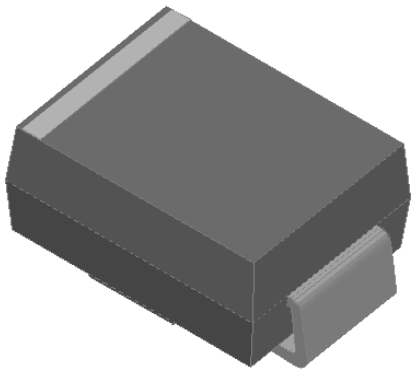
Surface Mount Super Fast Recovery Rectifier

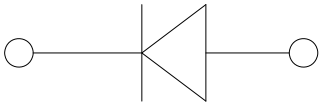


Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super Fast reverse recovery time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer and telecommunication.



Mechanical Data

- **Package**: DO-214AA (SMB)
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■Maximum Ratings (T_a=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	UG2A	UG2B	UG2C	UG2D	UG2F	UG2G	UG2H	UG2J
Device marking code			UG2A	UG2B	UG2C	UG2D	UG2F	UG2G	UG2H	UG2J
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	V	50	100	150	200	300	400	500	600
Maximum RMS Voltage	V_{RMS}	V	35	70	105	140	210	280	350	420
Maximum DC blocking Voltage	V_{DC}	V	50	100	150	200	300	400	500	600
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	I_O	A	2.0							
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25℃	I_{FSM}	A	50							
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25℃			100							
Current squared time @1ms≤t≤8.3ms Tj=25℃	I^2t	A^2s	10.375							
Storage temperature	T_{stg}	℃	-55 ~ +150							
Junction temperature	T_j	℃	-55 ~ +150							

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	UG2A	UG2B	UG2C	UG2D	UG2F	UG2G	UG2H	UG2J
Maximum instantaneous forward voltage	V_F	V	I_{FM}=2.0A	0.92				1.25		1.7	
Maximum reverse recovery time	t_{rr}	ns	I_F=0.5A,I_R=1.0A, I_{rr}=0.25A	25						35	
Maximum DC reverse current at rated DC blocking voltage	IR	μA	Tj =25℃	5.0							
			Tj =125℃	50							
Typical junction capacitance	Cj	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	40				26		23	

■Dynamic Characteristics

◆ UG2A THRU UG2D

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	Tj=25℃	I_F=1A，di/dt=-50A/us V_{RM}=30V	-	26	-
			Tj=25℃	I_F=2A di/dt=-200A/us V_{RM}=100V	-	23	-
			Tj=125℃		-	30	-
Peak recovery current	I_{RRM}	A	Tj=25℃		-	3.1	-
			Tj=125℃		-	5.0	-
Reverse recovery charge	Qrr	nC	Tj=25℃		-	35.4	-
			Tj=125℃		-	73.8	-
Non-repetitive avalanche energy	E_{AS}	mJ	Tj=25℃	I_R=1.8 A，L=15 mH	24.3	-	-

◆ UG2F THRU UG2G

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	Tj=25℃	I_F=1A，di/dt=-50A/us V_{RM}=30V	-	26	-
			Tj=25℃	I_F=2A di/dt=-200A/us V_{RM}=200V	-	24	-
			Tj=125℃		-	36	-
Peak recovery current	I_{RRM}	A	Tj=25℃		-	2.7	-
			Tj=125℃		-	4.5	-
Reverse recovery charge	Qrr	nC	Tj=25℃		-	32.3	-
			Tj=125℃		-	82.8	-
Non-repetitive avalanche energy	E_{AS}	mJ	Tj=25℃	I_R=0.5A，L=15 mH	1.9	-	-

◆ UG2H THRU UG2J

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	Tj=25℃	I_F=1A，di/dt=-50A/us V_{RM}=30V	-	40	-
			Tj=25℃	I_F=2A di/dt=-200A/us V_{RM}=400V	-	38	-
			Tj=125℃		-	59	-
Peak recovery current	I_{RRM}	A	Tj=25℃		-	4.2	-
			Tj=125℃		-	6.5	-
Reverse recovery charge	Qrr	nC	Tj=25℃		-	78.9	-
			Tj=125℃		-	192.7	-
Non-repetitive avalanche energy	E_{AS}	mJ	Tj=25℃	I_R=0.7A，L=15 mH	3.7	-	-

■Thermal Characteristics （T_a=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	UG2A	UG2B	UG2C	UG2D	UG2F	UG2G	UG2H	UG2J
Typical Thermal resistance	$R_{\theta J-A}$(1)	℃/W	70							
	$R_{\theta J-L}$(1)		20							
	$R_{\theta J-C}$(1)		15							

Note:
(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x8.0 mm) copper pad areas

■ Characteristics (Typical)

FIG.1: Io-TL Curve

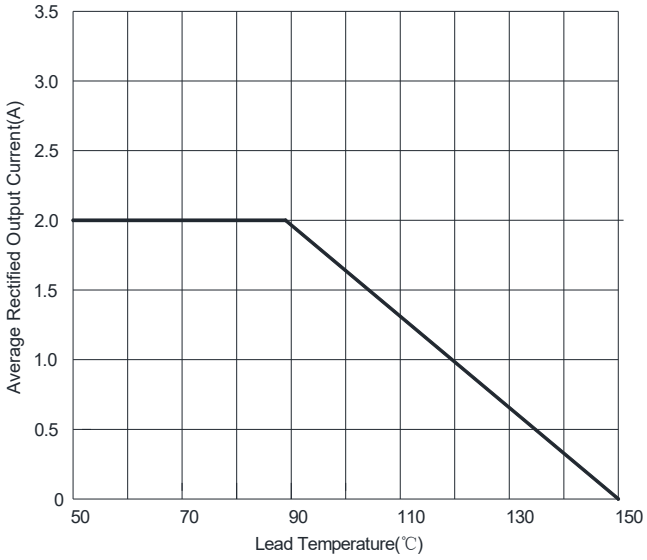


FIG2:Surge Forward Current Capability

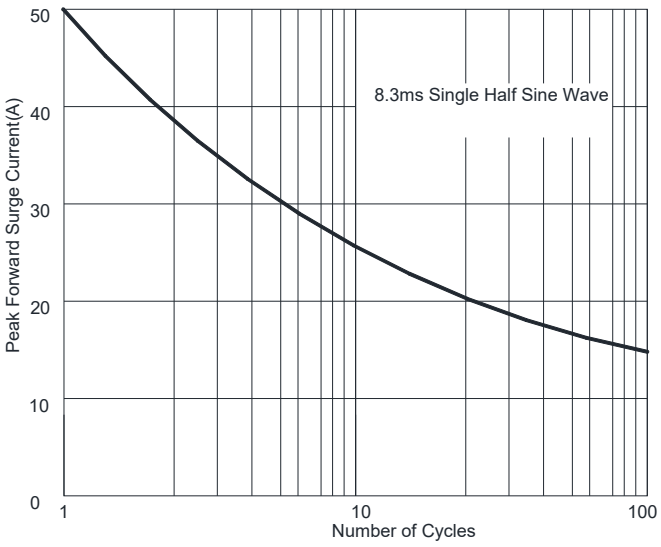


FIG.3: Typilcal Forward Characteristics

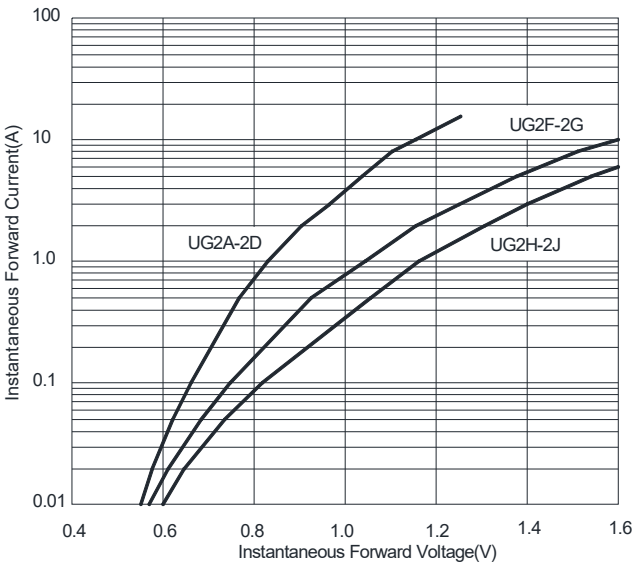


FIG4:Typical Reverse Characteristics

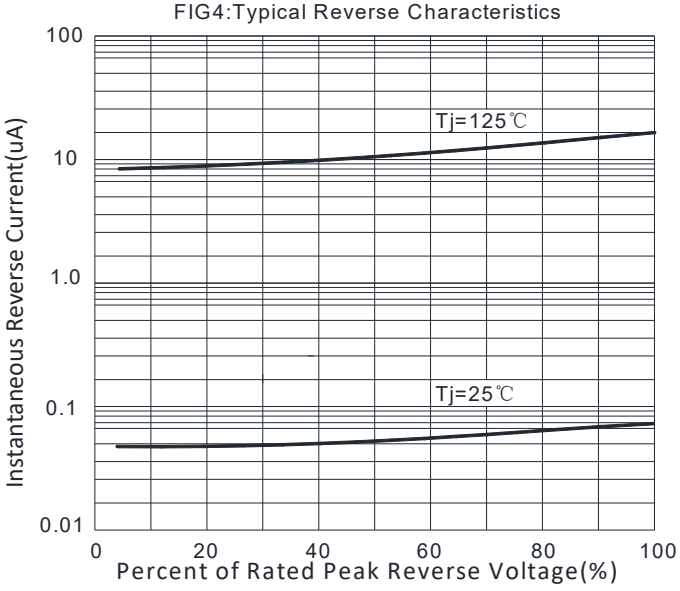
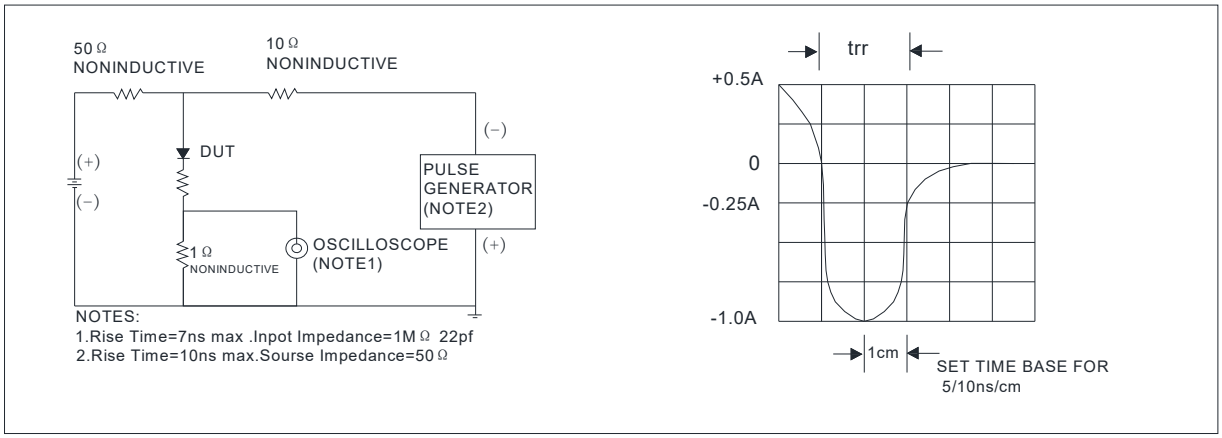


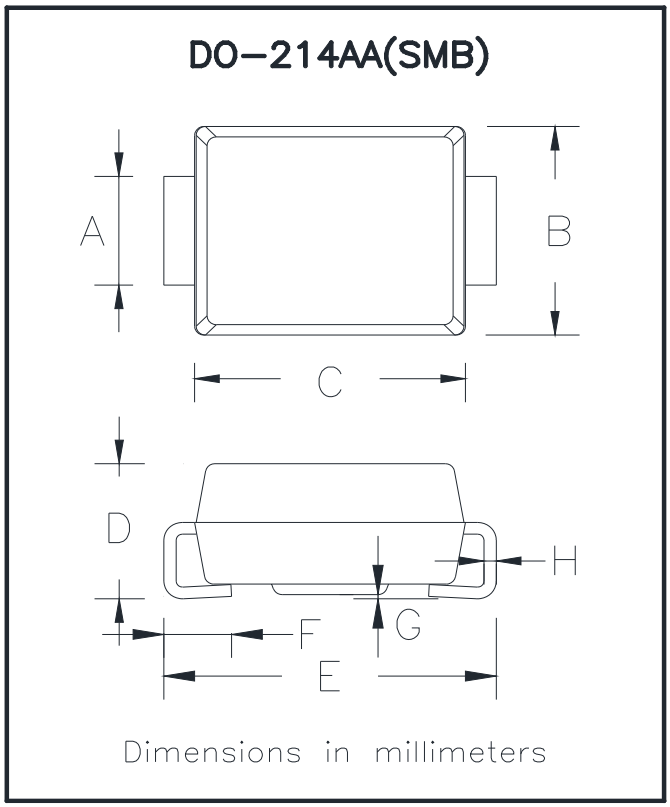
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■Ordering Information (Example)

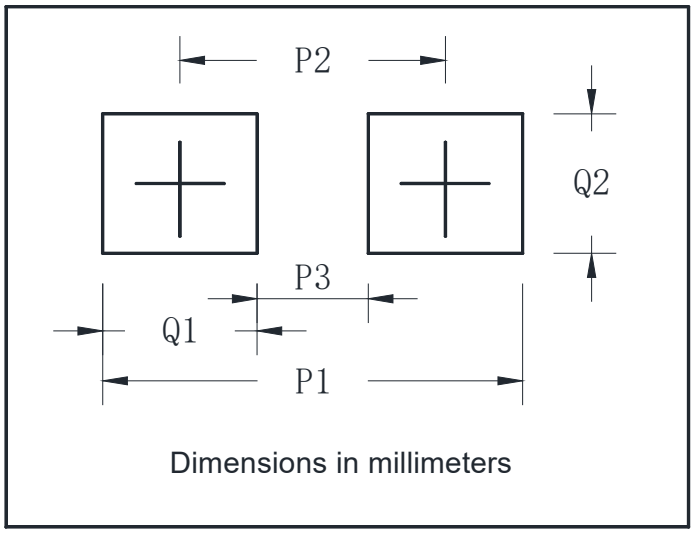
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
UG2A-UG2J	F1	Approximate 0.096	3000	/	48000	13” reel
UG2A-UG2J	F2	Approximate 0.096	750	6000	24000	7” reel
UG2A-UG2J	F3	Approximate 0.096	500	4000	16000	7” reel

■ Outline Dimensions



DO-214AA(SMB)		
Dim	Min	Max
A	1.85	2.15
B	3.30	3.94
C	4.05	4.75
D	1.99	2.61
E	5.21	5.59
F	0.90	1.41
G	0.05	0.20
H	0.15	0.31

■ Suggested pad layout



DO-214AA(SMB)	
Dim	Millimeters
P1	6.8
P2	4.3
P3	1.8
Q1	2.5
Q2	2.3

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