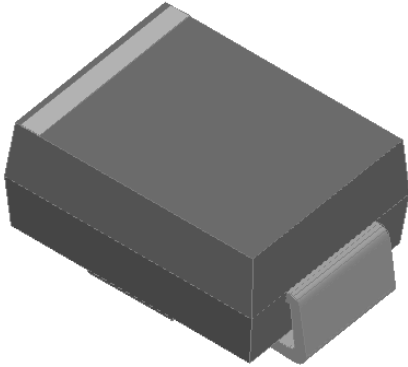


Surface Mount Super Fast Recovery Rectifier

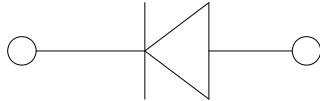


Features

- 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
- Part no. with suffix "Q" means AEC-Q101 qualified

Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer automotive 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°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	UG2AQ	UG2BQ	UG2CQ	UG2DQ
Device marking code			UG2A	UG2B	UG2C	UG2D
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	V	50	100	150	200
Maximum RMS Voltage	V _{RMS}	V	35	70	105	140
Maximum DC blocking Voltage	V _{DC}	V	50	100	150	200
Average rectified output current @60Hz sine wave, resistance load, T _L (Fig.1)	I _O	A	2.0			
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _J =25°C	I _{FSM}	A	50			
Current squared time @1ms≤t≤8.3ms T _J =25°C	I ² t	A ² s	10.375			
Storage temperature	T _{stg}	°C	-55 ~ +150			
Junction temperature	T _J	°C	-55 ~ +150			



UG2AQ THRU UG2DQ

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	UG2AQ	UG2BQ	UG2CQ	UG2DQ
Maximum instantaneous forward voltage	V _F	V	I _F =2.0A	0.92			
Maximum reverse recovery time	T _{RR}	ns	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	25			
Maximum DC reverse current at rated DC blocking voltage per diode@ V _{RM} =V _{RRM}	I _R	μA	T _J =25°C	2			
			T _J =125°C	20			
Typical junction capacitance	C _J	pF	V _R =4V, f=1MHz	25			

■ Dynamic Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		UG2AQ	UG2BQ	UG2CQ	UG2DQ
Typical reverse Recovery Time	T _{RR}	ns	T _J =25°C	I _F =1A, di/dt=-50A/us V _{RM} =30V	26			
			T _J =25°C		25			
			T _J =125°C		30			
Typical peak recovery current	I _{RRM}	A	T _J =25°C	I _F =2A di/dt=-200A/us V _{RM} =100V	3.5			
			T _J =125°C		6			
Typical reverse recovery charge	Q _{rr}	nC	T _J =25°C		47			
			T _J =125°C		85			
Minimum non-repetitive avalanche energy	EAS	mJ	T _J =25°C	I _R =1.8 A, L=15 mH	24.3			

■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	UG2AQ	UG2BQ	UG2CQ	UG2DQ
Typical Thermal resistance	R _{θJ-A(1)}	°C/W	70			
	R _{θJ-L(1)}		20			
	R _{θJ-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 x 8.0 mm) copper pad areas



UG2AQ THRU UG2DQ

■ Characteristics (Typical)

Fig.1:Forward Current Derating Curve

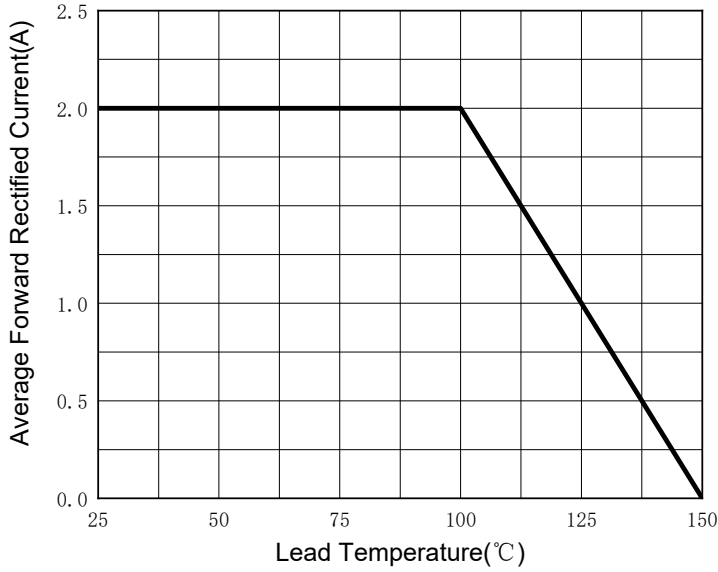


Fig.2:Maximum Non-Repetitive Peak Forward Surge Current

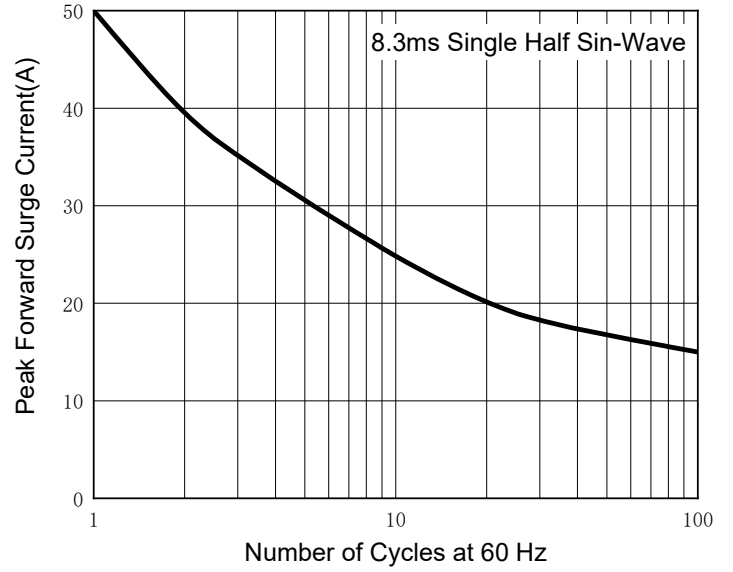


Fig.3:Typical Instantaneous Forward Characteristics

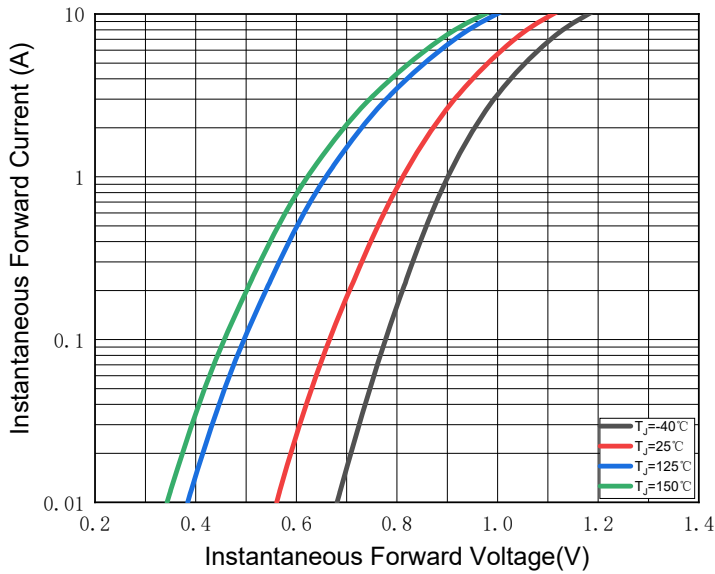


Fig.4:Typical Reverse Leakage Characteristics

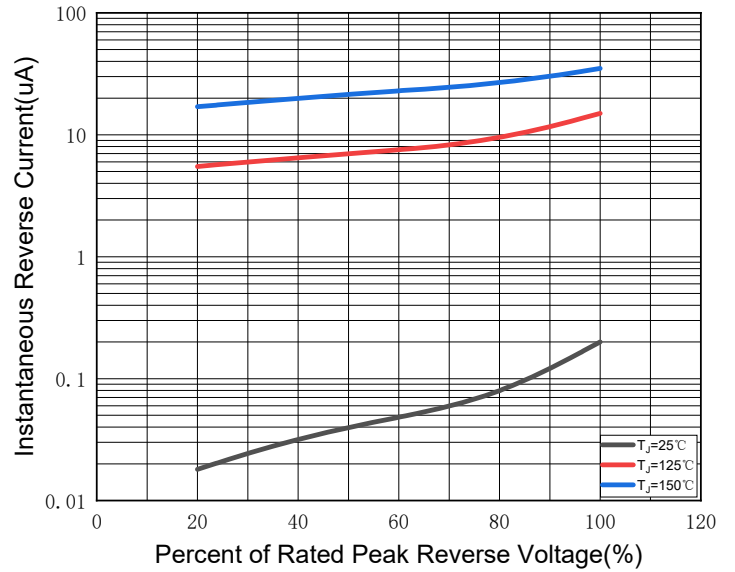
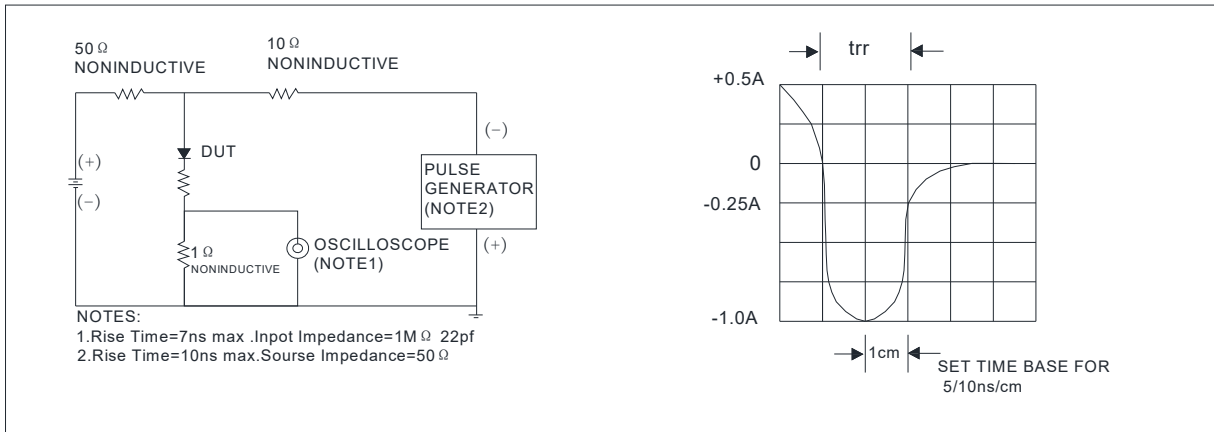


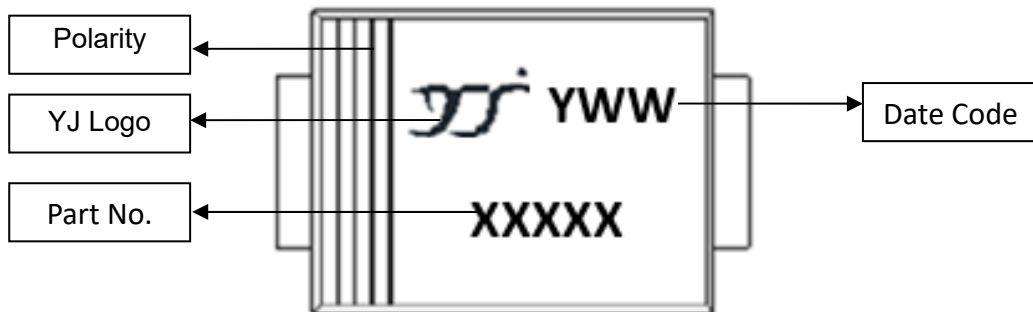
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
UG2AQ-UG2DQ	F1	Approximate 0.1	3000	48000	13" reel

Marking Information



Note:

- All marking is at middle of the product body
- All marking is in laser printing
- XXXXXX is marking code, like U1DQ marking code is U1D
- Body color: Black
- YWW is date code, "Y" is year. "WW" is week.

For instance:

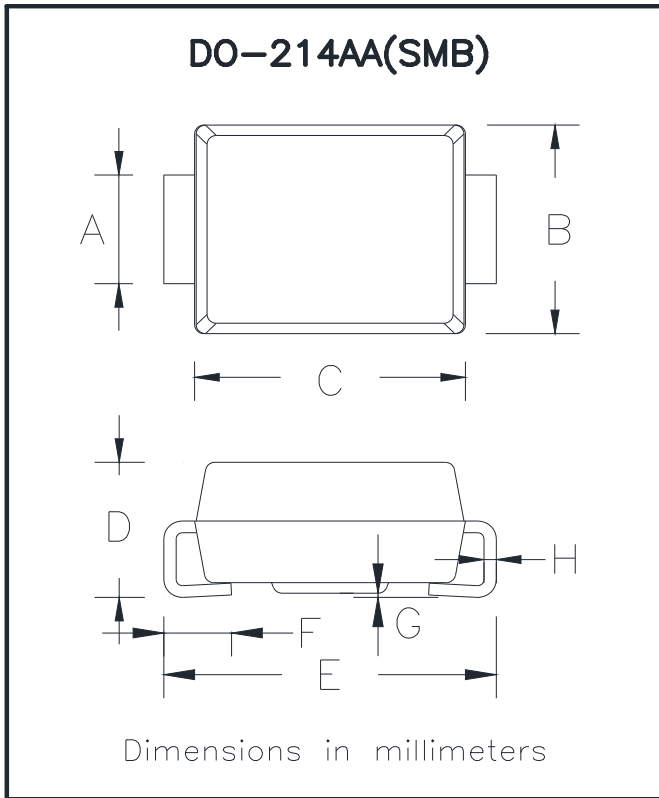
The 17th week of 2021, date code is 117

The 17th week of 2022, date code is 217



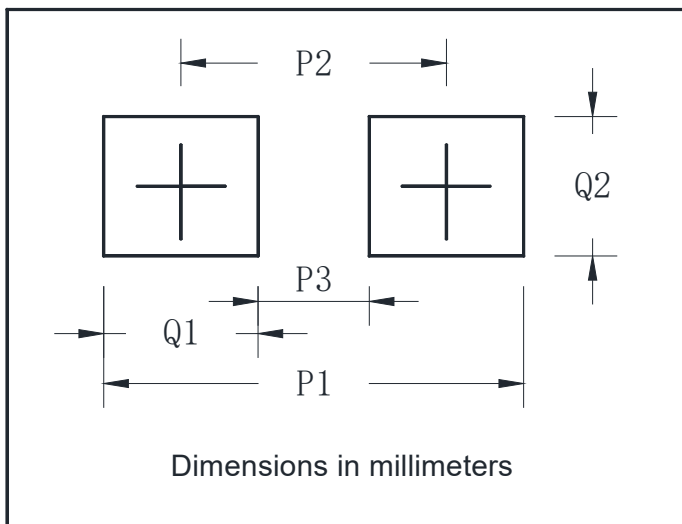
UG2AQ THRU UG2DQ

■ 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



UG2AQ THRU UG2DQ

Disclaimer

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ISSUE	REVISION	DATE
1.0	Add Datasheet	2-Apr-22